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PHYSICAL PROPERTIES OF STANDARD AGENTS, CANDIDATE AGENTS, AND RELATED COMPOUNDS AT SEVERAL TEMPERATURES (U)

by

John B. Samuel
Elwin C. Penski
John J. Callahan

Chemical Branch
Research Division

June 1983
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The physical properties, extrapolated properties, calculated properties, equation parameters, and references are listed for 55 agents, candidate agents, and related compounds. The physical property data system is described in general terms. Also, methods for the prediction of critical properties, diffusion coefficients of vapors in air and viscosities of vapors are described. The use, strengths, and weaknesses of the Antoine equation are discussed.
19. Key Words

<table>
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<td>Vapor Pressure</td>
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<td>Solubility</td>
<td>EA 3430</td>
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<tr>
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<td>EA 1677 VS</td>
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<td>EA 1699</td>
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<td>EA 1701 VX</td>
<td></td>
</tr>
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<td>EA 1724 QL</td>
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The work described in this report was authorized under Projects 1L161102A71A, Research in Defensive System for CW/BW; 1L762710AD61, Technical Evaluation of Foreign Chemical Warfare Potential; and 1L162706A553, Chemistry of Threat Agents and Chemical Technology. This work was started in August 1970 and completed in September 1982.

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1. (U) INTRODUCTION

(U) A problem facing users of physical chemical properties of chemical agents and related compounds has been the lack of a central source of reliable data. Data are often scattered in various technical reports, journals and laboratory notebooks. Many compilations of data fail to note original sources or important experimental details. As a result, the physical properties used in calculations in various technical reports are inconsistent and often not the best data available.

(U) For over a decade, efforts of chemists in the Physical Organic Section have been directed toward providing an automated physical property data system for chemical agents and related compounds. The characteristics of the desired system are listed in Table 1. To provide the maximum assistance to the user of physical chemical properties of chemical agents, every effort was made to obtain these characteristics.

(U) This report briefly describes the physical property data system along with methods used to predict additional properties. A compilation of physical, chemical and thermodynamic data and correlations is provided for 55 chemical agents and related compounds. A list of these compounds with their chemical structures is given in Appendix A. In Appendix B, the properties along with predicted properties are provided at temperatures of -40°, -20°, 0°, 20°, 25° and 40°C.

Table 1. (U) Characteristics of the Desired Data System

| 1. Use automation to ease access and to allow for upgrading of input. |
| 2. Enter properties in formatted form so that each value is machine readable. |
| 3. Evaluate all available data and use best data. |
| 4. Combine data to extend the experimental data range where appropriate. |
| 5. Calculate properties at any specified temperature. |
| 6. Provide easy to read printout with readily apparent units. |
| 7. Take all data from original sources with provided references. |
| 8. Provide data ranges and warnings where extrapolations are performed. |
2. (U) PHYSICAL CHEMICAL DATA SYSTEM

(U) All values for properties and equation parameters entered into the data system are formatted and identified by property code and compound number. Thus, all properties are machine readable except solubility which lists the solvent in the reference field. Table 2 lists the major components of an 80 character input line.

Table 2. (U) Components of a Data Input Line

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Compound code number</td>
</tr>
<tr>
<td>2.</td>
<td>Compound letter code</td>
</tr>
<tr>
<td>3.</td>
<td>Property or parameter code number</td>
</tr>
<tr>
<td>4.</td>
<td>Property or parameter value</td>
</tr>
<tr>
<td>5.</td>
<td>Temperature and/or upper or lower values of temperature range</td>
</tr>
<tr>
<td>6.</td>
<td>Reference field of up to 36 characters</td>
</tr>
</tbody>
</table>

(U) Compounds are listed in order of their EA number. A system of numbered codes was established to identify individual properties and parameters. The compound numbers, names, and structures for compounds contained in this report are tabulated in Appendix A.

(U) Considerable time and effort were spent locating, evaluating and selecting physical chemical properties to be included in this system. The data selected are considered the best available. When conflicting data were found, selection was made primarily on the basis of experimental procedure and reported sample purity. Therefore, the values in this system tend to be for purified rather than technical grade material. When properties had been extensively evaluated and documented in reviews, these values were used unless better data had become available.

(U) Two types of equations are used in this system to describe physical properties versus temperature. Where possible, data sets covering different temperature ranges were combined to generate property parameters based on extended temperature ranges.

(U) Antoine equations\(^1\) are used to describe both vapor pressure and viscosity. The merits of the Antoine equation for fitting and extrapolating vapor pressure data are covered extensively in Appendix C. The Antoine equation has been found also to work well for fitting and interpolating viscosity data. However, for many of the compounds, the Antoine constants for viscosity were generated from three points which covered a data range of only 25°C. Extensive extrapolation of viscosity for these compounds may result in a significant error.
Density, refractive index, and surface tension are each expressed as a linear function of temperature. The method of least squares was used to generate equation parameters from the experimental data.

The reference field allows up to 36 characters per property or set of parameters. Due to this space limitation, it was necessary to abbreviate references. These references should be available in the Chemical Systems Laboratory (CSL) Technical Library. Since some data are unpublished, it was necessary to list CSL notebook (NB) numbers. Several unreferenced data points are included in the system despite substantial efforts to reference all information. Additional information is sometimes provided in the reference field, e.g., sample purity and other characteristics. In cases where the property value was reported in the literature as a range, an average value was used and the range was reported in the reference field.

Numerous tests and warnings have been incorporated into this system for the following reasons: (1) to prevent the calculation of meaningless data, and (2) to warn the user when the calculated values fall outside the range of the experimental data used in generating the input parameters. The most common warning is "THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE." Due to the small temperature coefficients, extrapolations of the linear functions such as density and surface tension over broad temperature ranges are relatively reliable. The viscosity, and vapor pressure, along with properties derived from vapor pressure, undergo significant changes with temperature. Relatively poor values for these properties could result from large extrapolations, particularly when equations are derived from data collected over a narrow temperature range. An extrapolation of vapor pressure over a 200°C temperature range could result in errors of one magnitude or more in value. Tests and warnings also have been incorporated into the data system to prevent extrapolation of data from one physical state to another. Table 3 demonstrates how the system uses freezing points (fp) (or melting points (bp) to classify a specified temperature prior to calculating liquid properties. Appropriate statements and warnings are printed along with the calculated values.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Directed Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. bp &lt; T</td>
<td>Liquid properties are calculated at bp</td>
</tr>
<tr>
<td>2. fp &lt; T &lt; bp</td>
<td>Liquid properties are calculated at T</td>
</tr>
<tr>
<td>3. (fp-250°C) &lt; T &lt; fp</td>
<td>Liquid properties are calculated at T and it is noted that these values are calculated for a supercooled liquid</td>
</tr>
<tr>
<td>4. T &lt; (fp-250°C)</td>
<td>Liquid properties calculated at the fp</td>
</tr>
<tr>
<td>5. No fp</td>
<td>Liquid properties calculated at T with warning that there is no fp available</td>
</tr>
<tr>
<td>6. No bp</td>
<td>Liquid properties calculated at T with warning that there is no bp available</td>
</tr>
</tbody>
</table>
3. (U) PREDICTIONS OF PHYSICAL PROPERTIES

(U) Early in the development of the physical chemical property data system, it was realized that a great potential existed with this system for predicting additional properties. Bretzknajader's book, Prediction of Transport and Other Physical Properties of Fluids,\(^2\) provided much help in selecting procedures which required properties consistent with those contained within this data system. Various empirical relationships were added to the data system to allow the prediction of critical properties, the viscosity of vapor, and the diffusion coefficient of vapor into air.

3.1 (U) Critical Properties.

(U) The critical density, critical temperature, critical volume, and critical pressure are calculated using the method of Filippov.\(^3\) The property parameters used to calculate critical properties are the density equation constants A and B, and the molecular weight. The following equation allows the critical density \(\rho_c\) in g/ml to be calculated at T degrees Kelvin (\(^\circ\)K).

\[
\rho_c = 0.253 \left( \rho - T \frac{dp}{dT} \right) \quad (1)
\]

where \(\rho\) is the density of compound at temperature T, and \(dp/dT\) is the derivative of density with respect to T.

Critical temperature \(T_c\) in \(^\circ\)K is calculated using the following relationship:

\[
T_c = \frac{-1.95 \rho_c}{dp/dT} \quad (2)
\]

Critical pressure \(P_c\) in atmospheres (atm) is calculated as follows:

\[
P_c = \frac{RT_c \rho_c}{3.83 M} \quad (3)
\]

where \(R\) is 82.06 (ml atm/deg-mole), and \(M\) is the molecular weight.

The critical volume \(V_c\) is simply the gram molecular weight divided by the critical density.

(U) Using Filippov's method, good estimates of critical properties should be obtained when the following criteria are met for the density equation parameters:
a. Accurate measurements were made with pure material.
b. Experimental range is in an area where the vapor density is small compared to liquid density.
c. \( \frac{d\rho}{dT} \) is constant over a broad temperature range.

(\(U\)) For most liquids, \( \frac{d\rho}{dT} \) is relatively constant. Highly associated liquids are an exception. Water exhibits an abnormality at 40°C where \( \frac{d\rho}{dT} \) changes signs. Above 40°C, the magnitude of \( \frac{d\rho}{dT} \) increases significantly with increased temperature.

(\(U\)) Filippov\(^3\) found that errors in calculating critical properties usually did not exceed 2 percent for \( \rho_c \) and 3 percent for \( T_c \). Literature values for critical properties of chemical agents contained in this report were not available; therefore, four test compounds were added to the system. Table 4 contains a listing of the calculated critical properties and literature values for these compounds. Input for the test compounds consisted of molecular weights and density equation parameters. Density parameters were derived from literature values of density at various temperatures over a range of 25 to 35°C. The 2-propanol was selected as a nonideal case. Due to hydrogen bonding, its density is a nonlinear function of temperature.

(\(U\)) The estimated critical properties are in relatively good agreement with the literature values for the first three compounds. The estimated critical temperature for diethylamine is 22.5°C lower than the reported value; however, the difference in absolute temperature is only 5 percent. The estimated critical temperature for 2-propanol which is about 15 percent lower than the experimental value can be attributed primarily to the nonlinearity of its density versus temperature relationship.
<table>
<thead>
<tr>
<th>Compound</th>
<th>Density g/ml</th>
<th>Critical Temp °C</th>
<th>Vol. Pressure cm²/sec</th>
<th>Diffusion Coefficient of the Vapor into Air</th>
<th>Viscosity of the Vapor at Temp (°C)</th>
<th>Temp (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>0.303</td>
<td>271</td>
<td>258</td>
<td>0.077</td>
<td>14.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Estimated</td>
<td>0.304</td>
<td>288.5</td>
<td>257</td>
<td>0.082</td>
<td>14.2</td>
<td>100.0</td>
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<td>Chloroform</td>
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<td>266</td>
<td>232</td>
<td>0.085</td>
<td>25</td>
<td>212.5</td>
</tr>
<tr>
<td>Experimental</td>
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<td>263</td>
<td>228</td>
<td>0.091</td>
<td>25</td>
<td>212.5</td>
</tr>
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<td>Diethylamine</td>
<td>0.256</td>
<td>201</td>
<td>285</td>
<td>0.057</td>
<td>99.9</td>
<td>99.9</td>
</tr>
<tr>
<td>Estimated</td>
<td>0.246</td>
<td>223.5</td>
<td>297</td>
<td>0.084</td>
<td>99.8</td>
<td>99.8</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>0.264</td>
<td>313</td>
<td>55.2</td>
<td>0.079</td>
<td>0.019</td>
<td>0.084</td>
</tr>
<tr>
<td>Estimated</td>
<td>0.273</td>
<td>235.16</td>
<td>220</td>
<td>0.079</td>
<td>0.018</td>
<td>0.019</td>
</tr>
</tbody>
</table>

- All experimental values were taken from the International Critical Tables, except for the diffusion coefficient of chloroform and the critical properties of 2-propanol.
3.2 (U) Diffusion Coefficients.

The method of Othmer and Chen\textsuperscript{7} is used to calculate the diffusion coefficient of a vapor into air.

\[ D_{12}P = (2.52 \times 10^7) \mu^{2.74} \left[ \frac{1}{M_1} + \frac{1}{M_2} \right]^{0.5} \left( \frac{V_{c1}}{0.4} + \frac{V_{c2}}{0.4} \right)^{0.2} \]

where \( D_{12} \) is the diffusion coefficient of component one into component two in cm\(^2\)/sec

\( M_1 \) = molecular weight of component one (vapor)

\( M_2 \) = molecular weight of component two (air)

\( P \) = pressure in atm

\( V_{c1} \) = critical volume in ml of component one (vapor)

\( V_{c2} \) = critical volume in ml of component two (air)

\( \mu \) = viscosity of air in centipoise (cP) at the desired temperature.

The \( V_c \) of component one is calculated as described in the preceding section on critical properties. The value used for the molecular weight of air is 28.95\textsuperscript{8} while the \( \rho_c \) of air is reported to be 0.35 g/ml.\textsuperscript{9} Thus, the \( V_c \) of air is calculated to be 82.71 ml. In this report, all calculations of diffusion coefficients are made at one atm.

The viscosity of air is calculated at the required temperatures using the Sutherland\textsuperscript{4} equation for the influence of temperature on the viscosity of gases. When the constants for air\textsuperscript{4} are substituted into the equation, the following relationship is obtained:

\[ \mu_{air} = \frac{0.001488 T^{3/2}}{T + 120} \]

where \( \mu_{air} \) is the viscosity of air at \( T \) in cP.

Using diffusion coefficient literature values for 50 systems at 25°C, Othmer and Chen\textsuperscript{7} found an average absolute deviation of 5.75 percent. In addition, they compared their calculated values for an air-water system between 25 and 1220°C to observed values and found an average error of 7.61 percent. Citing experimental difficulties, they concluded that their method, as well as several more complex methods, should give values within experimental error.
3.3 (U) **Viscosity of Vapor.**

The modified Sutherland's equation shown below was developed by Licht and Stechert\textsuperscript{10} and is used to calculate the viscosity of gases. Within the pressure range where viscosity is not dependent on pressure, the equation allows the viscosity of a gas to be calculated from its critical temperature, its critical pressure, and its molecular weight.

\[
\mu = 6.30 \times 10^{-4} \left( \frac{M^{3/4} P_c}{T_c} \right)^{1/6} \frac{T_r^{3/2}}{T_r + 0.8}
\]

where \( \mu \) = viscosity of vapor in cP at \( T_0 \)K

\( M \) = molecular weight

\( P_c \) = critical pressure in atm

\( T_c \) = critical temperature in °K

\( T_r \) = reduced temperature = \( T/T_c \)

Licht and Stechert calculated the viscosity of gases for 23 compounds and found that for 19 of the compounds, estimated values fell within 10 percent of the literature values. The remaining compounds were water, helium, ammonia and ethanol. Estimated values for these compounds were within 21 percent of the literature values.\textsuperscript{10}

Table 4 lists the estimated and literature vapor viscosity values for the four test compounds. Using the previously estimated critical pressures and temperatures, the physical property data system was used to estimate the viscosity of vapor for these compounds. While agreement within 4 percent was obtained for the first three compounds, the estimated value for 2-propanol is 20 percent lower than the literature value. The deviation was reduced to 16 percent when the calculation was repeated using literature values for critical properties. These results for 2-propanol are consistent with Licht and Stechert's results for ethanol.

It should be noted that highly associated compounds may not give estimates as accurate as those given by the compounds found in table 4; the data and compounds shown in table 4 were probably used to develop the estimation techniques.


APPENDIX A

LIST OF COMPOUNDS (U)

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DECLASSIFY ON: OADR

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### APPENDIX A

**LIST OF COMPOUNDS (U)**

<table>
<thead>
<tr>
<th>Code Number</th>
<th>Code Name</th>
<th>Name</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>(U) EA 1033 (HD)</td>
<td></td>
<td>Bis(2-chloroethyl)sulfide; Distilled Mustard</td>
<td>CIC₂H₄SC₂H₄Cl</td>
</tr>
<tr>
<td>(U) EA 1034 (L)</td>
<td></td>
<td>2-Chlorovinyldichloroarsine</td>
<td>CICCH=CHAsCl₂</td>
</tr>
<tr>
<td>(U) EA 1036 (T)</td>
<td></td>
<td>Bis [2-(2-chloroethylmercapto)ethyl] ether</td>
<td>(CIC₂H₄SC₂H₄)₂O</td>
</tr>
<tr>
<td>(U) EA 1053 (NH₃)</td>
<td></td>
<td>Tris(2-chloroethyl)amine; Nitrogen Mustard -3</td>
<td>(CIC₂H₄)₃N</td>
</tr>
<tr>
<td>(U) EA 1205 (GA)</td>
<td></td>
<td>Ethyl N,N-dimethylphosphoramidocyanidate</td>
<td>CH₃(\text{\text{\text{-}}})P(\text{\text{-}})O(\text{\text{-}})C₂H₅</td>
</tr>
<tr>
<td>(U) EA 1207</td>
<td></td>
<td>Ethyl methylphosphonofluoridate</td>
<td>CH₃(\text{\text{\text{-}}})P(\text{\text{-}})O(\text{\text{-}})CH₃</td>
</tr>
<tr>
<td>(U) EA 1208 (GB)</td>
<td></td>
<td>2-Propyl methylphosphonofluoridate</td>
<td>CH₃(\text{\text{\text{-}}})P(\text{\text{-}})O(\text{\text{-}})CH₂F</td>
</tr>
<tr>
<td>(U) EA 1209 (GE)</td>
<td></td>
<td>2-Propyl ethylphosphonofluoridate</td>
<td>CH₃(\text{\text{\text{-}}})P(\text{\text{-}})O(\text{\text{-}})CH₂F</td>
</tr>
<tr>
<td>(U) EA 1210 (GD)</td>
<td></td>
<td>Pinacolyl methylphosphonofluoridate</td>
<td>CH₃(\text{\text{\text{-}}})P(\text{\text{-}})O(\text{\text{-}})CH-C(CH₃)₃</td>
</tr>
</tbody>
</table>

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**UNCLASSIFIED**

19
(U) EA 1211 (GH) 2-(4-Methylpentyl)methylphosphonofluoridate

(U) EA 1212 (GF) Cyclohexyl methylphosphonofluoridate

(U) EA 1213 2,2-Dimethylpropyl methylphosphonofluoridate

(U) EA 1214 2-Ethylhexyl methylphosphonofluoridate

(U) EA 1230 2-Phenoxyethyl methylphosphonofluoridate

(U) EA 1232 Methyl methylphosphonofluoridate

(U) EA 1244 2-Chloroethyl N,N-dimethylphosphoramidocyanidate

(U) EA 1245 Methyl N,N-diethylphosphoramidocyanidate

(U) EA 1246 Cyclopentyl methylphosphonofluoridate
(U) EA 1249 2 Methylpropyl methylphosphonofluoridate

(U) EA 1251 (DF) Methyl phosphonic difluoride

(U) EA 1253 (DICL) Methyl phosphonic dichloride

(U) EA 1255 2-Butyl methylphosphonofluoridate

(U) EA 1258 1-Butyl methylphosphonofluoridate

(U) EA 1261 1-Propyl methylphosphonofluoridate

(U) EA 1262 1-Hexyl methylphosphonofluoridate

(U) EA 1263 1-Decyl methylphosphonofluoridate

(U) EA 1264 4-(2,6-Dimethylheptyl) methylphosphonofluoridate

Appendix A
(U) EA 1274  2-Pentyl methylphosphonofluoridate

(C) EA 1356  (Racemic) 2-methylcyclohexyl methylphosphonofluoridate

(U) EA 1508 (VG)  0,0-Diethyl S-(2-diethylaminoethyl) phosphorothioate

(U) EA 1511 (VP)  3-Pyridyl 3,3,5-trimethylcyclohexyl methylphosphonate

(U) EA 1517 (VE)  0-Ethyl S-(2-diethylaminoethyl) ethylphosphonothioate

(U) EA 1576  2-Ethoxycarbonyl-1-methylvinyl 3-methylcyclohexyl methylphosphonate

(U) EA 1622  0-Isopropyl S-(2-diethylaminoethyl) methylphosphonothioate
(U) EA 1664  (VM)  O-Ethyl S-(2-diethylamino-ethyl) methylphosphonothioate

(U) EA 1677  (VS)  O-Ethyl S-(2-diisopropylaminoethyl) ethylphosphonothioate

(U) EA 1694  (VX)  O-Ethyl S-(2-dimethylamino-ethyl) methylphosphonothioate

(U) EA 1701  (QL)  O-Ethyl S-(2-diisopropylaminoethyl) methylphosphonothioate

(U) EA 1724  (QL)  O-(2-Diisopropylaminoethyl) methylphosphonitrite

(U) EA 1728  (QL)  O-Isopropyl S-(2-diisopropylaminoethyl) methylphosphonothioate

Appendix A

UNCLASSIFIED
(U) EA 1763  O-n-Propyl S-(2-diisopropylaminoethyl) methylphosphonothioate

(U) EA 2261  O-(2-Methylcyclohexyl) methylphosphonofluoridothioate

(U) EA 2337  O-Pinacolyl methylphosphonofluoridothioate

(U) EA 2361  O-Cyclopentyl methylphosphonofluoridothioate

(U) EA 3307  2,5-Dimethylcyclohexyl methylphosphonofluoridate

(U) EA 3430  2-Methylcyclopentyl methylphosphonofluoridate

(U) EA 4349  Cyclooctyl methylphosphonofluoridate

Appendix A
(U) EA 4923 1-Methoxy cycloheptatriene

(U) EA 5265 2,4-Dimethylcyclohexyl methylphosphonofluoridate

(C) EA 5365 2-Dimethylaminoethyl N,N-dimethylphosphoramidofluoridate

(U) EA 5389 0,2,4-Dimethylcyclohexyl methylphosphonofluoridothioate

(C) EA 5403 1-Dimethylamino-2-propyl N,N-dimethylphosphoramidofluoridate

(C) EA 5414 1-Dimethylamino-3-propyl N,N-dimethylphosphoramidofluoridate

(C) EA 5488 3-Quinuclidyl-N,N-dimethylphosphoramidofluoridate
APPENDIX B

PHYSICAL PROPERTY DATA (U)

CLASSIFIED BY: Multiple Sources
DECLASSIFY ON: OADR

(This page is UNCLASSIFIED)
SUMMARY OF PROPERTIES OF EA 1033 AT THE MELTING POINT IN LITRE OF -40 DEG C
COMMON NAME: HD FORMULA WEIGHT: 159.1 GENERAL REFERENCE: CRLR542

***** PLEASE NOTE: THE REQUESTED TEMPERATURES OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.47009, B = 1935.47, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT. REFERENCE: EQ.CAL FROM V389

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .42-01
ESTIMATED BOILING POINT(cent) = 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.3
VOLATILITY(MG/METER CUBED) = 37+03 VOLATILITY(MILLIMOLE/METER CUBED) = .23+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VAPOR PRESSURE(TORR) = .11+00 AT 25.0 DEG. CENT. REFERENCE: CRLR542
DENSITY(G/ML) = 1.2799 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2954 - .00107 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 RANGE 20-40C LIQUID

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.59600, B = -952.50, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542 WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTIPOISE) = 5.175

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/SQM) = 45.9700 - .1340*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

WERE USED TO CALCULATE THE SURFACE TENSION 43.9 DYNE/SQM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND) = 1.5305 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.5377 - .00050*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

HEAT OF COMBUSTION(KCAL/MOLE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)635
FLASH POINT, (CENITIGRADE) = 105.0 REFERENCE: MICRO METHOD CRLR542
HEAT OF FUSION(KCAL/MOLE) = 4.2 AT 25.0 DEG. CENT. REFERENCE: CRLR542
HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -87.91 AT 25.0 DEG. CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)835
HEAT CAPACITY (KCAL/MOLE) = 0.0558 AT 19.0 DEGREE CENT. REFERENCE: CRLR542
HEAT CAPACITY (KCAL/MOLE) = 0.0504 AT 0.0 DEGREE CENT. REFERENCE: CRLR542 RANGE 30 TO 10 DEG C
THERMAL CONDUCTIVITY(CAL/CM***2/CM/DEG. C./SEC) = 1.316-03 AT 20.0 DEGREE CENT. REFERENCE: CRLR542
THERMAL CONDUCTIVITY(CAL/CM***2/CM/DEG. C./SEC) = 1.387-03 AT 4.0 DEGREE CENT. REFERENCE: CRLR542
FREEZING POINT (DEG. CENT.) = 14.45 REFERENCE: CRLR542
SOLUBILITY(G/100G SOLVENT) = 0.020+00 AT 22.0 DEGREE CENTIGRADE REFERENCE: WATER CRL542

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE: VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4020 456.11 395.70 39.49

DIFFUSION COEF. = .055 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS Eq.. J.PHY.CHEM.48.23(1944)

VISCOITY OF VAPOR = 8.37-03 CENTIPOISE

END OF COMPUND EA 1033 AT 14.5 DEGREES C. PAGE NUMBER B- 1
SUMMARY OF PROPERTIES OF EA 1033 AT THE MELTING POINT IN LIQUID OF -20 DEG C

COMMON NAME: HD FORMULA WEIGHT 159.1 GENERAL REFERENCE: CRLR542

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.47005, B = 1935.47, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT. REFERENCE: EQ.CAL FROM V389

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.42-01
ESTIMATED BOILING POINT(DEG. CENT.) = 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 19.3
VOLATILITY(DENSITY/METER CUBED) = 0.374-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VAPOR PRESSURE(TORR) = 0.11+00 AT 25.0 DEG. CENT. REFERENCE: CRLR542
DENSITY(G/MILLILITRE) = 1.2799 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2954 - 0.00107 • TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 RANGE 20-40C LIQUID

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.59800, B = -952.50, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542 WERE USED TO CALCULATE THE SURFACE TENSION

VISCOSITY(FLUID DYNAMICS) = 5.175

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 45.6790 - 0.1340 • TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

HEAT OF COMBUSTION(KCAL/MOLE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)635

FLASH POINT, (DEGREES CENTIGRADE) = 105.0 REFERENCE: MICRO METHOD CRLR542

HEAT OF SUBLIMATION(KCAL/MOLE) = 18.60 AT 14.5 DEGREE CENT. REFERENCE: CRLR542

HEAT OF FUSION(KCAL/MOLE) = 4.2 AT 25.0 DEGREE CENT. REFERENCE: CRLR542

HEAT CAPACITY (KCAL/MOLE) = 0.0589 AT 19.0 DEGREE CENT. REFERENCE: CRLR542

HEAT CAPACITY (KCAL/MOLE) = 0.0501 AT 0.0 DEGREE CENT. REFERENCE: CRLR542 -30 TO 10 DEG C

THERMAL CONDUCTIVITY(KCAL/CM•°C/SEC) = 0.316-03 AT 20.0 DEGREE CENT. REFERENCE: CRLR542

THERMAL CONDUCTIVITY(KCAL/CM•°C/SEC) = 0.387-03 AT 4.0 DEGREE CENT. REFERENCE: CRLR542

FREEZING POINT (DEG. CENT.) = 14.45 REFERENCE: CRLR542

SOLUBILITY(G/100G SOLVENT) = 0.920+00 AT .220 DEGREE CENTIGRADE REFERENCE: WATER CRL542

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM
1.020 455.11 395.70 39.49

DIFFUSION COEF. = 0.055 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQU. J.PHY.Chem.45,231944) VISCOSITY OF VAPOR = 0.374-03 CENTIPOISE

END OF COMPOUND EA 1033 AT 14.5 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1033 AT .0 DEGREES CENTIGRADE
COMMON NAME: HD FORMULA WEIGHT: 159.1 GENERAL REFERENCE: CRLR542

**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= .7.40709, B= 1935.47, C= 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 14.9 TO 110.0 DEG. CENT. REFERENCE: EQ.CAL FROM V389

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .99-02
ESTIMATED BOILING POINT(CENT.)= 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= .15.8
VOLATILITY(MG/METER CUBED)= .92-02 VOLATILITY(MILLIMOLE/METER CUBED)= .58-00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

VAPOR PRESSURE(TORR)= .11400 AT 25.0 DEG. CENT. REFERENCE: CRLR542
DENSITY(G/ML)= 1.2954 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2954 - .00107 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 RANGE 20-40C LIQUID

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.59800, B= -952.50, C= 273.2 DETERMINED OVER THE TEMPERATURE
RANGE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542 WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTPOISE)= 7.746

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE EQUATION: SURFACE TENSION(DYNES/CM)= .45.8700 - .1340*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE
20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542

WERE USED TO CALCULATE THE SURFACE TENSION= .45.9 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

REFRACTIVE INDEX(ND)= 1.5377 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5377 - .00059*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

HEAT OF COMBUSTION(KCAL/MOLE)= -.756 AT 25.0 DEG. CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)635
FLASH POINT, [deG.CENTIGRADE]= 105.0 REFERENCE: MICRO METHOD CRLR542
HEAT OF SUBLIMATION(KCAL/MOLE)= 18.60 AT 145 DEGREE CENT. REFERENCE: CRLR542
HEAT OF FUSION(KCAL/MOLE)= .42 AT 25.0 DEGREE CENT. REFERENCE: CRLR542
HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -.47.91 AT 25.0 DEGREE CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)635
HEAT CAPACITY (KCAL/MOLE)= .0569 AT 19.0 DEGREE CENT. REFERENCE: CRLR542
HEAT CAPACITY (KCAL/MOLE)= .0504 AT 0 DEGREE CENT. REFERENCE: CRLR542 -30 TO 10 DEG C

THERMAL CONDUCTIVITY(CAL/CM**2/CM/DEG. C./SEC)= .316-03 AT 20.0 DEGREE CENT. REFERENCE: CRLR542
THERMAL CONDUCTIVITY(CAL/CM**2/CM/DEG. C./SEC)= .387-03 AT 40.0 DEGREE CENT. REFERENCE: CRLR542

FREEZING POINT (DEG. CENT.)= 14.45 REFERENCE: CRLR542
SOLUBILITY(G/100G SOLVENT) .920-00 AT 22.0 DEGREE CENTIGRADE REFERENCE: WATER CRLR542

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM
.4020 456.11 395.70 39.49

DIFFUSION COEF. = .049 CM/SEC CALCULATED FOR VAPOR IN AIR

VISCOSITY OF VAPOR = .00-03 CENTPOISE
SUMMARY OF PROPERTIES OF EA 1033 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: HD  FORMULA WEIGHT: 159.1  GENERAL REFERENCE: CRLR542

THE FOLLOWING Antoine Constants(EATR 4491): A = 7.47009, B = 1935.47, C = 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT.  REFERENCE: Eo.CAL FROM V389
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORB)= .89-01
ESTIMATED BOILING POINT(cent. )= 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.1
VOLATILITY(MG/METER CUBED)= .60+03
VAPOR PRESSURE(TORB)= .11+00 AT 25.0 DEG. CENT.  REFERENCE: CRLR542
DENSITY(G/ML)= 1.2739 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2954 - .00107 *TEMP.(c.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: CRLR542 RANGE 20-40C LIQUID

THE FOLLOWING Antoine Constants(EATR 4491): A = -2.59800, B = -952.50, C = 273.2 DETERMINED OVER THE TEMPERATURE
RANGE 15.0 TO 35.0 DEG. CENT.  REFERENCE: CRLR542
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(centipoise)= 4.479

THE EQUATION: SURFACE TENSION(DYNES/CM)= 45.8700 - .1340*TEMP.(C.)
Determined over the temperature range 20.0 TO 30.0 DEG. CENT.  REFERENCE: CRLR542
WERE USED TO CALCULATE THE SURFACE TENSION

REFRACTIVE INDEX(ND)= 1.5277 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5377 - .00050*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE

20.0 TO 30.0 DEG. CENT.  REFERENCE: CRLR542

HEAT OF COMBUSTION(KCAL/MOLE)= -7.56 AT 25.0 DEG. CENT.  REFERENCE: J.RES NBS SEC A 1975 79A(5)635
FLASH POINT.(deg. Cent)= 105.0  REFERENCE: MICRO METHOD CRLR542
HEAT OF SUBLIMATION(KCAL/MOLE)= 18.60 AT 14.5 DEGREE CENT.  REFERENCE: CRLR542
HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -47.91 AT 25.0 DEGREE CENT.  REFERENCE: J.RES NBS SEC A 1975 79A(5)635
HEAT CAPACITY (KCAL/MOLE)= .0509 AT 19.0 DEGREE CENT.  REFERENCE: CRLR542
HEAT CAPACITY (KCAL/MOLE)= .6504 AT 0 DEGREE CENT.  REFERENCE: CRLR542 -30 TO 10 DEG C
THERMAL CONDUCTIVITY(CAL/CM**2/CM/DEG.C./SEC )= .316-03 AT 20.0 DEGREE CENT.  REFERENCE: CRLR542
THERMAL CONDUCTIVITY(CAL/CM**2/CM/DEG.C./SEC )= .387-03 AT 4.0 DEGREE CENT.  REFERENCE: CRLR542
FREEZING POINT (DEG. CENT.)= 14.45 REFERENCE: CRLR542
SOLUBILITY(G/100G SOLVENT) = .920+00 AT 22.0 DEGREE CENTIGRADE REFERENCE: WATER CRL542

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GH/CC  DEG C  CC/HOLE ATM.
.1020  456.11  395.70  38.49

DIFFUSION COEF. = .057 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 6.52-03. CENTIPOISE
SUMMARY OF PROPERTIES OF EA 1033 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: HD FORMULA WEIGHT: 158.1
GENERAL REFERENCE: CRLR542

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.47009, B = 1935.47, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT. REFERENCE: EQ.CAL FROM V389
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .14400
ESTIMATED BOILING POINT(CENT.) = 217.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.0
VOLATILITY(MG/METER CUBED) = .91+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .57+01
VAPOR PRESSURE(TORR) = .11+00 AT 25.0 DEG. CENT. REFERENCE: CRLR542
DENSITY(G/ML) = 1.2685 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2964 - .00107 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 RANGE 20-40C LIQUID

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.59800, B = -952.50, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 18.0 TO 35.0 DEG. CENT. REFERENCE:CRLR542
WERE USED TO CALCULATE THE VISCOSITY

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DCC C CC/MOLE ATM
.1020 456.11 395.70 39.49

DIFFUSION COEF. = .060 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.,49,23(1944)

VISCOSITY OF VAPOR = 6.65-03 CENTIPOISE

END OF COMPOUND EA 1033 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1033 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: HD FORMULA WEIGHT: 159.1 GENERAL REFERENCE: CRLR542

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.47099, B = 1935.47, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 14.9 TO 140.0 DEG. CENT. REFERENCE: EQ. CAL FROM V309

WERE USED TO CALCULATE THE FOLLOWING PROPERTIES:

VAPOR PRESSURE (TORR) = .3500
ESTIMATED BOILING POINT (CENT.) = 217.5
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = 14.5
VOLATILITY (MG/METER CUBED) = .29±04 VOLATILITY (MILLIMOLE/METER CUBED) = .18±02
VAPOR PRESSURE (TORR) = .11±00 AT 25.0 DEG. CENT. REFERENCE: CRLR542
DENSITY (G/ML) = 1.2524 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2954 -.00107 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 RANGE 20-40C LIQUID

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.59800, B = 952.50, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 35.0 DEG. CENT. REFERENCE: CRLR542

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTIPOISE) = 2.770

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 45.0700 - 1.340 * TEMP. (C.)

WAS USED TO CALCULATE THE SURFACE TENSION 40.5 DYNES/CM

REFRACTIVE INDEX (ND) = 1.5177 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (ND) = 1.5377-.00050 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

HEAT OF COMBUSTION (KCAL/MOLE) = -7.56 AT 25.0 DEG. CENT. REFERENCE: J. RES NBS SEC A 1975 79A(5)635

FLASH POINT, °C (CLINTON) = 105.0 REFERENCE: MICRO METHOD CRLR542

HEAT OF EVAPORATION (KCAL/MOLE) = 18.80 AT 14.5 DEGREE CENT. REFERENCE: CRLR542

HEAT OF FUSION (KCAL/MOLE) = 4.2 AT 25.0 DEGREE CENT. REFERENCE: CRDL542

HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = 47.91 AT 25.0 DEGREE CENT. REFERENCE: J. RES NBS SEC A 1975 79A(5)635

HEAT CAPACITY (KCAL/MOLE) = .0560 AT 19.0 DEGREE CENT. REFERENCE: CRLR542

HEAT CAPACITY (KCAL/MOLE) = .024 AT 1.0 DEGREE CENT. REFERENCE: CRLR542 - 30 TO 10 DEG C

THERMAL CONDUCTIVITY (CAL/CM-CM/SEC) = .316-03 AT 20.0 DEGREE CENT. REFERENCE: CRLR542

THERMAL CONDUCTIVITY (CAL/CM-CM/SEC) = .387-03 AT 4.0 DEGREE CENT. REFERENCE: CRLR542

FREEZING POINT (DEG. CENT.) = 14.45 REFERENCE: CRLR542

SOLUBILITY (G/100G SOLVENT) = .920±00 AT 22.0 DEGREE CENTIGRADE REFERENCE: WATER CRDL542

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GR/CC DEG C CC/MOLE ATM.
-.0300 456.11 395.70 39.40

DIFFUSION COEF. = .066 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR


VISCOITY OF VAPOR = 7.04-03 CENTIPOISE

END OF COMPOUND EA 1033 AT 40.0 DEGREES C. PAGE NUMBER B-6
**SUMMARY OF PROPERTIES OF EA 1834 AT THE MELTING POINT IN LIEU OF -40 DEG C**

**COMMON NAME:** l-formula weight: 207.3 **GENERAL REFERENCE:** S.O./R/667

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 6.40361, B= 1237.03, C= 155.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. **REFERENCE:** S.O./R/561 HIGH PURITY

WE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR)= 0.2401
ESTIMATED BOILING POINT (CENT.)* = 195.9
HEAT OF VAPORIZATION (KCAL/OR MOLE)= 17.6
VOLATILITY (MG/METER CUBED)= 0.2903 VOLATILITY (MILLIMOLE/METER CUBED)= 0.1401

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML)= 1.9230 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.9210 - 0.00167 * TEMP (C) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. **REFERENCE:** S.O./R/667

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -1.02201, B= -223.38, C= 142.4 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. **REFERENCE:** S.O./R/544 WE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTIPoise)= 3.631

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNE/CM)= 44.1900 - 0.1218 * TEMP (C) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. **REFERENCE:** S.O./R/544 WE USED TO CALCULATE THE SURFACE TENSION

44.3 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -1.2 **REFERENCE:** -18 TO -1 DEG C ETF100-41V4

REFRACTIVE INDEX (ND)= 1.6207 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (ND)= 1.6207 - 0.00050 * TEMPERATURE (C) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. **REFERENCE:** S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 
ZEHRN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.6014 429.11 344.72 43.66

DIFFUSION COEF. = 0.052 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48, 23 (1844) VISCOSITY OF VAPOR = 7.66-03 CENTIPoise

END OF COMPOUND EA 1034 AT -1.2 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1034 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: LA FORMULA WEIGHT: 207.3 GENERAL REFERENCE: S.O./R/667
**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.40281, B = 1237.03, C = 195.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/581 HIGH PURITY
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = 18.02
ESTIMATED BOILING POINT (CENT.) = 195.9
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 19.8
VOLATILITY (MG/METER CUBED) = 24.02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.9544 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.9210 - 0.00167 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02201, B = -223.38, C = 142.4 DETERMINED OVER THE TEMPERATURE
 RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST) = 0.353

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 44.1900 - .1218 * TEMP. (C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/544
WERE USED TO CALCULATE THE SURFACE TENSION 46.6 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -1.2
REFRACTIVE INDEX (IND) = 1.6301 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (IND) = 1.6201 - .00050 * TEMPERATURE (C.)
DETERMINED OVER THE TEMPERATURE RANGE
20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
6014 429.11 344.72 43.66

DIFFUSION COEF. = .044 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1034 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1034 AT .0 DEGREES CENTIGRADE
COMMON NAME: L FORMULA WEIGHT: 207.3 GENERAL REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.40261, B = 1237.03, C = 155.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/561 HIGH PURITY

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .27 - 0.1
ESTIMATED BOILING POINT (CENT.) = 195.9
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 17.5
VOLATILITY (MG./METER CUBED) = .33 + 03 VOLATILITY (MILLIMOLE./ METER CUBED) = .18 + 01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.9210 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.9210 - .00167 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.02201, B = -223.36, C = 142.4 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: 50/R/544 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTIPOISE) = 3.521

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 44.1900 - .1218 * TEMP. (C.)

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/544 WERE USED TO CALCULATE THE SURFACE TENSION 44.2 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -1.2 REFERENCE: -18 TO .1 DEG C ETP100-41V4
REFRACTIVE INDEX (ND) = 1.6201 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (ND) = 1.6201 - .00050 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.6014 429.11 344.72 43.66

DIFFUSION COEF. = .653 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48, 23(1944) VISCOSITY OF VAPOR = 7.70-03 CENTIPOISE

END OF COMPOUND EA 1034 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1034 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: L FORMULA WEIGHT: 207.3 GENERAL REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.40381, B= 1237.03, C= 155.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/561 HIGH PURITY WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= 0.22+00
ESTIMATED BOILING POINT( CENT. )= 195.9
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.0
VOLATILITY(MG/METER CUBED)= 0.25+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .12+02

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DENSITY(G/ML)= 1.8876 WAS CALCULATED FROM THE EQUATION: DENS. : Y= 1.9210 - .00187 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02201, B= -223.38, C= 142.4 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SQ/R/667 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY( CENTIPOISE)= 2.257

THE EQUATION: SURFACE TENSION(DYNES/CM)= 44.1900 - .1218*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/544
WERE USED TO CALCULATE THE SURFACE TENSION 41.8 DYNES/CM

MELTING POINT (DEG. CENT.) = -1.2 REFERENCE: -18 TO .1 DEG C E TF100-41V4 REFRACTIVE INDEX(ND)= 1.6101 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND)= 1.6201 - .00050*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G0/CC DEG C CC/MOLE ATM.
.60.4 429.11 344.72 43.66

DIFFUSION COEF. = .061 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 8.36-03 CENTIPOISE

END OF COMPOUND EA 1034 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1034 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: L 
FORMULA WEIGHT: 207.3 
GENERAL REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.40361, B= 1237.03, C= 155.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/561 HIGH PURITY WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .35+00 
ESTIMATED BOILING POINT(CENT.)= 195.9
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.5
VOLATILITY(MG/METER CUBED)= .39+04 
VOLATILITY(MILLIMOLE/ METER CUBED)= .19+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY(G/ML)= 1.8793 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.9210 - .00167*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667 WERE USED TO CALCULATE THE VISCOSITY

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02201, B= -223.38, C= 142.4 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/544 WERE USED TO CALCULATE THE SURFACE TENSION

SURFACE TENSION(DYNE/S/CN)= 44.1900 - .121B*TEMP.(C.)

41.1 DYNES/CM

MELTING POINT (DEG. CENT.) = -1.2 REFERENCE: -18 TO -180 DEG C ETF100-41V4

REFRACTIVE INDEX(ND)= 1.6076 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND)= 1.6201 - .00050*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
.6014 429.11 344.72 43.66

DIFFUSION COEF. = .064 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1034 AT 25.0 DEGREES C. 
PAGE NUMBER 8= 11
SUMMARY OF PROPERTIES OF EA 1034 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: L FORMULA WEIGHT: 207.3 GENERAL REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.40381, B = 1237.03, C = 155.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 150.0 DEG. CENT. REFERENCE: S.O./R/581 HIGH PURITY
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .12*01
ESTIMATED BoILING POINT (CENT.) = 195.9
HEAT OF VAPORIZATION (KILocalories/MOLE) = 14.5
VOLATILITY (MG/METER CUBED) = .12*05 VOLATILITY (MILLIMOLE/METER CUBED) = .60*02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.8542 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.9210 - .00167*TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.02201, B = -223.38, C = 142.4 DETERMINED OVER THE TEMPERATURE
RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTIPOISE) = 1.595

THE EQUATION: SURFACE TENSION (DYNES/CM) = 44.1900 - .1218*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/544
WERE USED TO CALCULATE THE SURFACE TENSION 39.3 DYNES/CM
MELTING POINT (DEG. CENT.) = -1.2 reference: -18 TO 01 DEG C ETF100-41V4
REFRACTIVE INDEX (ND) = 1.6001 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (ND) = 1.6291 - .00050*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE
20.0 TO 40.0 DEG. CENT. REFERENCE: S.O./R/667

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.6014 429.11 344.72 43.68

DIFFUSION COEF. = .071 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23 (1944) VISCOSITY OF VAPOR = 9.02-03 CENTIPOISE

END OF COMPOUND EA 1034 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1036 AT THE MELTING POINT IN LIEU OF -40 DEG C

COMMON NAME: T FORMULA WEIGHT: 263.2 GENERAL REFERENCE: CRLR542

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.53000, B= 4191.00, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT. REFERENCE: CRLR542 HIGH PURITY FP 8.85

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .48-03
ESTIMATED BOILING POINT(CENT.)= 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)= .71-01 VOLATILITY(MILLIMOLE/ METER CUBED)= .27-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.2514 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2599 - .00095 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VISCOSITY(CENIPOISE)= 18.300 AT 20.0 DEGREES CENTIGRADE REFERENCE: SYNTHETIC T,FP 5.8, TDWR 524
THE EQUATION: SURFACE TENSION(DYNE/CM)= 48.2600 -.1106*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 FP 7.6C
WERE USED TO CALCULATE THE SURFACE TENSION 47.3 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.5440 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5478 -.00042*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 25.0 DEG. CENT. REFERENCE: CRLR542 FP 5.4
HEAT OF SUBLIMATION(KCAL/MOLE)= 24.00 AT .0 DEGREE CENT. REFERENCE: CRLR50 CAL.
HEAT OF FUSION(KCAL/MOLE)= 4.64 AT .0 DEGREE CENT. REFERENCE: CRLR542 ALSO GIVES 4.9
BOILING POINT, (DEG. CENTIGRADE)= 357.0 AT 760.0 MM OF HG REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT (DEG. CENT.)= 8.97 REFERENCE: CRLR542 +OR- .01 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3844 515.93 684.82 24.69

DIFFUSION COEF. = .035 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.27-03 CENTIPoise

END OF COMPUND EA 1036 AT 9.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1036 AT THE MELTING POINT IN LIEU OF -20 DEG C
COMMON NAME: T FORMULA WEIGHT: 263.2 GENERAL REFERENCE: CRLR542

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.53000, B = 4191.00, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT. REFERENCE: CRLR542 HIGH PURITY FP 0.05 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .48-05
ESTIMATED BOILING POINT(CENT.)* = 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)* = .71-01 VOLATILITY(MILLIMOLE/ METER CUBED)= .27-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)* = 1.2514 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2599 - .00095 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VIScosity(CENTIPOISE)* = 18.300 AT 20.0 DEGREES CENTIGRADE REFERENCE: SYNTHETIC T,FP 5.8, TDMR 524
THE EQUATION: SURFACE TENSION(DYNES/CM)= 48.2500 - .1106*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 FP 7.6C WERE USED TO CALCULATE THE SURFACE TENSION 47.3 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(NO)= 1.5448 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(NO) = 1.5478 - .00042*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 25.0 DEG. CENT. REFERENCE: CRLR542 FP 5.4

HEAT OF SUBLIMATION(KCAL/MOLE)= 24.00 AT .0 DEGREE CENT. REFERENCE: CRLR542 CAL.
HEAT OF FUSION(KCAL/MOLE)= 4.65 AT .0 DEGREE CENT. REFERENCE: CRLR542 ALSO GIVES 4.9

BOILING POINT, (DEG. CENTIGRADE)* = 357.0 AT 760.0 MM OF HG REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT, (DEG. CENT.)* = 8.97 REFERENCE: CRLR542 OR- 0.1 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DIFFUSION COEF. = .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.27-03 CENTIPOISE

END OF COMPOUND EA 1036 AT 9.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1036 AT .0 DEGREES CENTIGRADE
COMMON NAME: T FORMULA WEIGHT: 263.2 GENERAL REFERENCE: CRLR542

WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****.

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.53000, B= 4191.60, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT. REFERENCE: CRLR542 HIGH PURITY FP 8.85

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .15-05
ESTIMATED BOILING POINT(CE)NT.)= 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)= .24-01 VOLATILITY(MILLIMOLE/METER CUBED)= .91-04

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.2599 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2599 - .00095 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: CRLR542

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VISCOSITY(CENTIPOISE)= 18.300 AT 20.0 DEGREES CENTIGRADE REFERENCE: SYNTHETIC T,FP 5.8, TDMR 524
THE EQUATION: SURFACE TENSION(DYNES/CM)= 48.2600 - .1108*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: CRLR542 FP 7.6C
WERE USED TO CALCULATE THE SURFACE TENSION

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.5478 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5478 - .00042 *TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 25.0 DEG. CENT. REFERENCE: CRLR542 FP 5.4

HEAT OF SUBLIMATION(KCAL/MOLE)= 24.00 AT .0 DEGREE CENT. REFERENCE: CRLR520 CAL.
HEAT OF FUSION(KCAL/MOLE)= 4.68 AT .0 DEGREE CENT. REFERENCE: CRLR542 ALSO GIVES 4.9
BOILING POINT, (DEG. CENTIGRADE)= 357.0 AT 760.0 MM OF HG REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT (DEG. CENT.)= 8.97 REFERENCE: CRLR542 +OR- .01 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3644 515.89 684.82 24.69

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM. 48,23(1944) VISCOSITY OF VAPOR = 5.07-03 CENTIPOISE

END OF COMPOUND EA 1036 AT .0 DEGREES C. PAGE NUMBER B- 15
SUMMARY OF PROPERTIES OF EA 1036 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: T  FORMULA WEIGHT: 263.2  GENERAL REFERENCE: CRLR542

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.563000, B= 4191.00, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT.  REFERENCE: CRLR542 HIGH PURITY FP 8.85
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .17-04
ESTIMATED BOILING POINT(CENT.)= 357.1
HEAT OF Vaporization(KILOCALORIES/MOLE)= 19.1
VOLATILITY(MG/METER CUBED)= .25+00 VOLATILITY(MILLIMOLE/METER CUBED)=.94-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.2409 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2599 - .00095 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT.  REFERENCE: CRLR542

VISCOSITY(CENTIPOISE)= 18.300 AT 20.0 DEGREES CENTIGRADE  REFERENCE: SYNTHETIC T,FP 5.8, TOWR 524
THE EQUATION: SURFACE TENSION(DYNES/CM)= 48.2600 - 0.1108*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: CRLR542 FP 7.6C
WERE USED TO CALCULATE THE SURFACE TENSION 48.0 DYNES/CM
REFRACTIVE INDEX(ND)= 1.5394 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5478 - .00042*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
16.0 TO 25.0 DEG. CENT.  REFERENCE: CRLR542 FP 8.4
HEAT OF SUBLIMATION(KCAL/MOLE)= 4.24.00 AT .0 DEGREE CENT.  REFERENCE: CRLR542 CAL
HEAT OF FUSION(KCAL/MOLE)= 4.68 AT .0 DEGREE CENT.  REFERENCE: CRLR542 ALSO GIVES 4.9
BOILING POINT, (DEG. CENTIGRADE)= 357.0 AT 760.0 MM OF HG  REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT (DEG. CENT.)= 8.97 REFERENCE: CRLR542 +0R-.01 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
5844  515.89  684.82  24.69

DIFFUSION COEF. = .038 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 9.52-03 CENTIPOISE

END OF COMPOUND EA 1036 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1036 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: T  FORMULA WEIGHT: 263.2  GENERAL REFERENCE: CRLR542

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.53000, B= 4191.00, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT.  REFERENCE: CRLR542 HIGH PURITY FP 8.05
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE( TORR)= .30-04
ESTIMATED BOILING POINT (CENT. )= 357.1
HEAT OF VAPORIZATION(KCAL/MOLE) = 19.1
VOLTILITY(MG/METER CUBED)= .42+60  VOLATILITY (MILLIMOLE/METER CUBED)= .15-02

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

DENSITY(G/ML)= 1.2362 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2599 – .00095 *TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT.  REFERENCE: CRLR542

VISCOITY(centipoise)= 18.300 AT 20.0 DEGREES CENTIGRADE  REFERENCE: SYNTHETIC T,FP 5.8, TDNR 524
THE EQUATION: SURFACE TENSION(DYNE/S CM)= 48.2600 – .1106*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: CRLR542 FP 7.8C
WERE USED TO CALCULATE THE SURFACE TENSION 45.5 DYNE/CM
REFRACTIVE INDEX(NO)= 1.5372 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(NO)= 1.5478 – .00042*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 25.0 DEG. CENT.  REFERENCE: CRLR542 FP 8.4
HEAT OF SUBLIMATION(KCAL/MOLE)= 24.00 AT .0 DEGREE CENT.  REFERENCE: CRLR542 CAL.
HEAT OF FUSION(KCAL/MOLE)= 45.48 AT .0 DEGREE CENT.  REFERENCE: CRLR542 ALSO GIVES 4.9
BOILING POINT, (DEG. CENTIGRADE)= 357.0 AT 760.0 MM OF HG  REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT (DEG. CENT.)= 8.97 REFERENCE: CRLR542 +OR= .01 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3644 515.00 684.82 24.90

DIFFUSION COEF. = .040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY. CHEM.48,231(1944)  VISCOSITY OF VAPOR = 8.63-03 CENTIPOISE

END OF COMPOUND EA 1036 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1036 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: T FORMULA WEIGHT: 263.2  GENERAL REFERENCE: CRLR542

THE FOLLOWING ANTOINE Constants(EATR 449): A = 9.53000, B = 4191.00, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 50.0 TO 70.0 DEG. CENT.  REFERENCE: CRLR542 HIGH PURITY FP 8.05
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(°R) = 4.2263
ESTIMATED BOILING POINT(°C) = 357.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 19.1
VOLATILITY(MG/WK PER CUBED) = 0.72-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.219 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2599 - 0.0099 *TEMP.(°C) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT.  REFERENCE: CRLR542

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VISCOITY(CENTIPOISE) = .18300 AT 20.0 DEGREES CENTIGRADE  REFERENCE: SYNTHETIC T,FP 5.6, TDOR 524
TH E EQUATION: SURFACE TENSION(DYNES/CM) = 48.2600 - .1106*TEMP.(°C)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: CRLR542 FP 7.6C
WERE USED TO CALCULATE THE SURFACE TENSION 43.0 DYNES/CM
REFRACTIVE INDEX(IND) = 1.5310 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(IND) = 1.5478 - .00042*TEMP.(°C) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 25.0 DEG. CENT.  REFERENCE: CRLR542 FP 5.4
HEAT OF SUBLIMATION(KCAL/MOLE) = 4.65 AT .0 DEGREE CENT.  REFERENCE: CRLR542 ALSO GIVES 4.9
HEAT OF FUSION(KCAL/ATM) = 357.0 AT 760.0 MM OF HG  REFERENCE: CRLR542 CAL DECOMP
FREEZING POINT (DEG. CENT.) = 8.97  A*REFERENCE: CRLR542 +OR=- .01 PERCENT

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/ATM ATM.
.3944 515.89 615.62 24.89

DIFFUSION COEF. = .044 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHYS.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.96-03 CENTIPOISE

END OF COMPOUND EA 1036 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1053 AT THE MELTING POINT IN LIFTOFF.

COMBINATION: MK 115 FORMULA WEIGHT: 204.5
GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3

****** NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.55297, B= 2856.46, C= 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 100.0 DEG. CENT. REFERENCE: COMB.50/R/643, MW11451,r68091

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .61-03
ESTIMATED BOILING POINT(CENT.)= 257.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.1
VOLATILITY(MG/METER CUBED)= .74+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .38+01

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY(G/MIL)= 1.2632 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2596 - .00998 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: 50/R/643

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -5.32800, B= -1250.00, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: 50/R/643

WERE USED TO CALCULATE THE SURFACE TENSION

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE EQUATION: SURFACE TENSION(DYNES/CM)= .44.0900 - .1290+TEMP.(C.)

WERE USED TO CALCULATE THE SURFACE TENSION

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

REFRACTIVE INDEX(ND)= 1.5057 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5042 - .00040+TEMPERATURE(°C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: 50/R/643

******** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

SOLUBILITY(G/100G SOLVENT)= .800-02 AT 25.0 DEGREE CENTIGRADE, REFERENCE: ETF100-41V4 APP. WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FELIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE
GH/CC DEG C CC/MOLE ATM. .3960 498.94 529.83 31.23

DIFFUSION COEF. = .039 CM.-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.30-03 CENTIPOISE

END OF COMPOUND EA 1053 AT -3.7 DEGREES C. PAGE NUMBER 8-19
SUMMARY OF PROPERTIES OF EA 1053 AT -20.0 DEGREES CENT.\(C\):  

**WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE**  

VALUE ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID ****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): \(A = 8.55207, B = 2666.46, C = 246.4\) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 100.0 DEG. CENT. \REF: COMB. 50/R/643, M11451, NBB821

WERE USED TO CALCULATE THE FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = \(0.07 - 0.4\)  
ESTIMATED BOILING POINT (CENT.) = 287.2  
HEAT OF VAPORIZATION (KCAL/MOLE) = 16.3  
VOLATILITY (MG/METER CUBED) = 0.11 - 0.9  
VOLATILITY (MILLIMOLE/ METER CUBED) = 0.55 - 0.02  

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.2790 WAS CALCULATED FROM THE EQUATION: \(DENSITY = 1.2598 - 0.00098 \times TEMP. (C.)\) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. \REF: 50/R/643  

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): \(A = -5.32800, B = -1250.00, C = 273.2\) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. \REF: 50/R/643  

WERE USED TO CALCULATE THE VISCOSITY (CENTIPOISE) = 0.406  

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY TEMPERATURE VOLUME PRESSURE  
\(\text{GM/CC DEG C CC/MOLE ATM.}\)  
\(0.800 400.94 529.63 31.23\)  

DIFFUSION COEF. = 0.034 \(CM^2/SEC\) CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM., 48, 231 (1944) \(\mu = 0.051^\mu\) OF VAPOR \(\mu = 4.9^\mu\) CENTIPOISE

END OF COMPOUND EA 1053 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1053 AT 0 DEGREES CENTIGRADE

COMMON NAME: HN3
FORMULA WEIGHT: 204.5
GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.55297, B = 2855.46, C = 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT. REFERENCE: COMB.50/R/843,W1451,NB8021

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.92-03
ESTIMATED BOILING POINT(CEL.) = 257.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.0
VOLATILITY(MG/METER CUBED) = 110-02
VOLATILITY(MILLIMOLE / METER CUBED) = 54-01

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.2596 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2596 - 0.00098 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/864

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -5.32800, B = -1250.00, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: SO/R/864

WERE USED TO CALCULATE THE VISCOSITY

VISSOCITY(CENTIPOISE) = 177

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/S/CN) = 44.0900 - 1290*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/864

WERE USED TO CALCULATE THE SURFACE TENSION

44.1 DYNE/S/CN

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -3.7 REFERENCE: ETF100-41V4

REFRACTIVE INDEX(ND) = 1.5042 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX(ND) = 1.5042 - 0.00040*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.6 DEG. CENT. REFERENCE: SO/R/864

SOLUBILITY(G/100G SOLVENT) = 800-02 AT 25.0 DEGREE CENTIGRADE REFERENCE: ETF100-41V4 APP WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV. ZHURN. FIZ KHM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3860 498.94 529.83 31.23

DIFFUSION COEF. = .040 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.38-03 CENTIPOISE

END OF COMPOUND EA 1053 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1053 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: HN3   FORMULA WEIGHT: 204.5   GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-0

THE FOLLOWING ANTOINE CONSTANTS (EAIR 4491): A = 8.55297, B = 2850.46, C = 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT. REFERENCE: COMB.60/R/643,W11451,NB88121

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .68+02
ESTIMATED BOILING POINT (CENT.) = 257.2
HEAT OF VAPORIZATION (KCALORIE/MOLE) = 15.0
VOLATILITY (MO/METER CUBED) = .76+02
VOLATILITY (MILLIMOLE/METER CUBED) = .37+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/MIL) = 1.2401 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2598 - .00098 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/643

VISCOSITY (CENTIPOISE) = .086

THE EQUATION: SURFACE TENSION (DYNES/CM) = 44.0900 - .1290 * TEMP. (C.)

WAS DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: SO/R/643

WERE USED TO CALCULATE THE SURFACE TENSION 41.5 DYNES/CM

MELTING POINT (DEG. CENT.) = -3.7 REFERENCE: ETF100-41V4

REFRACTIVE INDEX (NO) = 1.4962 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (NO) = 1.5042 - .00040 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: SO/R/643

SOLUBILITY (G/100G SOLVENT) = .800-02 AT 25.0 DEGREE CENTIGRADE REFERENCE: ETF100-41V4 APP WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
.3860 498.94 529.83 31.23

DIFFUSION COEF. = .046 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR


VISCOSITY OF VAPOR = 5.85-03 CENTIPOISE

END OF COMPOUND EA 1053 AT 20.0 DEGREES C.  PAGE NUMBER B-22
SUMMARY OF PROPERTIES OF EA 1053 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: HN3  FORMULA WEIGHT: 204.5  GENERAL REFERENCE: ETF100-41V4 N-MUSTARD-3

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.55297, B= 2856.46, C= 246.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 186.0 DEG. CENT.  REFERENCE: COMB.50/R/643,W11451,N88821

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .11-01
ESTIMATED BOILING POINT (CENT.) = 257.2
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 15.8
VOLATILITY (MG/METER CUBED) = .12+03

VISCOSITY (CENTIPOISE) = .073

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -5.32800, B= -1250.00, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: 5Q/R/643

WERE USED TO CALCULATE THE VISCOSITY

THE EQUATION: SURFACE TENSION (DYNES/CM) = 44.0900- .1290*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: 5Q/R/643

WERE USED TO CALCULATE THE SURFACE TENSION 40.9 DYNES/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPONY. ZHURN. FIZ KINN. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3860 498.94 529.83 31.23

DIFFUSION COEF. = .048 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 8.97-03 CENTIPOISE
SUMMARY OF PROPERTIES OF EA 1053 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: HN3  FORMULA WEIGHT: 204.8  GENERAL REFERENCE: ETF100-41V4 H-MUSTARD-3

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.55297, B= 2856.48, C= 246.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 188.0 DEG. CENT.  REFERENCE: COMB.50/R/843,W11451,HB0921
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= 0.38±01  ESTIMATED BOILING POINT(CENT.)= 257.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.6
VOLATILITY(MG/METER CUBED)= .40+03  VISCOSITY(MILLISEC/ METER CUBED)= .20+01
DENSITY(G/ML)= 1.2206 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2596 - .00098 X TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: 50/R/643
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTIPOISE)= .048
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/S CM)= 44.0960 - .1290 X TEMP.(C.)
DENSITY TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT.  REFERENCE: 50/R/643
WERE USED TO CALCULATE THE SURFACE TENSION

MELTING POINT (DEG. CENT.) = 38.9 DYNES/CM
REFRACTIVE INDEX(ND)= 1.4862 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.5042 - .00040 X TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
20.0 TO 35.8 DEG. CENT.  REFERENCE: 50/R/643
SOLUBILITY(G/100G SOLVENT)= .800-02 AT 25.0 DEGREE CENTIGRADE  REFERENCE: ETF100-41V4 APP. WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHERN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C CC/MOLE ATM.
3860  498.94  529.93  31.23

DIFFUSION COEF. = .054 CM.-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 6.33-03 CENTIPOISE

END OF COMPOUND EA 1053 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: GA FORMULA WEIGHT: 162.1 GENERAL REFERENCE: TDMR94

THE FOLLOWING ANTIQUE CONSTANTS(EATR 4491): A = 6.80011, B = 1700.59, C = 186.4 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TDMR1094, A3604/3, ECTHR75032
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .15-04
ESTIMATED BOILING POINT(TEMP.) = 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 19.7
VOLATILITY (MG/METER CUBED) = .17+00 VOLATILITY(MILLIMOLE/METER CUBED) = .10-02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.1389 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 -.00097*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -60.0 TO 71.0 DEG. CENT. REFERENCE: STM 109

THE FOLLOWING ANTIQUE CONSTANTS(EATR 4491): A = -2.68053, B = -905.78, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: STM 109

VISCOSITY(CENTIPOISE) = 18.011
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/Sqm) = 35.0000 -.1000+TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2
WERE USED TO CALCULATE THE SURFACE TENSION 39.0000/DYNE/SQM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(NO) = 1.4469 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(NO) = 1.4316 -.00038+TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE
10.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2

FLASH POINT (C/
HEAT CAPACITY (KCAL/MOLE) = .0700 AT 25.0 DEGREE CENT. REFERENCE: 25 TO 50 DEG C, STM109
FREEZING POINT (DEG. CENT.) = .0800 AT 20.0 DEGREE CENTIGRADE REFERENCE: ET100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) = .720+01 AT 20.0 DEGREE CENTIGRADE
SOLUBILITY(G/100G SOLVENT) = .980+01 AT .0 DEGREE CENTIGRADE
REFERENCE: STUDY 35-48 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURH. FIZ KHM. 37. 201 (1963)

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM,48,23 (1944)

END OF COMPOUND EA 1205 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: GA FORMULA WEIGHT: 162.1 GENERAL REFERENCE: TDGR94

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.80014, B = 1700.59, C = 186.4 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 150.0 DEG. CENT. REFERENCE: TDMR1094, A3804/3, ECTR78092 WERE USED TO CALCULATE THE FOLLOWING PROPERTIES:

VAPOR PRESSURE(1000) = .38-03
ESTIMATED BOILING POINT(CENT.) = 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.0
VOLATILITY(MG/ION CUBED) = .39+01 VOLATILITY(MILLIMOLE/ METER CUBED) = .24-01

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/O AL) = 1.1194 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 + .00097 + TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.68053, B = -905.78, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1094 WERE USED TO CALCULATE THE VISCOSITY

VISOSITY(CENTIOOS) = 7.897

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 35.000 + .000389+TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2 WERE USED TO CALCULATE THE SURFACE TENSION = 37.0 DYNES/CM

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(IND) = 1.4392 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(IND) = 1.4316 - .000385 +TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2

FLASH POINT: CLOSED CUP(CEINTIGRADE) = 78.0 REFERENCE: PPT45
HEAT CAPACITY (KCAL/MOLE) = .0700 AT 25.0 DEGREE CENT. REFERENCE: 25 TO 50 DEG C, STM109
FREEZE POINT (DEG. CENT.) = -50.00 REFERENCE: TDWR 1094
SOLUBILITY(G/100G SOLVENT) = .720+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: ETFI100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) = .950+01 AT 0 DEGREE CENTIGRADE REFERENCE: STUDY 35-48 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLPPOV. ZHURN. FIZ KHIW. 37. 205(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3456 419.02 469.10 31.62

DIFFUSION COEF. = .037 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY. CHEM.48,29(1944) VISCOSITY OF VAPOR = 5.12-03 CENTIOOS

END OF COMPOUND EA 1205 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT .0 DEGREES CENTIGRADE
COMMON NAME: GA
FORMULA WEIGHT: 162.1
GENERAL REFERENCE: TDMR94

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.80011, B= 1700.59, C= 185.4 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TDMR1094,A3804/3,ECCTR75032
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .47-02
ESTIMATED BOILING POINT(CENT.): 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.7
VOLATILITY(MG/METER CUBED)= .45+02 VOLATILITY(MILLIMOLE/ METER CUBED)= .28+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.0999 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0999 - .00097 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109
VISCOSITY(CENTIPOISE)= 4.320
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM)= 35.0000 - .1000*TEM.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2
WERE USED TO CALCULATE THE SURFACE TENSION 35.0 DYNE/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.4316 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.4316 - .00636*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE
10.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2
FLASH POINT, CLOSED CUP(CENTIGRADE)= 78.0 WHERE USED TO CALCULATE THE SURFACE TENSION.
FREEZING POINT (DEG. CENT.)* 7= -50.00 REFERENCE: TDMR 1094
SOLUBILITY(G/100G SOLVENT) .720+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: ETF100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) .980+01 AT 0.0 DEGREE CENTIGRADE REFERENCE: STUDY 35-48 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM
.3456 419.02 469.10 31.62

DIFFUSION COEF. = .044 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.60-03 CENTIPOISE

END OF COMPOUND EA 1205 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: GA
FORMULA WEIGHT: 162.1
GENERAL REFERENCE: TDMR94

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.80011, B = 1700.59, C = 186.4 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT. REFERENCE: TDMR1094.A3804/3,ECTR75032
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .36-.01
ESTIMATED BOILING POINT (CENT.) = 247.5
HEAT OF VAPORIZATION (KiloCalories/Mole) = 15.7
VOLATILITY (mg/meter cubed) = .32+03

THE EQUATION: DENSITY (g/ml) = 1.0004 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 + .00097 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT. REFERENCE: STM 109

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.68053, B = -905.78, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1094 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTIPOISE) = .2556

THE EQUATION: SURFACE TENSION (dyne/cm) = 35.0000 - .1000*TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2
WERE USED TO CALCULATE THE SURFACE TENSION 33.0 DYNE/CM

REFRACTIVE INDEX (NO) = 1.4240 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (NO) = 1.4316 - .0003*TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: STM 109 P.2
FLASH POINT, CLOSED CUP (CENTIGRAD) = 78.0 REFERENCE: PTPA5
HEAT CAPACITY (KCAL/MOLE) = .0700 AT 25.0 DEGREE CENT. REFERENCE: 25 TO 50 DEG C, STM109
FREEZING POINT (DEG. CENT.) = .50.00 REFERENCE: TDMR 1094
SOLUBILITY (G/100G SOLVENT) = .7204 AT 20.0 DEGREE CENTIGRADE REFERENCE: ETF100-41 VOL 1
SOLUBILITY (G/100G SOLVENT) = .980+01 AT 90 DEGREE CENTIGRADE REFERENCE: STUDY 35-40 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DIFFUSION COEF. = .051 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1205 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: GA  FORMULA WEIGHT: 162.1  GENERAL REFERENCE: TDMR94

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.80011, B= 1700.59, C= 186.4 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT.  REFERENCE: TDMR1094,A3804/3,ECTR75032
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(Torr)= 57-01
ESTIMATED BOILING POINT(CENT.)= 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.5
VOLATILITY(MG/METER CUBED)= .49+03  VOLATILITY(MILLIMOLE/ METER CUBED)= .31+01
DENSITY(G/ML)= 1.0756 4AS CALCULATED FROM THE EQUATION: DENSITY= 1.0999 - .00097*TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT.  REFERENCE: STM 109

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.68053, B= -905.78, C= 273.2 DETERMINED OVER THE TEMPERATURE
RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE:STM 1094
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTIPOISE)= 2.277
THE EQUATION: SURFACE TENSION(DYNES/CM)= 35.0000 - .1000*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT.  REFERENCE: STM 109 P.2
WERE USED TO CALCULATE THE SURFACE TENSION
32.5 DYNES/CM
REFRACTIVE INDEX(IND)= 1.4221 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(IND)= 1.4316 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
10.0 TO 40.0 DEG. CENT.  REFERENCE: STM 109 P.2
FLASH POINT, CLOSED CUP(CENTIGRADE)= 78.0 REFERENCE: PTP45
KJ/LIT CAPACITY (KCAL/MOLE)= .0700 AT 25.0 DEGREE CENT.  REFERENCE: 25 TO 50 DEG C, STM109
FREEZING POINT (DEG CENT.)= -50.00 REFERENCE: TDMR 1094
SOLUBILITY(G/100G SOLVENT) .720+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: ETF100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) .980+01 AT .0 DEGREE CENTIGRADE REFERENCE: STUDY 35-48 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3456 419.02 469.10 31.62

DIFFUSION COEF. = .053 CM2.SEC/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQJ., J.PHY. CHEM.48,23(1944)  VISCOSITY OF VAPOR = 5.20-03 CENTIPOISE

END OF COMPOUND EA 1205 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1205 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: GA  FORMULA WEIGHT: 162.1  GENERAL REFERENCE: TD9R94

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.80011, B= 1700.59, C= 180.4 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 152.0 DEG. CENT.  REFERENCE: TD9R1094, A3804/3, ECTR75032
WERE USED TO CALCULATE THE FOLLOWING PROPERTIES:
VAPOR PRESSURE(TORR) = 1900
ESTIMATED BOILING POINT(TEMP. C) = 247.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.9
VOLATILITY(MG/METER CUBED) = .16004  VOLATILITY(MILLIMOLE/METER CUBED) = .9901
DENSITY(ML/ML) = 1.0901 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0999 - .00097 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE -40.0 TO 71.0 DEG. CENT.  REFERENCE: STM 109

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.68053, B= -905.78, C= 273.2 DETERMINED OVER THE TEMPERATURE
RANGE 10.0 TO 35.0 DEG. CENT.  REFERENCE: STM 1094
WERE USED TO CALCULATE THE VISCOSITY
VISCOITY(CEINTISOIIE)= 1.629
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE EQUATION: SURFACE TENSION(DYNE/S CM) = 35.0000 - .1000*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 40.0 DEG. CENT.  REFERENCE: STM 109 P.2
WERE USED TO CALCULATE THE SURFACE TENSION
REFRACTIVE INDEX(ND) = 1.4163 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.4316 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
10.0 TO 40.0 DEG. CENT.  REFERENCE: STM 109 P.2
FLASH POINT, CLOSED CUP(CENTIGRADE) = 70.0  REFERENCE: PPP45
HEAT CAPACITY (KCAL/MOLE) = .0700 AT 25.0 DEGREE CENT.  REFERENCE: 25 TO 50 DEG C, STM109
FREEZING POINT (DEG. CENT.) = -50.00  REFERENCE: TD9R 1094
SOLUBILITY(G/100G SOLVENT) = .720+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: ET100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) = .980+01 AT .0 DEGREE CENTIGRADE REFERENCE: STUDY 35-48 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHM. 37. 201(1983)
DIFFUSION COEF. = .059 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.46,231(1944)  VISCOSITY OF VAPOR = 8.56-03 CEINTISOIIE

END OF COMPOUND EA 1205 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1207 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 126.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOUR PRESSURE(TORR)= .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML)= 1.2324 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 -.00123 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -632.26, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.5
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )= 4.102

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (Dynes/cm)= 27.6 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(NO)= 1.3760 AT 25.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.)= -64.00. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GH/CC DEG C CC/MOLE ATM.
.3844 396.19 320.01 39.81

DIFFUSION COEF. = .040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.67-03 CENTIPoise

END OF COMPOUND EA 1207 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1207 AT -20.0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT: 126.1  
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)=  .294+1  AT  25.0 DEG. CENT.  REFERENCE: TCR36

DENSITY(G/ML)=  1.2078 WAS CALCULATED FROM THE EQUATION: DENSITY=  1.1832 -  .00123 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR 36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTONINE CONSTANTS(EATR 4491): A= -2.09666, B= -632.26, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)=  2.505

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM)=  27.8 AT  25.0 DEG. CENT.  REFERENCE: TCR36

REFRACTIVE INDEX(ND)=  1.3760 AT  25.5 DEG. CENT.  REFERENCE: TCR36

FREEZING POINT (DEG. CENT.)=  -64.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
.3844  336.19  328.01  39.81

DIFFUSION COEF. =  .048 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)

VISCOSITY OF VAPOR = 6.25-03 CENTIPoise

END OF COMPOUND EA 1207 AT -20.0 DEGREES C.
Appendix B

SUMMARY OF PROPERTIES OF EA 1207 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 126.1

GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)= .29+01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML)= 1.1832 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1832 - .00123 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.09866, B= -832.28, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.5

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 1.644

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.6 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND)= 1.3760 AT 25.5 DEG. CENT. REFERENCE: TCR36 FREEZING POINT (DEG. CENT.)= -64.09 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3644 336.19 328.01 39.81

DIFFUSION COEF. = .057 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J-PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 6.82-03 CENTIPOISE

END OF COMPOUND EA. 1207 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1207 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 126.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.29 ± 0.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.1586 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1632 - .00123 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.09866, B = -632.26, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.5
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.143

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.6 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3760 AT 25.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -64.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37, 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3844 336.19 326.01 39.61

DIFFUSION COEF. = .006 CM²/SEC CALCULATED FOR VAPOUR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM. 48, 23(1944) VISCOSITY OF VAPOUR = 7.36·03 CENTIPOISE

END OF COMPOUND EA 1207 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1207 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: U.N. 0.1616

A BOLLING POINT, THE VALUE CALCULATED ABOVE THE DIAL RANGES MAY BE ABOVE BOLLING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (Torr): 293 + 01 AT 25.0 DEG. CENT.

DENSITY (G/ML): 1.1525 AT 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

TEMPERATURE RANGE: 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 5

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

SURFACE TENSION (DYNES/CM): 27.8 AT 25.0 DEG. CENT. REFERENCE: TCR36

REFRACTIVE INDEX (NO): 1.3760 AT 25.0 DEG. CENT. REFERENCE: TCR36

FREEZING POINT (DEG. CENT.): 1.052

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DIFFUSION COEF. (CM2/SEC) CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J. PHYS. CHEM. 48, 23(1944)

END OF COMPOUND EA 1207 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1207 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 126.1 GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .29+61 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.1340 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1832 - .00123 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.09866, B = -632.26, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE: 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 5
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = .832

SURFACE TENSION (Dynes/cm) = 27.6 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(NO) = 1.3700 AT 25.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -64.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3844 336.19 326.01 39.81

DIFFUSION COEF. = .076 CM^2/SO.C. CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

VISCOITY OF VAPOR = 7.95-03 CENTIPOISE

END OF COMPOUND EA 1207 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1208 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: GB FORMULA WEIGHT: 140.1 GENERAL REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.48160, B= 1773.82, C= 227.9 DETERMINED OVER THE
TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = 11.01
ESTIMATED BOILING POINT (CENT.) = 157.7
HEAT OF VAPORIZATION (KCAL/MOLE) = 12.5
VOLATILITY (MG/METER CUBED) = 11.03 VOLATILITY (MILLIMOLE/METER CUBED) = .75+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.1654 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1182 - .00118 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -71231, B= -96.35, C= 89.2 DETERMINED OVER THE
TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 PURE, TECH 10% HIGHER
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST/STOKES) = 27.103

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 28.7540 - .1129*TEMP. (C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: PTP278 HIGH PURITY
WERE USED TO CALCULATE THE SURFACE TENSION 33.3 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX (IND) = 1.4987 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (IND) = 1.3917 - .00043*TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278

HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -249.00 AT 25.0 DEGREE CENT. REFERENCE: J. RES NBS SEC A 1975 79A(5)635
FREEZING POINT (DEG. CENT.) = -56.90 REFERENCE: TCIR 513

SOLUBILITY (G/100G SOLVENT) = .100+03 AT .0 DEGREE CENTIGRADE REFERENCE: CRDL-TL-63-5-555 MISCEBLE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3645 329.12 384.41 33.57

DIFFUSION COEF. = .036 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J. PHY.CHEM. 48.231(1944) VISCOSITY OF VAPOR = 5.42-03 CENTIPOISE

DIPOLAR MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX (UNITLESS) = 24.7 AT AMBIENT TEMPERATURE REFERENCE: NBS553 P 4

END OF COMPOUND EA 1208 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1208 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: GB FORMULA WEIGHT: 140.1 GENERAL REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.48180, B= 1773.82, C= 227.9 DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278
WE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .99-01
ESTIMATED BOILING POINT(TEMP.)* 157.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.0
VOLATILITY(MG/METER CUBED)= .79-03 VOLATILITY(MILLIMOLE/METER CUBED)= .56-01
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

* DENSITY(G/ML)= 1.1418 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1182 - .00118 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.71231, B= -86.35, C= 80.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 PURE, TECH 10% HIGHER
WE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 5.259
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 26.7640 - .1129 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: PTP278 HIGH PURITY
WE USED TO CALCULATE THE SURFACE TENSION 31.0 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(DNAD)= 1.4003 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(DNAD)= 1.3917 -.00043 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278
HEAT OF FORMATION OF LIQUID (KCAL/MOLE)=-249.00 AT 25.0 DEGREE CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)835
FREEZING POINT (DEG. CENT.)= -56.90 REFERENCE: TCIR 513
SOLUBILITY(G/100G SOLVENT) = .100-03 AT 0 DEGREE CENTIGRADE REFERENCE: CRDL-TL-63-S-555 MISCEBLE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3645 329.12 384.41 33.57

DIFFUSION COEF. = .043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.40.23(1944) VISCOSITY OF VAPOR = 5.97-03 CENTIPoise
DIPOL MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCRL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS)= 24.7 AT AMBIENT TEMPERATURE REFERENCE: MB9253 P 4

END OF COMPOUND EA 1208 AT -20.0 DEGREES C.
Summary of Properties of EA 1208 at 0.0 Degrees Centigrade
Common Name: GB
Formula Weight: 149.1
General Reference: PTP270

The following Antoine Constants (EATR 4491): A = 7.48180, B = 1773.02, C = 227.9 Determined Over the Temperature Range 5.0 to 80.0 Deg. Cent. Reference: PTP270

Vapor Pressure (mm) = 50.00
Estimated Boiling Point (Cent.) = 157.7
Heat of Vaporization (KiloCalories/Mole) = 11.7
Vapility (mM/meter Cubed) = 0.41 + 04
Vapility (MILLIMOLE/meter Cubed) = 0.29 + 02

***** WARNING: The above values are extrapolated out of the data temperature range *****

Density (G/Ml) = 1.1182 was calculated from the equation: Density = 1.1182 + 0.00118 * Temp.(C.) Determined Over the Temperature Range 10.0 to 40.0 Deg. Cent. Reference: PTP270

***** WARNING: The above values are extrapolated out of the data temperature range *****

The following Antoine Constants (EATR 4491): A = -7.1231, B = -86.35, C = 80.2 Determined Over the Temperature Range 20.0 to 40.0 Deg. Cent. Reference: PTP270 Pure, Tech 10% Higher

Were used to calculate the Viscosity
Viscosity (Centistokes) = 2.310

***** WARNING: The above values are extrapolated out of the data temperature range *****

The equation: Surface Tension (Dynes/cm) = 28.75640 - .1129 * Temp.(C.)
Determined Over the Temperature Range 20.0 to 35.0 Deg. Cent. Reference: PTP270 High Purity

***** WARNING: The above values are extrapolated out of the data temperature range *****

Refractive Index (ND) = 1.3917 was calculated from the equation:
Refractive Index (ND) = 1.3917 - .00043 * Temperature (C.)
Determined Over the Temperature Range 15.0 to 30.0 Deg. Cent. Reference: PTP270

Heat of Formation of Liquid (KCal/mole) = -249.00 at 25.0 Degree Cent. Reference: J. Res NBS Sec A 1975 79A(5)635

Freezing Point (Deg. Cent.) = -56.90 Reference: TCIR 513

Solubility (G/100G Solvent) = .100 + 03 at .0 Degree Centigrade Reference: CRDL-TL-63-555 Miscible

The following critical properties were estimated using the method of Filippov.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Density Temperature</td>
<td>340.65</td>
</tr>
<tr>
<td>Volume</td>
<td>329.12</td>
</tr>
<tr>
<td>Pressure</td>
<td>384.41</td>
</tr>
<tr>
<td>Diffusion Coef.</td>
<td>0.51</td>
</tr>
</tbody>
</table>

Calculated for Vapor in Air

The viscosity of the vapor was estimated using the above critical properties and the Modified Sutherland Eq. J. Phy. Chem. 48, 23 (1944)

Viscosity of Vapor = 6.51 - 03 Centipoise

Dipole Moment (Debye) = 3.4 at Ambient Temperature Reference: ACRL-TR in progress

Oxygen Index (Unitless) = 24.7 at Ambient Temperature Reference: NB9253 P 4

End of Compound EA 1208 at 0.0 Degrees C.
SUMMARY OF PROPERTIES OF EA 1208 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: GB
FORMULA WEIGHT: 140.1
GENERAL REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.48160, B = 1773.82, C = 227.9 DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TOKR)= 0.21+01
ESTIMATED BOILING POINT(CENT.) = 157.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.3
VOLATILITY(MG/METER CUBED)= 1.125+03
DENSITY(G/ML)= 1.0946 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1162 - 0.00118 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -7.1231, B = -86.35, C = 60.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 PURE. TECH 10% HIGHER
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 1.409

THE EQUATION: SURFACE TENSION(DYNE/SQM)= 28.7840 - 1.129*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCES: PTP278 HIGH PURITY
WERE USED TO CALCULATE THE SURFACE TENSION 26.5 DYNES/CM
REFRACTIVE INDEX(ND)= 1.3831 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.3917 - 0.00043*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278
HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = 249.00 AT 25.0 DEGREE CENT. REFERENCE: J. RES NBS SEC A 1975 79A(5)835
FREEZING POINT (DEG. CENT.)= 56.90 REFERENCE: TCIR 513
SOLUBILITY(G/100G SOLVENT) .100+03 AT 0 DEGREE CENTIGRADE REFERENCES: CRDL-TL-63-3-555 MISCELLANEOUS

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3645 329.12 384.41 33.57

DIFFUSION COEF. = .059 CM.50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.05-03 CENTIPOISE
DIPOLAR MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS)= 24.7 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P 4

END OF COMPOUND EA 1208 AT 20.0 DEGREES C.

PAGE NUMBER B- 40
SUMMARY OF PROPERTIES OF EA 1208 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: GB FORMULA WEIGHT: 140.1 GENERAL REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.40160, B= 1773.82, C= 227.9 DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .2901
ESTIMATED BOILING POINT (CENT. ) = 157.7
HEAT OF VAPORIZATION (KCAL/MOLE) = 11.3
VOLATILITY (MG/METER CUBED) = .2205 VOLATILITY (MILLINOLE/METER CUBED) = .1803

DENSITY (G/ML) = 1.0887 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1182 - .00118 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.71231, B= -98.35, C= 80.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 PURE, TECH 10% HIGHER

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.283

THE EQUATION: SURFACE TENSION (DYNESE/CM) = 28.7640 - .1129*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: PTP278 HIGH PURITY

WERE USED TO CALCULATE THE SURFACE TENSION 25.9 DYNESE/CM

REFRACTIVE INDEX (ND) = 1.3809 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (ND) = 1.3917 - .00043*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 30.0 DEG. CENT. REFERENCE: PTP278

HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -249.00 AT 25.0 DEGREE CENT. REFERENCE: J.RES NBS SEC A 1975 79A(5)635

FREEZING POINT (DEG. CENT.) = -56.90 REFERENCE: TCIR 513

SOLUBILITY (G/100G SOLVENT) = .100+03 AT .0 DEGREE CENTIGRADE REFERENCE: CRDL-TL-63-9-555 MISCEBLE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE ATM.
.3645 329.12 384.41 33.57

DIFFUSION COEF. = .061 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.46,23(1944)

VISCOITY OF VAPOR = 7.19-03 CENITPOISE

DIPOLE MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX (UNITLESS) = 24.7 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P 4

END OF COMPOUND EA 1208 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1208 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: G8 FORMULA WEIGHT: 140.1 GENERAL REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.48160, B = 1773.82, C = 227.9 DETERMINED OVER THE TEMPERATURE RANGE 5.0 TO 80.0 DEG. CENT. REFERENCE: PTP278
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .72+01
ESTIMATED BOILING POINT(CEnt.) = 157.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.1
VOLATILITY(MG/METER CUBED) = .52+05 VOLATILITY(MILLIMOLE/ METER CUBED) = .37+03
DENSITY(G/ML) = 1.0710 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1182 - .00118*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 40.0 DEG. CENT. REFERENCE: PTP278

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.71231, B = -.86.35, C = 60.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 40.0 DEG. CENT. REFERENCE: PTP278 PUREST TECH 10% HIGHER
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 1.013

THE EQUATION: SURFACE TENSION(DYNE/MC) = 28.7640 - .1129*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 35.0 DEG. CENT. REFERENCE: PTP278 HIGH PURITY
WERE USED TO CALCULATE THE SURFACE TENSION 24.2 DYNE/MC

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND) = 1.3745 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.3917 - .00043*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 30.0 DEG. CENT. REFERENCE: PTP278

HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -249.00 AT 25.0 DEGREE CENT. REFERENCE: J.RES NBS SEC A 1975 79A(8)635
FREEZING POINT (DEG. CENT.) = -56.90 REFERENCE: TCI 513
SOLUBILITY(G/100G SOLVENT) = .100+03 AT .0 DEGREE CENTIGRADE REFERENCE: CRDL-TL-83-9-555 MISCEIBLE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/MOLE ATM.
.3645 329.12 384.41 33.57

DIFFUSION COEF. = .068 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 7.59-03 CENTIPOISE

DIPOL EMOMENT(DEBYE) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS) = 24.7 AT AMBIENT TEMPERATURE REFERENCE: NBS253 P 4

END OF COMPOUND EA 1208 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1209 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: GE FORMULA WEIgHT: 154.1 GENERAL REFERENCE: TDMR 1182

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.70810, B = 2536.90, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1182
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .68-02
ESTIMATED BOILING POINT(cent.)= 162.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.6
VOLATILITY(MG/METER CUBED)= .72+02 VOLATILITY(MILLIMOLE/ METER CUBED)= .46+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/MIL)= 1.1255 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0830 - .00106 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VISCOSITY(CENTISTOKE)= 1.400 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1182
VISCOSITY(CENTIPOISE)= 1.480 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1181
SURFACE TENSION (DYNES/CM) = 24.9 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
REFRACTIVE INDEX(ND)= 1.3817 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
FREEZING POINT (DEG. CENT.)= -70.00 REFERENCE: TDMR 1182 DID NOT FREEZE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3475 364.24 443.50 30.80

DIFFUSION COEF. = .032 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1209 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1209 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: GE FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TDMR1182

THE FOLLOWING ANTONINE CONSTANTS (EATR 4491): A = 8.70810, B = 2536.90, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1182
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = .49±.01
ESTIMATED BOILING POINT (CENT.) = 162.1
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 11.6
VOLATILITY (MG/METER CUBED) = 48±03 VOLATILITY (MILLIMOLE/METER CUBED) = .31±.01

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY (G/ML) = 1.043 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0830 - .00106 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY (G/ML) = 1.043 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0830 - .00106 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ. KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G = .3475 CC/CC DEG C. CC/SEC/ATM
H = 364.24 443.50 30.80

DIFFUSION COEF. = .039 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 231 (1944)

VISCOITY OF VAPOR = 5.48-03 CENTIPOISE

END OF COMPOUND EA 1209 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1209 AT .0 DEGREES CENTIGRADE
COMMON NAME: GE FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TDMR 1182

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.70810, B = 2536.90, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1182
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 26.00
ESTIMATED BOILING POINT(CE) = 162.1
HEAT OF VAPORIZATION(KCALORIES/MOLE) = 11.8
VOLATILITY(MGC/METER CUBED) = 24.04 VOLATILITY(MILLIMOLE/ METER CUBED) = .16+.02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0300 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0300 - .00100*TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

VISCOSITY(CESTISTOKES) = 1.400 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1182
VISCOSITY(CESTIPoise)= 1.480 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1191
SURFACE TENSION(DYNE/CM) = 24.9 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
REFRACTIVE INDEX(N0) = 1.3817 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
FREEZING POINT (DEG. CENT.) = -70.00 REFERENCE: TDMR 1182 DID NOT FREEZE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM, 37, 201(1961)
DENSITY TEMPERATURE VOLUME PRESSURE
G/A CC DEG. C CC/MOLE ATM.
.3475 364.24 443.50 30.80

DIFFUSION COEF. = .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,231(1944) VISCOSITY OF VAPOR = 5.99-03 CESTIPoise

END OF COMPOUND EA 1209 AT .0 DEGREES C.

PAGE NUMBER B- 45
SUMMARY OF PROPERTIES OF EA 1209 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: GE FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TDMR 1182

THE FOLLOWING ANTOINE CONSTANTS(ENTR 4491): A = 8.70810, B = 2536.90, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1182

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(T09)= .11+01
ESTIMATED BUILING POINT(cent.)* = 162.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.6
VOLATILITY(MG/METER CUBED)= .96+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .62+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.0417 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0830 - .00106 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1182

VISCOSITY(CENTISTOKES)= 1.400 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1182
VISCOSITY(CENSTOPOISE)= 1.480 AT 25.0 DEGREES CENTIGRADE REFERENCE: TDMR 1181
SURFACE TENSION (DYNES/CM) = 24.9 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
REFRACTIVE INDEX(ND)= 1.3817 AT 25.0 DEG. CENT. REFERENCE: TDMR 1182
FREEZING POINT (DEG. CENT.)* = -70.00 REFERENCE: TDMR 1182 DID NOT FREEZE

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG.C CC/MOLE ATM.
.3475 364.24 443.50 30.80

DIFFUSION COEF. = .054 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48, 23(1944).

END OF COMPOUND EA 1209 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1209 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: GE  FORMULA WEIGHT: 154.1  GENERAL REFERENCE: TDMR1182
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.70810, B= 2536.90, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1182
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= 1.16401
ESTIMATED BOILING POINT(cent.)= 162.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.6
VOLATILITY(MG/METER CUBED)= .13+05  VOLATILITY(MILLIMOLE/ METER CUBED)= .85+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
DENSITY (G/ML)= 1.0564 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0830 -.00108 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT.  REFERENCE: TDMR 1182

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<tr>
<th>VISCOSITY(CENTISTOKE)</th>
<th>1.400 AT 25.0 DEGREES CENTIGRADE</th>
<th>REFERENCE: TDMR 1182</th>
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<td>VISCOSITY(CENTIPoise)</td>
<td>1.400 AT 25.0 DEGREES CENTIGRADE</td>
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<td>SURFACE TENSION (DYNES/CM)</td>
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<td>REFRACTIVE INDEX(ND)</td>
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<td>FREEZING POINT (DEG. CENT.)</td>
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THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201(1963)

END OF COMPOUND EA 1209 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1209 AT 40.0 DEGREES CENTIGRADE  
COMMON NAME: GE FORMULA WEIGHT: 154.1  GENERAL REFERENCE: TDMR1182  
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.70810, B= 2536.90, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1182  
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:  
VAPOR PRESSURE(TORR)= .41±01  
ESTIMATED BOILING POINT(CENT.)= 162.1  
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.6  
VOLATILITY(MG/METER CUBED)= .32±05 VOLATILITY(MILLIMOLE/ METER CUBED)= .21±03 DENSITY(G/ML)= 1.0405 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0830 -.00106×TEMP.(°C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT.  REFERENCE: TDMR 1182  
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****  

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  
ZHURN. FIZ KHIM. 37. 201(1963)  
DENSITY TEMPERATURE VOLUME PRESSURE  
G/MC DEG C CC/MOLE ATM.  
.3475 364.24 443.50 30.80  

DIFFUSION COEF. = .062 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR  

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)  
VISCOSITY OF VAPOR = 6.99-03 CENTIPoise  

END OF COMPOUND EA 1209 AT 40.0 DEGREES C.
UNCLASSIFIED

SUMMARY OF PROPERTIES OF EA-1210 AT 40.0 DEGREES CENTIGRADE

**GENERAL REFERENCES:** TMN-1292

**SUMMARY OF PROPERTIES OF EA-1210 AT 40.0 DEGREES CENTIGRADE**

**FORMULA WEIGHT:** 192.2

**COMMON NAME:**

**THE FOLLOWING ANTOINE CONSTANTS (EATR 4491):**
- **A:** 7.479900
- **B:** 1.997100
- **C:** 216.9

**DETERMINATION OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.**

**REFRACTIVE INDEX (D25°):** 1.51120

**FLASH POINT:** (CENTIGRADE) 25.0

**FREEZING POINT:** (DEG. CENT.) -42.0

**DENSITY (G/ML):** 0.8569

**VOLUME (CC/MOLE):** 10.40

**SOLUBILITY (G/1000 SOLVENT):** 0.8569

**DETERMINATION OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.**

**FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.**

**Table:**

<table>
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<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>DENSITY</td>
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<tr>
<td>VOLUME</td>
<td>10.40</td>
</tr>
<tr>
<td>SOLUBILITY</td>
<td>0.8569</td>
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**NOTES:**

- **WARNING:** THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

**END OF COMPOUND EA-1210 AT 40.0 DEGREES C.**
SUMMARY OF PROPERTIES OF EA 1210 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: GO FORMULA WEIGHT: 182.2 GENERAL REFERENCE: TDME1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.47060, B = 1903.10, C = 216.9 DETERMINED OVER THE
TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT. REFERENCE: EC-TR-76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = 0.64-02
ESTIMATED BOILING POINT (DEG. CENT.) = 197.8
HEAT OF VAPORIZATION (KCALORIE/MOLE) = 14.4
VOLATILITY (MG/METER CUBED) = .73+02
VOLATILITY (MILLIMOLE/METER CUBED) = 0.40+00
DENSITY (G/ML) = 1.0642 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0458 - .00093 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDME1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.36164, B = -704.49, C = 222.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDME1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 13.390

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DEG. CENT. REFERENCE: TDME1292
REFRACTIVE INDEX (ND) = 1.4050 AT 25.0 DEG. CENT. REFERENCE: TDME1292
FLASH POINT, OPEN CUP (DEG. CENT) = 121.0 REFERENCE: NS-6985, 96% PURE
FREEZING POINT (DEG. CENT.) = -42.00 REFERENCE: NS8285 97.6% PURE
SOLUBILITY (G/100G SOLVENT) = 0.210+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: EATR4210 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG. C CC/MOLE ATM.
.0288 416.28 554.06 26.87

DIFFUSION COEF. = .033 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.87-03 CENTIPOISE
DIPOL MOMENT (DEBYES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

END OF COMPOUND EA 1210 AT -20.0 DEGREES C. PAGE NUMBER 8- 90
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Density (g/ml)</td>
<td>1.0458</td>
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<td>Viscosity (centistokes)</td>
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<td>Surface Tension (dynes/cm)</td>
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<td>Refractive Index (nD)</td>
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<td>Flash Point, Open Cup (centigrade)</td>
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<tr>
<td>Freezing Point (deg. cent.)</td>
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<tr>
<td>Solubility (g/100g solvent)</td>
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<td>Diffusion Coef.</td>
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The following critical properties were estimated using the method of Filippov. The viscosity of the vapor was estimated using the above critical properties and the modified Sutherland's Eq., J.Phys.Chem.48,23,(1944).
SUMMARY OF PROPERTIES OF EA 1210 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: GD FORMULA WEIGHT: 182.2

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.47060, B = 1903.10, C = 216.9 DETERMINED OVER THE TEMPERATURE RANGE -23.0 TO 100.0 DEG. CENT. REFERENCE: EC-TR-76080
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (Torr) = 0.27×10
ESTIMATED BOILING POINT (CENT.) = 197.0
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.3
VOLATILITY (MG/METER CUBED) = 1.0270 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 + 0.00093 × TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.35154, B = 704.49, C = 222.0 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 3.549

SURFACE TENSION (DYNES/CM) = 24.5 AT 20.0 DEG. CENT. REFERENCE: TDNR 1292
REFRACTIVE INDEX (NO) = 1.4050 AT 25.0 DEG. CENT. REFERENCE: TDNR 1292
FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0 REFERENCE: NB-6695, 98% PURE
FREEZING POINT (DEG. CENT.) = -42.00 REFERENCE: NB7385 97.8% PURE
SOLUBILITY (G/100G SOLVENT) = 0.100 AT 20.0 DEGREE CENTIGRADE REFERENCE: EATR 4210 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEC C CC/MOLE ATM.
.3280 418.28 554.06 26.67

DIFFUSION COEF. = .045 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM., 48, 23 (1944) VISCOSITY OF VAPOR = 5.76×03 CENTIPOISE
DIPOLAR MOMENT (DEBYES) = 3.8 AT AMBIENT TEMPERATURE REFERENCE: NIR-CALC ARCSL 14 IN PROGRESS

END OF COMPOUND EA 1210 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1210 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: GD
FORMULA WEIGHT: 182.2

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.47060, B = 1903.10, C = 216.9 DETERMINED OVER THE TEMPERATURE RANGE 23.0 TO 190.0 DEG. CENT. REFERENCES: EC-TR-76058

WE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 0.00
ESTIMATED BOILING POINT (CENT.) = 197.8
HEAT OF VAPORIZATION (K ILOCALORIES/MALE) = 13.2
VOLATILITY (MG/METER CUBED) = 0.3604

DENSITY (G/ML) = 1.0223 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0456 - 0.00093 °C TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCES: TDMR 1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.36154, B = -704.49, C = 222.0 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCES: TDMR 1292

WE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.098

SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DEG. CENT. REFERENCES: TDMR 1292

REFRACTIVE INDEX (NO) = 1.4350 AT 25.0 DEG. CENT. REFERENCES: TDMR 1292

FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0 REFERENCES: NB-6695, 99% PURE

FREEZING POINT (DEG. CENT.) = -62.00 REFERENCES: NB-7265, 97.6% PURE

SOLUBILITY (G/100G SOLVENT) = 0.210 AT 20.0 DEGREE CENTIGRADE REFERENCES: EATR 4214 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHERN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GK/CC DEG C CC/ MOLE ATM.

0.328 416.22 554.06 26.67

DIFFUSION COEFF. = 0.047 CM/ SQ. SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN., J. PHYS. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.90-03 CENTIPOISE DIPOL MOMENT (DEBYES) = 3.8 AT AMBIENT TEMPERATURE REFERENCES: NMR-CALC ARCSL-TR IN PROGRESS

END OF COMPOUND EA 1210 AT 25.0 DEGREES C.

PAGE NUMBER B-53
SUMMARY OF PROPERTIES OF EA 1210 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: GD  FORMULA WEIGHT: 182.2  GENERAL REFERENCE: TDMR1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.47060, B = 1903.10, C = 216.9 DETERMINED OVER THE
TEMPERATURE RANGE -23.0 TO 190.0 DEG. CENT.  REFERENCE: EC-TR-76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 12.0+1
ESTIMATED BOILING POINT(CENT.) = 197.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.9
VOLATILITY(MILLIMOLE/ METER CUBED) = 0.11+05
DENSIY(G/ML) = 1.0084 WAS CALCULATED FROM THE EQUATION; DENSITY= 1.0456 - .00093 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.26154, B = -704.49, C = 222.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CEINTISTOKES) = 2.127

SURFACE TENSION (DYNES/CM) = 24.5 AT 26.5 DEG. CENT.  REFERENCE: TDMR1292
REFRACTIVE INDEX(ND) = 1.4050 AT .250 DEG. CENT.  REFERENCE: TDMR1292
FLASH POINT, OPEN CUP (CENTIGRADE) = 121.0  REFERENCE: NB-6695, 96% PURE
FREEZING POINT (DEG. CENT.) = -42.00  REFERENCE: NB7265 97.6% PURE
SOLUBILITY(G/100G SOLVENT) = .210+01 AT 20.0 DEGREE CENTIGRADE  REFERENCE: EATR4210 WATER

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
.3288  416.26  554.06  26.67

DIFFUSION COEF. = .052 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.  J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 6.24-03 CENTIPOSE
DIPOLMOMENT(DEBYES) = 3.8 AT AMBIENT TEMPERATURE  REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

END OF COMPOUND EA 1210 AT 40.0 DEGREES C.  PAGE NUMBER B= 54
SUMMARY OF PROPERTIES OF EA 1211 AT -40.0 DEGREES CENTIGRADE
COMMON NAME:  GH  FORMULA WEIGHT:  162.2  GENERAL REFERENCE: TDMR1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A =  9.78980,  B = 3069.00,  C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 49.0 DEG. CENT.  REFERENCE: TDMR 1292

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .43-03
ESTIMATED BOILING POINT(CENT.)= 171.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.0
VOLATILITY(MG/METER CUBED)= .53+01  VOLATILITY(MILLIMOLE/ METER CUBED)= .29-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.0758 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.03866 + .00098 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A = -1.00851,  B = -175.38,  C = 108.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT.  REFERENCE: TDMR 1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )=  37.042

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) =  25.7 AT 25.5 DEG. CENT.  REFERENCE: TDMR 1292
REFRACTIVE INDEX(ND)=  1.4030 AT 24.0 DEG. CENT.  REFERENCE: TDMR 1292
FREEZING POINT (DEG. CENT.)= -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
.3300  383.45  652.09  25.49

DIFFUSION COEF. = .027 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 4.58-03 CENTIPOISE

END OF COMPOUND EA 1211 AT -40.0 DEGREES C.  PAGE NUMBER B- 55
SUMMARY OF PROPERTIES OF EA 1211 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: GH FORMULA WEIGHT: 182.2 GENERAL REFERENCE: TDNR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.78980, B= 3069.00, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 49.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .47-02
ESTIMATED BOILING POINT(CEIN.) = 171.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.0
VOLATILITY(MG/METER CUBED) = .54+02 VISCOSITY(MILLIMOLE/ METER CUBED) = .30+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0562 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0366 -.00098*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175.38, C= 108.0 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 9.623

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 25.7 AT 25.5 DEG. CENT. REFERENCE: TDNR 1292
REFRACTIVE INDEX(NO) = 1.4030 AT 24.0 DEG. CENT. REFERENCE: TDNR 1292
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1583)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3300 383.45 552.09 25.40

DIFFUSION COEF. = .033 CM.SO./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.05-03 CENTIPoise

END OF COMPOUND EA 1211 AT -20.0 DEGREES C.
UNCLASSIFIED

Appendix B

85
THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.78980; B = 3069.00; C = 273.2. DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 0.21 + 00
ESTIMATED BOILING POINT (CENT.) = 171.0
HEAT OF VAPORIZATION (KCAL/MOLE) = 14.0
VOLATILITY (MG/METER CUBED) = 0.21 + 04
VOLATILITY (MILLIMOLE/METER CUBED) = 0.11 + 02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0170 WAS CALCULATED FROM THE EQUATION:
DENSITY = 1.0386 - .00098 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 1.00851; B = -175.38; C = 108.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST) = 2.297

SURFACE TENSION (DYNES/CM) = 25.7 AT 25.5 DEG. CENT. REFERENCE: TDMR 1292
REFRACTIVE INDEX (ND) = 1.4030 AT 24.0 DEG. CENT. REFERENCE: TDMR 1292
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. J. PH. CHEM. 37. 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
3900 383.45 552.09 25.49

DIFFUSION COEFF. = .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J. PH. CHEM. 48. 23 (1944) VISCOSITY OF VAPOR = 5.98 - 03 CENTIPoise

END OF COMPOUND EA 1211 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1211 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: GM FORMULA WEIGHT: 182.2  GENERAL REFERENCE: TDNR1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.78000, B = 3069.00, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .31+00
ESTIMATED BOILING POINT( CENT.) = 171.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.0
VOLATILITY(MG/METER CUBED) = .31+04 VOLATILITY(MILLIMOLE/METER CUBED) = .17+02
DENSITY(G/ML) = 1.0212 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0366 - .00098 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.00851, B = -175.38, C = 108.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 2.040

SURFACE TENSION (DYNES/CM) = 25.7 AT 25.5 DEG. CENT. REFERENCE: TDNR1292
REFRACTIVE INDEX(NO) = 1.4030 AT 24.0 DEG. CENT. REFERENCE: TDNR1292
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIIM. 37, 201(1963)

DENSITY TEMPERATURE 'VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM 
.3300 383.45 552.09 25.49

DIFFUSION COEF. = .047 CM-50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 8.10-03 CENTIPOISE

END OF COMPOUND EA 1211 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1211 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: GH FORMULA WEIGHT: 182.2 GENERAL REFERENCE: TDNR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.78990, B= 3069.00, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 49.9 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .96+00
ESTIMATED BOILING POINT(CENT. )= 171.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.0
VOLATILITY(MG/METER CUBED )= .01+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .50+02
DENSITY(G/ML)= .9974 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0386 = .00088 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00851, B= -175.38, C= 108.0 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 35.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES )= 1.500

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CW) = 25.7 AT 25.9 DEG. CENT. REFERENCE: TDNR 1292
REFRACTIVE INDEX(NO)= 1.4030 AT 24.0 DEG. CENT. REFERENCE: TDNR 1292
FREEZING POINT (DEG. CENT.)= -78.00 REFERENCE: TCR36 DID NOT FREEZE -78C 72HR

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM. =
.3300 383.45 552.09 25.49

DIFFUSION COEF. = .053 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 0.45-03 CENTIPOISE
SUMMARY OF PROPERTIES OF EA 1212 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: GU FORMULA WEIGHT: 180.2 GENERAL REFERENCE: EATR4210

***** WARNING: THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.56240, B = 1507.30, C = 170.4 DETERMINED OVER THE
TEMPERATURE RANGE 14.0 TO 160.0 DEG. CENT. REFERENCE: COMB EQU.PTP 341 + NBB343P36
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.10-04
ESTIMATED BOILING POINT(CESENT.) = 239.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 22.0
VOLATILITY(MG/METER CUBED) = 12.00 VOLATILITY(MILLIMOLE/ TETER CUBED) = 0.69-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.1918 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1524 - 0.00399 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDML 1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -79115, B = -184.65, C = 86.7 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDML 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISIOKES) = 541.044

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 32.3 AT 25.5 DEG. CENT. REFERENCE: TDML 1292
MELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1 METASTABLE
REFRACTIVE INDEX(ND)= 1.4550 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND)= 1.4430 - 0.00399*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT. REFERENCE: CRLA164
FLASH POINT (CENTIGRADE) = 94.0 REFERENCE: Calculated
FREEZING POINT (DEG. CENT.) = -30.00 REFERENCE: E100-41 VOL 1 < -30 DEG C
MELTING POINT DEPRESSION(DEG. C./MOLE)= -12.00 REFERENCE: E100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) 0.510 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER E100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) 0.370 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER E100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
0.3597 43R.22 500.07 30.44

DIFFUSION COEF. = 0.029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.59-03 CENTIPoise

END OF COMPUND EA 1212 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1212 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: G/P FORMULA WEIGHT: 180.2 GENERAL REFERENCE: EATR4210
**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.56240, B= 1507.30, C= 170.4 DETERMINED OVER THE
TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERENCE: COMB EQU.PTP 341 + NB8343P36
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .35-03
ESTIMATED BOILING POINT(ºCENT.) = 239.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 19.5
VOLATILITY(MG/METER CUBED) = .39-01 VOLATILITY(MILLIMOLE/ METER CUBED) = .22-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(ºML) = 1.1721 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1524 - .00099 * TEMP.(ºC.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -79115, B= -164.65, C= 86.7 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 47.502

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = .32-3 AT .25.5 DEG. CENT. REFERENCE: TDMR1292
MELTING POINT (ºDEG. CENT.) = -12.0 REFERENCE: ETH 100-41 VOL 1, METASTABLE
REFRACTIVE INDEX(º) = 1.4514 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(N) = 1.4439 - .00038*TEMPERATURE(ºC.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 50.0 DEG. CENT. REFERENCE: CHLR164
FLASH POINT (ºCENTIGRADE) = 94.0 REFERENCE: Calculated
FREEZING POINT (ºDEG. CENT.) = -30.00 REFERENCE: ETH 100-41 VOL 1 <30 DEG C
MELTING POINT DEPRESSION(ºDEG. C. /MOLE) = -12.000 REFERENCE: ETH 100-41 VOL 1
SOLUBILTY(G/100G SOLVENT) = .519+01 AT .0 DEGREE CENTIGRADE REFERENCE: WATER ETH 100-41 VOL 1
SOLUBILTY(G/100G SOLVENT) = .370+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER ETH 100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM
.3979 438.22 500.87 30.44

DIFFUSION COEF. = .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.07-03 CENTIPOISE

END OF COMPOUND EA 1212 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1212 AT .0 DEGREES CENTIGRADE

COMMON NAME: GF FORMULA WEIGHT: 180.2

GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 6.56240, B= 1507.30, C= 170.4 DETERMINED OVER THE TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERENCE: COMB EQU. PTP 341 + NBS343P36

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 52-02
ESTIMATED BOILING POINT (CENT.) = 239.0
HEAT OF VAPORIZATION (KILocalORIES/MOLE) = 17.7
VOLATILITY (MG/METER CUBED) = .55+02 VOLATILITY (MILLIMOLE/METER CUBED) = .31+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.1524 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1524 - .00099 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT . REFERENCE: TDMR 1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -.79115, B = -164.65, C = 86.7 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 12.810

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CN) = 32.3 AT 25.5 DEG. CENT. REFERENCE: TDMR 1292
MELTING POINT (DEG. CENT.) = -12.0 REFERENCE: E100-41 VOL 1, METASTABLE
REFRACTIVE INDEX (N) = 1.4438 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (N) = 1.4438 - .00038 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 30.0 DEG. CENT. REFERENCE: CRLR164
FLASH POINT (CENTIGRADE) = 94.0 REFERENCE: Calculated
FREEZING POINT (DEG. CENT.) = -30.00 REFERENCE: ETF 100-41 VOL 1 < 30 DEG C
MELTING POINT DEPRESSION (DEG. C./MOLE) = -12.000 REFERENCE: ETF 100-41 VOL 1
SOLUBILITY (G/100G SOLVENT) = .510+01 AT .0 DEGREE CENTIGRADE REFERENCE: WATER ETF 100-41 VOL 1
SOLUBILITY (G/100G SOLVENT) = .370+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER ETF 100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MOLE ATM.
.3597 438.22 500.87 30.44

DIFFUSION COEF. = .042 CM^2/SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. , J.PHY.CHEM.48.231(1944) VISCOSITY OF VAPOR = 5.55-03 CENTIPOISE

END OF COMPOUND EA 1212 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1212 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: GII FORMULA WEIGHT: 160.3
GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.56240, B = 1507.30, C = 170.4
DETERMINED OVER THE TEMPERATURE RANGE 14.0 TO 166.0 DEG. CENT.
REFERENCE: COMB EQU. PTP 341 + NBS44

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .44-01
ESTIMATED BOILING POINT (CENT.) = 239.0
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = 16.3
VOLATILITY (MG/METER CUBED) = .44+03

VOLATILITY (MILLIMOLE/METER CUBED) = .34-01

DENSITY (G/ML) = 1.1327 WAS CALCULATED FROM THE EQUATION:
DENSITY = 1.1524 - .00090^TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.
REFERENCE: TOWR 1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -.79115, B = -154.66, C = .66.7
DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.
REFERENCE: TOWR 1292

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 5.645

SURFACE TENSION (DYNES/C M) = 32.3 AT 25.5 DEG. CENT.
REFERENCES: TOWR1293

MELTING POINT (DEG. CENT.) = -12.0 REFERENCES: E100-41 VOL 1
METASTABLE

REFRACTIVE INDEX (ND) = 1.4363 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX (ND) = 1.4438 - .00038^TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT. REFERENCE: CRLR184

FLASH POINT, (CENTIGRADE) = 94.0 REFERENCES: Calculated

FREEZING POINT (DEG. CENT.) = -30.00 REFERENCES: EFF 100-41 VOL 1
ELLING POINT DEPRESSION (DEG. C./MOLE) = -12.000 REFERENCES: EFF 100-41 VOL 1

SOLUBILITY (G/1000 SOLVENT) = .510+01 AT .0 DEGREE CENTIGRADE
REFERENCES: WATER EFF 100-41 VOL 1
SOLUBILITY (G/1000 SOLVENT) = .370+01 AT 20.0 DEGREE CENTIGRADE
REFERENCES: WATER EFF 100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GAMMA/CC DEG C CC/MOLE ATM.
.3597 438.22 500.87 30.44

DIFFUSION COEF. = .049 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR ...S ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHY. CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.03-03 CENTIPOISE

END OF COMPOUND EA 1212 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1212 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: GF  FORMULA WEIGHT: 180.2  GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.56240, B= 1507.30, C= 170.4  DETERMINED OVER THE
TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT.  REFERENCE: COMB EQU. PTP 341 + NB8343P38
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .70-01
ESTIMATED BOILING POINT(OF CENT.): 238.0
HEAT OF VAPORIZATION(KILOCALORIE/MOLE)= 16.0
VOLATILITY(MG/METER CUBED)= .68+03  VOLATILITY(MILLIMOLE/ METER CUBED)= .38+01
DENSITY(G/ML) = 1.1276  WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1524 - .00059 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TOMR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79115, B= -164.65, C= 86.7  DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TOMR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 4.816

SURFACE TENSION (DYNE/C.M) = 39.3 AT 25.5 DEG. CENT.  REFERENCE: TDWR1292
MELTING POINT (DEG. CENT.) = -12.0  REFERENCE: E100-41 VOL 1 <METASTABLE
REFRACTIVE INDEX(WD)= 1.4343  WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(WD)= 1.4438 - .00038 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE
15.0 TO 30.0 DEG. CENT.  REFERENCE: CHLR164
FLASH POINT,
(CENTIGRADE)= 94.0  REFERENCE: Calculated
FREEZING POINT (DEG. CENT.)= -12.00  REFERENCE: E100-41 VOL 1 < -30 DEG C
MELTING POINT DEPRESSION(G. C./MOLE)= -12.00  REFERENCE: E100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) .510+01 AT 0 DEGREE CENTIGRADE  REFERENCE: WATER E100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) .370+01 AT 20.0 DEGREE CENTIGRADE  REFERENCE: WATER E100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHUJN. FIZ KHIM. 37. 201(1963)

DENSITY DEP. TEMPERATURE VOLUME PRESSURE
G/M. CC. DEG C. CC/ mole ATM.
.3597 438.22 500.87 30.44

DIFFUSION COEF. = .051 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM, 46,23(1944) VISCOSITY OF VAPOR = 0.15-03 CENTIPOISE
END OF COMPOUND EA 1212 AT 25.0 DEGREES C.

PAGE NUMBER B-65
SUMMARY OF PROPERTIES OF EA 1212 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: GC FORMULA WEIGHT: 180.2 GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.56240, B= 1507.30, C= 170.4 DETERMINED OVER THE TEMPERATURE RANGE 14.0 TO 168.0 DEG. CENT. REFERENCE: COMB EQU.PTP 341 + NBS343P36

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .25+00
ESTIMATED BOILING POINT(TEMP.): 229.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.3
VOLATILITY(1G/METER CUBED) = .23+04 VOLATILITY(MILLIMOLE/METER CUBED) = .13+02

DENSITY(G/ML) = 1.1130 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1524 - (.0099 * TEMP.(C)) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWTR 1292

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79115, B= -168.65, C= 86.7 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWTR 1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3.222

SURFACE TENSION (Dynes/CM) = 32.3 AT 25.5 DEG. CENT. REFERENCE: TDWTR 1292
MELTING POINT (DEG. CENT.) = -30.0 REFERECE: EFT 103-41 VOL 1 35 DEG C
REFRACTIVE INDEX(ND): 1.4287 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = .4438 - .00038*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 30.0 DEG. CENT. REFERENCE: CWLR104

FLASH POINT, (CENTIGRADE) = 94.0 REFERENCE: Calculated
FREEZING POINT (DEG. CENT.) = -30.0 REFERECE: EFT 103-41 VOL 1 35 DEG C
MELTING POINT DEPRESSION(TEMP C./MOLE) = -12.000 REFERENCE: EFT 100-41 VOL 1 METASTABLE
SOLUBILITY(G/100G SOLVENT) = .510+01 AT .0 DEGREE CENTIGRADE REFERENCE: WATER EFT 100-41 VOL 1
SOLUBILITY(G/100G SOLVENT) = .370+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER EFT 100-41 VOL 1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSIITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/JOLE ATM.
.3597 438.22 500.87 30.44

DIFFUSION COEF. = .056 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.48,23(1944)

VISCOSEITY OF VAPOR = 6.50-03 CENTIPOISE

END OF COMPOUND EA 1212 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1213 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 168.1 GENERAL REFERENCE: TDMR1292

***** WARNING: THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

VAPOR PRESSURE (TORR) = 0.22 AT 84.0 DEG. CENT. REFERENCE: TDMR1292
VAPOR PRESSURE (TORR) = 0.04 AT 25.0 DEG. CENT. REFERENCE: TDMR1292

DENSITY (G/ML) = 1.0919 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 + 0.0097 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.92419, B = -495.20, C = 189.2 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 24.864

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.8 AT 25.0 DEG. CENT. REFERENCE: TDMR1292
REFRACTIVE INDEX (NO) = 1.3980 AT 25.0 DEG. CENT. REFERENCE: TDMR1292
FREEZING POINT (DEG. CENT.) = -18.80 REFERENCE: TDMR1292

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV, ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MOLE ATM
3335 397.22 504.25 28.49

DIFFUSION COEFF. = 0.29 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQUATION: J. PH. CHEM. 48. 23 (1944)

VISCOITY OF VAPOR = 4.61-03 CENTIPoise

END OF COMPOUND EA 1213 AT -40.0 DEGREES C.
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SUMMARY OF PROPERTIES OF EA 1213 AT .0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 168.1 GENERAL REFERENCE: TDNR 292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.22+0.02 AT 84.0 DEG. CENT. REFERENCE: TDNR 292
VAPOR PRESSURE (TORR) = 0.55+0.00 AT 25.0 DEG. CENT. REFERENCE: TDNR 292
DENSITY (G/ML) = 1.0531 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 - .00097 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.92419, B = -495.20, C = 189.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 4.939

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.8 AT 26.0 DEG. CENT. REFERENCE: TDNR 292
REFRACTIVE INDEX (NO) = 1.3900 AT 25.0 DEG. CENT. REFERENCE: TDNR 292
FREEZING POINT (DEG. CENT.) = -16.80 REFERENCE: TDNR 1292

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GAS/CC DEG C CC/MOLE ATM.
.3335 397.22 504.25 26.49

DIFFUSION COEF. = .042 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.55-03 CENTIPOISE

END OF COMPOUND EA 1213 AT .0 DEGREES C. PAGE NUMBER B- 69
SUMMARY OF PROPERTIES OF EA 1213 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 168.1 GENERAL REFERENCE: TDWR1292

****** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .22±02 AT 84.0 DEG. CENT. REFERENCE: TDWR1292
VAPOR PRESSURE (TORR) = .55±00 AT 25.0 DEG. CENT. REFERENCE: TDWR1292
DENSITY (G/ML) = 1.0337 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 - .00097 TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWR1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.92419, B = -495.20, C = 189.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWR1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 2.775

SURFACE TENSION (DYNES/CM) = 24.8 AT 26.0 DEG. CENT. REFERENCE: TDWR1292
REFRACTIVE INDEX (N) = 1.3980 AT 25.0 DEG. CENT. REFERENCE: TDWR1292
FREEZING POINT (DEG. CENT.) = -18.00 REFERENCE: TDWR1292

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

CRITICAL TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM
.3335 397.22 504.25 28.49

DIFFUSION COEF. = .049 CM.2/SEC CALCULATED FOR VAPOIR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOIR = 6.02-03 CENTIPOISE

END OF COMPOUND EA 1213 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1213 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: 
FORMULA WEIGHT: 168.1  GENERAL REFERENCE: TDMR1292

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .22+.02 AT 84.0 DEG. CENT.  REFERENCE: TDMR1292
VAPOR PRESSURE (TORR) = .55+.00 AT 25.0 DEG. CENT.  REFERENCE: TDMR1292
DENSITY (G/ML) = 1.0289 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 - .00097 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR1292

A = -1.92419, B = -495.20, C = 189.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR 1292
WAS USED TO CALCULATE THE VISCOSITY

SURFACE TENSION (DYNES/CM) = 24.8 AT 26.0 DEG. CENT.  REFERENCE: TDMR1292
REFRACTIVE INDEX(NO) = 1.3980 AT 25.0 DEG. CENT.  REFERENCE: TDMR1292
FREEZING POINT (DEG. CENT.) = -18.80 REFERENCE: TDMR1292

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
.3335 397.22 504.25 29.49

DIFFUSION COEF. = .051 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1213 AT 25.0 DEGREES C.  PAGE NUMBER B- 71
SUMMARY OF PROPERTIES OF EA 1213 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 169.1

GENERAL REFERENCE: TDGR1292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .22±02 AT 84.0 DEG. CENT. REFERENCE: TDGR1292
VAPOR PRESSURE (TORR) = .55±00 AT 25.0 DEG. CENT. REFERENCE: TDGR1292
DENSITY (G/ML) = 1.0143 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0531 -.00097*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDGR1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.92419, B = -495.20, C = 189.2 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDGR1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.725

SURFACE TENSION (DYNES/CM) = 24.8 AT 26.0 DEG. CENT. REFERENCE: TDGR1292
REFRACTIVE INDEX (N D) = 1.3980 AT 25.0 DEG. CENT. REFERENCE: TDGR1292
FREEZING POINT (DEG. CENT.) = -18.80 REFERENCE: TDGR1292

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/MOLE ATM.
.3335 397.22 504.25 28.49

DIFFUSION COEF. = .056 CM SQ/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 23 (1944)

END OF COMPOUND EA 1213 AT 40.0 DEGREES C. PAGE NUMBER B- 72
SUMMARY OF PROPERTIES OF EA 1214 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMALDEHYDE FORMULA WEIGHT: 210.1 GENERAL REFERENCE: TDMR1292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (Torr)= .30+01 AT 105.0 DEG. CENT. REFERENCE: TDMR1292 TEMP. +/- 1 DEG.
VAPOR PRESSURE (Torr)= .60+01 AT 25.0 DEG. CENT. REFERENCE: TDMR1292 APROX (0.04 TO 0.08)
DENSITY (g/mL)= 1.0566 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0210 -.00089 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.96037, B= -502.19, C= 178.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMR 1292
WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENSTISTOKES )= 45.948

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.3 AT 25.0 DEG. CENT. REFERENCE: TDMR1292
REFRACTIVE INDEX (IND)= 1.4100 AT 23.5 DEG. CENT. REFERENCE: TDMR1292
FREEZING POINT (DEG. CENT.)= -78.00 REFERENCE: TDMR-1292 DID NOT FREEZE TO-78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 2HURN. FIZ KHIM. 37. 201(1963)
DENSIY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3198 427.58 657.03 22.88

DIFFUSION COEF. = .024 CM.50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM,48.23(1944) VISCOSITY OF VAPOR = 4.18-03 CENTIPOISE

END OF COMPOUND EA 1214 AT -40.0 DEGREES C. PAGE NUMBER B- 73
SUMMARY OF PROPERTIES OF EA 1214 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 210.1 GENERAL REFERENCE: TDMA1292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .30+01 AT 105.0 DEG. CENT. REFERENCE: TDMA1292 TEMP. +/-1 DEG.
VAPOR PRESSURE (TORR) = .60+01 AT 25.0 DEG. CENT. REFERENCE: TDMA1292 APROX (0.04 TO 0.08)
DENSITY (G/ML) = 1.0368 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0210 - .000089 *TEMP (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMA1292

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -1.96037, B= -502.19, C= 178.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDMA1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 16.051

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.3 AT 25.0 DEG. CENT. REFERENCE: TDMA1292
REFRACTIVE INDEX (ND)= 1.4190 AT 23.5 DEG. CENT. REFERENCE: TDMA1292
FREEZING POINT (DEG. CENT.)= -78.00 REFERENCE: TDMA1292 DID NOT FREEZE TO 78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE

.3198 427.58 657.03 22.86

DIFFUSION COEF. = .029 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.62-03 CENTIPOISE

END OF COMPOUND EA 1214 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1214 AT 0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT: 210.1  GENERAL REFERENCE: TDMR1292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .30±01 AT 105.0 DEG. CENT.  REFERENCE: TDMR1292 TEMPERATURE, +1 DEG.

VAPOR PRESSURE (TORR) = .60±01 AT 25.0 DEG. CENT.  REFERENCE: TDMR1292 APPROX (0.04 TO 0.09)

DENSITY (G/ML) = 1.0210 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0210 -.00089 * TEMP. (C) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR1292

***** WARNING: THE ABOVE VALUES ARE EXTRapolATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.95037, B = -502.19, C = 178.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TDMR1292

WERE USED TO CALCULATE THE VISCOSITY

VISCOsity (CENTISTOKES) = 7.096

***** WARNING: THE ABOVE VALUES ARE EXTRapolATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.3 AT 25.0 DEG. CENT.  REFERENCE: TDMR1292

REFRACTIVE INDEX (ND) = 1.4190 AT 23.5 DEG. CENT.  REFERENCE: TDMR1292

FREEZING POINT (DEG. CENT.) = -78.00  REFERENCE: TDMR-1292 DID NOT FREEZE TO-78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC  DEG C  CC/WOle  ATM.  

.3198  427.58  657.03  22.86

DIFFUSION COEF. = .034 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48,23 (1944)  VISCOSITY OF VAPOR = 5.05-03 CENTIPoise

END OF COMPOUND EA 1214 AT 0 DEGREES C.
**WARNING:** SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL.

**VAPOR PRESSURE (TORR) =** 0.30401 AT 105.0 DEG. CENT.
**REFERENCE:** TDWR1292 TEMP. +1 DEG.
**VAPOR PRESSURE (TORR) =** 0.60-01 AT 25.0 DEG. CENT.
**REFERENCE:** TDWR1292 APROX (0.04 TO 0.08)
**DENSITY (G/ML) =** 1.0032 WAS CALCULATED FROM THE EQUATION:
**DENSITY =** 1.0210 - 0.00089 *TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.
**REFERENCE:** TDWR1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.96037, B = -502.19, C = 178.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.
**REFERENCE:** TDWR1292

WERE USED TO CALCULATE THE VISCOSITY:
**VISCOSITY (CENTISTOKES) =** 3.698

**SURFACE TENSION (DYNE/CM) =** 27.3 AT 25.0 DEG. CENT.
**REFERENCE:** TDWR1292
**REFRACTIVE INDEX (NO) =** 1.4190 AT 23.5 DEG. CENT.
**REFERENCE:** TDWR1292
**FREEZING POINT (DEG. CENT.) =** -78.00
**REFERENCE:** TDWR1292 DID NOT FREEZE TO 78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

**DENSITY TEMPERATURE VOLUME PRESSURE**
G/CC DEG C CC/MOLE ATM.
.3198 427.58 657.03 22.86

DIFFUSION COEF. = .048 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48, 23 (1944)

**VISCOSITY OF VAPOR =** 5.48-03 CENTIPOISE

END OF COMPOUND EA 1214 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1214 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: UNCLASSIFIED
FORMULA WEIGHT: 210.1
GENERAL REFERENCE: TDWR1292

--- WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL ---

VAPOR PRESSURE (TORR) = 0.30 + 0.1 AT 105.0 DEG. CENT. REFERENCE: TDWR1292 TEMP. = 11 DEG.
VAPOR PRESSURE (TORR) = 0.30 + 0.1 AT 25.0 DEG. CENT. REFERENCE: TDWR1292 APPROX. (0.04 TO 0.08)
DENSITY (G/ML) = 0.988 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0210 - 0.00989 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWR1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.96037, B = -502.19, C = 178.6 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TDWR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.205

SURFACE TENSION (DYNES/CM) = 27.3 AT 25.0 DEG. CENT. REFERENCE: TDWR1292
REFRACTIVE INDEX (NO) = 1.4190 AT 23.5 DEG. CENT. REFERENCE: TDWR1292
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TDWR-1292 DID NOT FREEZE TO -78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
0.3198 427.59 657.03 22.86

DIFFUSION COEF. = 0.042 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 231 (1944)

VISCOITY OF VAPOR = 5.59 - 03 CENTIPoise

END OF COMPOUND EA 1214 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1214 AT 40.0 DEGREES CENTIGRADE

COMMON NAME:                FORMULA WEIGHT: 210.1                GENERAL REFERENCE: TDNR1292

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .30-01 AT 105.0 DEG. CENT.                REFERENCE: TDNR1292 TEMP. ±1 DEG.
VAPOR PRESSURE (TORR) = .60-01 AT 25.0 DEG. CENT.                REFERENCE: TDNR1292 APPROX (0.04 TO 0.08)

DENSITY (G/ML) = .2054 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0210 - .00099 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.                REFERENCE: TDNR1292

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.96037, B = -502.19, C = 178.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.                REFERENCE: TDNR 1292
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 2.171

SURFACE TENSION (DYNES/CM) = 27.3 AT 25.0 DEG. CENT.                REFERENCE: TDNR1292
REFRACTIVE INDEX (NO) = 1.4190 AT 23.5 DEG. CENT.                REFERENCE: TDNR1292
FREEZING POINT (DEG. CENT.) = -78.00                REFERENCE: TDNR-1292 DID NOT FREEZE TO -78

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.                ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
.3198 427.50 657.03 22.08

DIFFUSION COEF. = .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.46.23 (1944) VISCOSITY OF VAPOR = 5.92-03 CENTIPoise

END OF COMPOUND EA 1214 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT -40.0 DEGREES CENTIGRADE
COMMEN NAME: FORMULA WEIGHT: 218.2 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = 10±00 AT 25.0 DEG. CENT.REFERENCE: TCR36
DENSITY(G/ML) = 1.2966 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 - .00097 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.25660, B = -259.14, C = 80.3 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.REFERENCE: TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 151360.965

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 40.0 AT 24.5 DEG. CENT.REFERENCE: TCR36
REFRACTIVE INDEX(ND) = 1.4940 AT 24.5 DEG. CENT.REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3853 501.36 566.26 29.31

DIFFUSION COEF. = .027 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU. J.PHY.CHEM.,48,23(1944) VISCOSITY OF VAPOR = 4.38-03 CENTIPOISE

END OF COMPOUND EA 1230 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 218.2 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 1.0E+00 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.2772 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 - 0.00097 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.25660, B = -259.14, C = 80.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36 P. 8
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 1105.903

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 40.0 AT 24.5 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4940 AT 24.5 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG. C CC/MOLE ATM
.3853 501.36 566.28 29.31

DIFFUSION COEF. = .032 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN., J. PHY. CHEM. 48, 23 (1944)  VISCOSITY OF VAPOR = 4.84E-03 CENTIPOISE

END OF COMPOUND EA 1230 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT .0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 218.2 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(Torr) = .10±00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.2578 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 -.00097 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.25660, B = -259.14, C = 80.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY
VISCOITY(CENTISTOKES) = 93.787

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 40.0 AT 24.5 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND) = 1.4940 AT 24.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1983)

DIFFUSION COEF. = .038 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.31-03 CENTIPOISE

END OF COMPOUND EA 1230 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:  
FORMULA WEIGHT:  218.2  
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (Torr) = 0.1000  AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSIITY (g/ml) = 1.2084 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 - .00097 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EA94 4941): A = -1.25660, B = -259.14, C = 80.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36 P. 6

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 21.285

SURFACE TENSION (Dynes/cm) = 40.0 AT 24.5 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4940 AT 24.5 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00  REFERENCE: TCR36 DID NOT FREEZE TO -70 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY  TEMPERATURE  VOLUME  PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
.3853  501.36  566.28  29.31

DIFFUSION COEF. = .044 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM. 48,23 (1944)  VISCOSITY OF VAPOR = 5.77-03 CENTIPOISE

END OF COMPOUND EA 1230 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 216.2 GENERAL REFERENCE: TCR36

*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)= 10+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML)= 1.2330 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.2578 -.00097 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EAIR 4481): A= -1.25660, B= -259.14, C= 80.3 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 P. 6
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 16.043

SURFACE TENSION (DYNES/CM) = 40.0 AT 24.5 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND)= 1.4944 AT 24.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.)= -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3053 501.36 566.26 29.31

DIFFUSION COEF. = .046 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.RHY.CHEM.46,23(1944) VISCOSITY OF VAPOR = 5.89-03 CENTIPOSE

END OF COMPOUND EA 1230 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1230 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 218.2

GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.10-00 AT 23.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.2190 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2578 - 0.00097 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.25660, B = -259.14, C = 80.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 ?.

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 7.901

SURFACE TENSION (DYNES/CM) = 40.0 AT 24.5 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4940 AT 24.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZURM. FIZ KHM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/HOLE ATM.
.3853 501.36 568.28 29.31

DIFFUSION COEF. = .051 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48, 23 (1944)

VISCOSITY OF VAPOR = 6.24-03 CENTIPoise

END OF COMPOUND EA 1230 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1232 AT \(-40.0\) DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 112.1 GENERAL REFERENCE: TCR36

****** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .38401 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.3231 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - .00129 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): \(A = -2.18494, B = -854.91, C = 273.2\) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.7

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 4.207

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 30.9 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3720 AT 24.5 DEG. CENT. REFERENCE: TCR36

FREEZING POINT (DEG. CENT.) = \(-67.00\) REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
.4100 347.89 272.74 48.80

DIFFUSION COEF. = .645 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 8.97-03 CENTIPoise

END OF COMPOUND EA 1232 AT \(-40.0\) DEGREES C.

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**SUMMARY OF PROPERTIES OF EA 1232 AT -20.0 DEGREES CENTIGRADE**

**COMMON NAME:**

**FORMULA WEIGHT:** 112.1

**GENERAL REFERENCE:** TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

**VAPOR PRESSURE (TORR):** .38 +.01 AT 25.0 DEG. CENT.  REFERENCE: TCR36

**DENSITY (G/ML):** 1.2973 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - .00129 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

**THE FOLLOWING ANTOINE CONSTANTS (EATR 4491):** A = -2.18464, B = -554.91, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT.  REFERENCE: TCR36

**WERE USED TO CALCULATE THE VISCOSITY**

**VISCOSITY (CENTISTOKES):** 2.524

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

**SURFACE TENSION (DYNES/CM):** 30.9 AT 25.0 DEG. CENT.  REFERENCE: TCR36

**REFRACTIVE INDEX (NO):** 1.3720 AT 24.5 DEG. CENT.  REFERENCE: TCR36

**FREEZING POINT (DEG. CENT.):** -67.00  REFERENCE: TCR36

**THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.**

ZHURN. FIZ. KHIM. 37, 201 (1963)

**DENSITY TEMPERATURE VOLUME PRESSURE**

**GM/CC DEG C CC/MOLE ATM.**

.4108 347.88 272.74 46.80

**DIFFUSION COEF. =** .054 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

**THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 8.58 - 03 CENTIPoise**

END OF COMPOUND EA 1232 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1232 AT 0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 112.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.38+01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.2715 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - .00129 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.10484, B = -654.91, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT.  REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOITY
VISCOITY (CENTISTOKES) = 1.632

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 30.9 AT 25.0 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (N-D) = 1.3720 AT 24.5 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -67.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/A/CC DEG C CC/MOLE ATM.
.4100 347.00 272.74 48.80

DIFFUSION COEF. = .965 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQUATION. J.PHY.CHEM., 48, 23(1944)

VISCOITY OF VAPOR = 7.10-03 CENTIPoise

END OF COMPOUND EA 1232 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1232 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: UNCLASSIFIED FORMULA WEIGHT: 112.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .38±01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.3457 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - .00129 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.18484, B = -544.91, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CEINTISTOKES) = 1.120

SURFACE TENSION (DYNES/CM) = 30.9 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND) = 1.3720 AT 24.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -67.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.4108 347.98 272.74 48.00

DIFFUSION COEF. = .075 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 7.78-03 CENTIPOISE

END OF COMPOUND EA 1232 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1232 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 112.1 GENERAL REFERENCE: TCR36

—— WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE( TORR) = 0.3801 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY( G/ML) = 1.2392 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 – 0.00129 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATN 4491): A = -2.18464, B = -654.91, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY( CENTISTOKES) = 1.027

SURFACE TENSION ( DYNES/CM) = 30.9 AT 25.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND) = 1.3720 AT 24.5 DEG. CENT. REFERENCE: TCR36
FREEZING POINT ( DEG. CENT.) = 67.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/A CC DEG C CC/MOLE ATM.
1108 347.99 272.74 40.80

DIFFUSION COEF. = .078 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 7.93-03 CENTIPOISE

END OF COMPOUND EA 1232 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1232 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 112.1 GENERAL REFERENCE: TCR36

* * * WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.3801 AT 25.0 DEG. CENT. REFERENCES: TCR36
DENSITY (G/ML) = 1.2199 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2715 - .00129 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCES: TCR36

THE FOLLOWING ANTONIE CONSTANTS(EATR 4491): A = -2.10484, B = -654.91, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 9.5 TO 50.0 DEG. CENT. REFERENCES: TCR36 P.7

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 0.806

SURFACE TENSION (DYNES/CM) = 30.9 AT 25.0 DEG. CENT. REFERENCES: TCR36
REFRACTIVE INDEX (NO) = 1.3720 AT 24.5 DEG. CENT. REFERENCES: TCR36
FREEZING POINT (DEG. CENT.) = -67.00 REFERENCES: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GAMMA/C C DEG C CC/MOLE ATM.
.1108 347.88 272.74 48.80

DIFFUSION COEF. = .087 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

END OF COMPOUND EA 1232 AT 40.0 DEGREES C.

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SUMMARY OF PROPERTIES OF EA 1244 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:   FORMULA WEIGHT: 196.8   GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .20-01 AT 30.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.2954 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2946 - .00097 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EAYR 4491): A = -1.94420, B = -506.85, C = 154.7 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 30.0 DEG. CENT.  REFERENCE: TCR36 P.8
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 298.184

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 37.8 AT 23.2 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4920 AT 25.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/C  DEG C  CC/WOLE  ATM.
.3824 495.65 514.03 32.05

DIFFUSION CDEF. = .029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.,48, 23 (1944)  VISCOSITY OF VAPOR = 4.46-03 CENTIPOISE

END OF COMPOUND EA 1244 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA-1244 AT -20.0 DEGREES CENTIGRADE

GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGE MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.00 - 10 AT 30.0 DEG. CENT. REFERENCE: TCR36

DENSITY (G/ML) = 1.2660 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2460 + 0.00097 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.94420, B = -506.65, C = 154.7 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 8

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 65.833

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 37.8 AT 23.2 DEG. CENT. REFERENCE: TCR36

REFRACTIVE INDEX (NO) = 1.4520 AT 25.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPY: ZHURN. FIZ. KIIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

G/M CC DEG C CC/WOL ATN.

0.3824 495.65 514.02 32.05

DIFFUSION COEF. = 0.034 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48, 23(1944)

VISCOSITY OF VAPOUR = 4.99 - 0.3 CENTIPoise

END OF COMPOUND EA-1244 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1244 AT 0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 106.6

GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.20 - 0.1 AT 30.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.2466 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2466 - 0.00097 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A* = -1.94420, B* = 506.85, C* = 154.7 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 21.479

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 37.8 AT 23.2 DEG. CENT. REFERENCE: TCR36

REFRACTIVE INDEX (ND) = 1.4520 AT 25.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GAS/CC DEG C CC/MOLE ATM.

3824 495.65 514.63 32.05

DIFFUSION COEF. = 0.041 CM-MO/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 408, 231 (1944)

VISCOITY OF VAPOR = 5.40 - 03 CENTIPoise

END OF COMPOUND EA 1244 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1244 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:                        FORMULA WEIGHT: 196.6
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOUR PRESSURE(TORR) = .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.2272 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2466 -.00097 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 1.94420, B= -508.85, C= 154.7 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.8
WE WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 9.057

SURFACE TENSION (DYNES/CM) = 37.8 AT 23.2 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(NO) = 1.4520 AT 25.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV, ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3824 495.65 514.03 32.05

DIFFUSION COEF. = .048 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

VISVCOSITY OF VAPOR = 5.87-03 CENTIPOISE

END OF COMPOUND EA 1244 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1244 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:   FORMULA WEIGHT: 196.6  GENERAL REFERENCE: TCR36

****** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

****** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.20-01 AT 30.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.2224 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2466 - .00097 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.94420, B = -506.85, C = 154.7 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36 P.8
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES ) = 7.520

SURFACE TENSION (DYNES/CM) = 37.8 AT 23.2 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4520 AT 25.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/ MOLE ATM.
.3824 495.65 514.03 32.05

DIFFUSION COEF. = .049 CM.20./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY. CHEM. 48. 23(1944)  VISCOSITY OF VAPOR = 5.99-03 CENTIPOISE

END OF COMPOUND EA 1244 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1244 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 196.6 GENERAL REFERENCE: TCR36

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .20-01 AT 30.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.2078 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.2466 - .00097 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.94420, B = -506.85, C = 154.7 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR38 P.8
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CST) = 4.560

SURFACE TENSION (DYNES/CM) = 37.0 AT 23.2 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (N) = 1.4520 AT 25.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3824 495.65 514.03 32.05

DIFFUSION COEF. = .055 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J. PHY. CHEM. 48, 23 (1944)

VISCOITY OF VAPOR = 6.35-03 CENITOIDE

END OF COMPOUND EA 1244 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1245 AT -40.0 DEGREES CENTIGRAGE

COMMON NAME: FORMULA WEIGHT: 176.2 GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36
VAPOR PRESSURE(TORR) = .65-01 AT 50.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.1208 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.00852 - .00089 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(CATR 4491): A = -2.38600, B = -711.47, C = 219.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.9
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 30.239

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 34.2 AT 21.8 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(NO) = 1.4290 AT 23.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/MOLE ATM.
.3361 463.19 524.19 30.10

DIFFUSION COEF. = .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1245 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1245 AT -20.0 DEGREES CENTINAGDE
COMMON NAME: 1-FLUORICHEMICAL
FORMULA WEIGHT: 176.2
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOUR PRESSURE (TORR) = 0.39-01 AT 30.0 DEG. CENT.  REFERENCE: TCR36
VAPOUR PRESSURE (TORR) = 0.65-01 AT 50.0 DEG. CENT.  REFERENCE: TCR36

DENSIY (G/ML) = 1.1030 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0852 - .00089 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.38600, B = -7.11.47, C = 219.3 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  reference: TCR36
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 15.283

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNE/CM) = 34.2 AT 21.8 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (NO) = 1.4290 AT 23.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHERN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/HOLE ATM.
.3361 463.19 524.18 30.10

DIFFUSION COEF. = .034 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU., J.PHY. CHEM. 48. 23 (1944)

THE VISCOSITY OF VAPOR = 4.75-03 CENTIPOISE

END OF COMPOUND EA 1245 AT -20.0 DEGREES C.
TABLE I

SUMMARY OF PROPERTIES OF EA 1245 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMLA WEIGHT: 176.2

GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

VAPOR PRESSURE (TORR) = .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36
VAPOR PRESSURE (TORR) = .05-01 AT 50.0 DEG. CENT. REFERENCE: TCR36

DENSITY (G/ML) = 1.0052 AT 21.9 DEG. CENT. DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANGIOLE CONSTANTS (EATR 4491): A = -2.38600, B = -711.47, C = 219.3 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 7.221

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 34.2 AT 21.9 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (NO) = 1.4290 AT 23.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV,
ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM. A
.3361 463.19 524.18 30.10

DIFFUSION COEF. = .041 CM2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23 (1944) VISCOSITY OF VAPOR = 5.20-03 CENTIPOISE

END OF COMPOUND EA 1245 AT .0 DEGREES C.

PAGE NUMBER 8-99
SUMMARY OF PROPERTIES

COMMON NAME:  1,245 AT 20.0 DEGREES CENTIGRADE
FORMULA WEIGHT:  176.2  GENERAL REFERENCE:  TCR36

**** WARNING:  SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOL TO SPECIFIED TEMPERATURE  ****

**** WARNING:  SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .30-01 AT 30.0 DEG. CENT.  REFERENCE:  TCR36
VAPOR PRESSURE(TORR) = .65-01 AT 50.0 DEG. CENT.  REFERENCE:  TCR36
DENSITY(G/ML) = 1.0674 WAS CALCULATED FROM THE EQUATION:  DENSITY = 1.0852 -.00089 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE:  TCR36

THE FOLLOWING ANTONINE CONSTANTS(EATR 4491):  A = -2.38600, B = -711.47, C = 219.3  DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE:  TCR36 P.9
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3.887

SURFACE TENSION (DYNES/CM) = 34.2 AT 21.8 DEG. CENT.  REFERENCE:  TCR36
REFRACTIVE INDEX(NO) = 1.4290 AT 23.0 DEG. CENT.  REFERENCE:  TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201(1963)

DFNSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3981 463.19 524.18 30.10

DIFFUSION COEF. = .047 CM^2/SO/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN.  J.PHY.CHEM.48.231(1944)  VISCOSITY OF VAPOR = 5.65-03 CENTIPoise

END OF COMPOUND EA  1245 AT 20.0 DEGREES C.

PAGE NUMBER B-100
VAPOR PRESSURE (TORR) = 30.0 DEG. CENT.
VAPOR PRESSURE (TORR) = 15.0 DEG. CENT.
VAPOR PRESSURE (TORR) = 0.0 DEG. CENT.

THE FOLLOWING ANTOINE CONSTANTS (449) = A = 2.38600, B = -71.47, C = 219.3
DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC/MOLE ATK

SURFACE TENSION (DYNES/CM) = 34.2 AT 21.8 DEG. CENT.
REFRACTIVE INDEX (ND) = 1.4290 AT 23.0 DEG. CENT.

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DIFFUSION COEFFICIENT = 0.49 CM/SEC CALCULATED FOR VAPOR IN AIR.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQUATION.

END OF COMPOUND EA 1245 AT 25.0 DEGREES CENT.
SUMMARY OF PROPERTIES OF EA 1245 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 176.2 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .30-01 AT 30.0 DEG. CENT. REFERENCE: TCR36
VAPOR PRESSURE (TORR) = .65-01 AT 50.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0496 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0052 + .00089 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.38600, B = -711.47, C = 219.3 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.9
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 2.280

SURFACE TENSION (DYNES/CM) = 34.2 AT 21.0 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4290 AT 23.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M C DEG C CC/MOLE ATM.
3361 463.19 524.18 30.10

DIFFUSION COEF. = .055 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1245 AT 40.0 DEGREES C.

PAGE NUMBER 8-102
SUMMARY OF PROPERTIES OF EA-1246 AT -20.0 DEGREES CENTIGRADE

BECAUSE THE SPECIFIED TEMPERATURE RANGE IS NOT COVERED BY THE AVAILABLE DATA, THE FOLLOWING TWO PROPERTIES:

- DENSITY (G/M3):
- HEAT OF VAPORIZATION (KCAL/MOL):

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

- DENSITY (G/M3):
- HEAT OF VAPORIZATION (KCAL/MOL):

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE.

The following Antoine constants were used to calculate the following four properties:

- DENSITY:
- HEAT OF VAPORIZATION:
- VISCOSITY:

The following critical properties were estimated using the method of Filippov:

- DENSITY: 1.9242
- VOLUME: 2.852
- TEMPERATURE: 1174.7 K
- PRESSURE: 940.49 K

The viscosity of the vapor was estimated using the above critical properties and the modified Sutherland's equation.

END OF COMPOUND EA-1246 AT -20.0 DEGREES C.

Appendix B

UNCLASSIFIED
SUMMARY OF PROPERTIES OF EA 1246 AT -40.0 DEGREES CENTIGRADE
COMMON NAME:       FORMULA WEIGHT: 106.1
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.007/20, B= 2890.40, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 0.0 TO 28.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(10^4R)= .32-03
ESTIMATED BOILING POINT(CENT.)= 206.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.2
VOLATILITY(MG/METER CUBED)= .37+01
VOLATILITY(MILLIMOLE/ METER CUBED)= .22-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.2134 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1714 - .00105 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.22760, B= -799.87, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CEINTISTOKES)= 15.983

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37, 201(1963)

 DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC  DEG C  CC/MOLE ATM.
.3689  412.01  450.22  32.61

DIFFUSION COEF. = .032 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 4.06-03 CENTIPoise

END OF COMPOUND EA 1246 AT -40.0 DEGREES C.  PAGE NUMBER B-103
UNCLASSIFIED

Appendix B

UNCLASSIFIED

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SUMMARY OF PROPERTIES OF EA 1246 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 166.1 GENERAL REFERENCE: ARCSL-TR-77001

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID USUALLY COOLS TO SPECIFIED TEMPERATURE ****


WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(1013) = .1100
ESTIMATED BOILING POINT(CENT.) = 206.5
HEAT OF VAPORIZATION(KILOCALORIES/ MOLE) = 13.2
VOLATILITY(MILLIMOLE/ METER CUBED) = 1.0+04
DENSITY(G/ML) = 1.1504 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1714 - .00105*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.22760, B = -799.87, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3.169

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3689 412.01 450.22 32.61

DIFFUSION COEF. = .053 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1246 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1246 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 166.1

GENERAL REFERENCE: ARCSL-TR-77001

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.90720, B = 2890.40, C = 273.2 DETERMINED OVER THE

TEMPERATURE RANGE .0 TO 28.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .16400

ESTIMATED BOILING POINT(CFNT.) = 206.5

HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 13.2

VOLATILITY(MG/METER CUBED) = .15+04

VOLATILITY(MILLIMOLE/ METER CUBED) =

DENSITY(G/ML) = 1.1452 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1714 -.00105*TEMP.(C) DETERMINED OVER

THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.22760, B = -799.87, C = 273.2 DETERMINED OVER THE

TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) =

2.852

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

G0/CC DEG C CC/MOLE ATM.

.3689 412.01 450.22 32.61

DIFFUSION COEF. = .055 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQ., J-PHY.CHEM,48,23 (1944) VISCOSITY OF VAPOR = 6.49-03 CENTIPOISE

END OF COMPOUND EA 1246 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1246 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 166.1  GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.90720, B= 2890.40, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE .0 TO 28.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .48+00
ESTIMATED BOILING POINT(CENT.)= 208.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.2
VOLATILITY(MG/METER CUBED)= .40+04  VOLATILITY(MILLIMOLE/ METER CUBED)= .24+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1294 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1714 - .00105 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.22760, B= -799.87, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 2.122

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILippov.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/MCC DEG C CC/MOLE ATM.
.3689 412.01 450.22 32.61

DIFFUSION COEF. = .081 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE Vapor WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,231(1944)  VISCOSITY OF VAPOR = 6.87-03 CENTIPoise

END OF COMPOUND EA 1246 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1249 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT: 154.1  GENERAL REFERENCE: TCR36

**** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE VALID ONLY FOR SUPECOOLED LIQUID AND NOT THE SOLID *****

VAPOR PRESSURE (TORR) = 0.74 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.1327 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - 0.00107 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.4 AT 20.4 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3890 AT 23.0 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -34.70 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.

.3497 364.16 440.78 30.99

DIFFUSION COEF. = .032 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23 (1944)  VISCOSITY OF VAPOR = 9.00-03 CENTIPoise

END OF COMPOUND EA 1249 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1249 AT -20.0 DEGREES CENTIGRADE
COMMON NAME:           FORMULA WEIGHT: 154.1          GENERAL REFERENCE: TCR36

***** WARNING: STICHE THERE IS NO BoILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.74+00 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.1113 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - .00107 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.4 AT 20.4 DEG. CENT.  REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3890 AT 23.0 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -34.70  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
CC/CC  DEG C  CC/MOLE  ATM.
1.497  364.16  440.78  30.99

DIFFUSION COEF. = .039 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.50-03 CENTIPoise

END OF COMPOUND EA 1249 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1249 AT .0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0899 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - .00107.*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR38

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = .24.4 AT 20.4 DEG. CENT. REFERENCE: TCR38
REFRACTIVE INDEX (NO) = 1.3890 AT 23.0 DEG. CENT. REFERENCE: TCR38
FREEZING POINT (DEG. CENT.) = -34.70 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
.3497 364.16 440.78 30.99

DIFFUSION COEF. = .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.01-03 CENTIPoise

END OF COMPOUND EA 1249 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1249 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:          FORMULA WEIGHT: 154.1        GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .74+00 AT 25.0 DEG. CENT.          REFERENCE: TCR36
DENSITY (G/ML) = 1.0088 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - .00107 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.          REFERENCE: TCR36
SURFACE TENSION (DYNES/CM) = 24.4 AT 20.4 DEG. CENT.          REFERENCE: TCR36
REFRACTIVE INDEX (NO) = 1.3890 AT 23.0 DEG. CENT.          REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -34.70 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.          ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3497 364.16 440.76 30.99

DIFFUSION COEF. = .054 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.          J.PHY.CHEM.48.23(1944)    VISCOSITY OF VAPOR = 0.52-03 CENTIPOISE

END OF COMPOUND EA 1249 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1249 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/NL) = 1.0632 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - 0.00107 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

SURFACE TENSION (DYNES/CM) = 24.4 AT 20.4 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (NO) = 1.3890 AT 23.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -34.70 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201 (1963)

DIFFUSION COEF. = 0.056 CM.SQ./SEC. CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU. J.PHY. CHEM. 48.23 (1944) VISCOSITY OF VAPOR = 6.64-03 CENTIPoise

END OF COMPOUND EA 1249 AT 25.0 DEGREES C.

PAGE NUMBER B-113
SUMMARY OF PROPERTIES OF EA 1249 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

*WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .74+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0472 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0899 - .00107 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36
SURFACE TENSION (DYNES/CM) = 74 AT 20.4 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3890 AT 3.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -34.70 REFERENCE: TCR36

THE FOLLOWING THERMODYNAMICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIIM. 37. 201 (1963)

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 23 (1944) VISCOSITY OF VAPOR = 7.02-03 CENTIPOISE

END OF COMPOUND EA 1249 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1251 AT \(-40.0\) DEGREES CENTIGRADE

COMMON NAME:  infl  
FORMULA WEIGHT: 100.0  
GENERAL REFERENCE: JACS 82 1960 3843

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4481): A = 7.5444, B = 1977.80, C = 238.8 DETERMINED OVER THE
TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .104 00
ESTIMATED BOILING POINT (CENT.) = 60.7
HEAT OF VAPORIZATION (CALORIE/MOLE) = 29.6
VOLATILITY (MG/METER CUBED) = .27 02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.4808 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4080 - .00180 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.41890, B = -230.77, C = 171.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENSTISTOKES) = 2.171

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX (NO) = 1.3148 AT 25.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960

HEAT OF FUSION (CAL/MOLE) = 2.84 AT -36.0 DEGREE CENT.  REFERENCE: J RSCH NBS P-C VGBA 1964 P307

FREEZING POINT (DEG. CENT.) = -36.86 REFERENCE: J RSCH NBS P-C VGBA 1964 P307

MELTING POINT DEPRESSION (DEG. C./MOLE) = 2.340 REFERENCE: JACS 82 3843 1960

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  

ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4846 233.60 206.38 52.62

DIFFUSION COEF. = .054 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHYS.CHEM.48.22(1944)  VISCOSITY OF VAPOR = 7.77-03  CENTISOISE

DPOLE MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE  REFERENCE: JACS 82 3843 1960

OXYGEN INDEX (UNITLESS) = 45.4 AT AMBIENT TEMPERATURE  REFERENCE: N9253 P. 4

END OF COMPOUND EA 1251 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1251 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: 1251
FORMULA WEIGHT: 100.0
GENERAL REFERENCE: JACS 82 1960 3643

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.54440, B = 457.80, C = 238.6 DETERMINED OVER THE TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 21.01
ESTIMATED BOILING POINT (CENT.) = 99.7
HEAT OF VAPORIZATION (KCAL/MOLE) = 9.7
VOLATILITY (kg/meter cubed) = 0.13495
VOLATILITY (millimole/ liter cubed) = 0.13493

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY (g/ml) = 1.4433 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4069 - 0.00180 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.41890, B = -230.77, C = 171.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82, 3843 1960
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (centistokes) = 1.273

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

REFRACTIVE INDEX (ND) = 1.3148 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
HEAT OF FUSION (KCAL/MOLE) = 2.84 AT -35.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
FREEZING POINT (deg. cent.) = -35.66 REFERENCE: J RSCH NBS P+C V68A 1964 P367
MELTING POINT DEPRESSION (deg. c./mole) = 2.340 REFERENCE: JACS 82 3843 1960

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4846 233.60 206.39 52.62

DIFFUSION COEF. = 0.065 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 46, 23(1944)

VISCOITY OF VAPOR = 8.52-03 CENITPOSE

DIPOLE MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3643 1960

OXYGEN INDEX (UNITLESS) = 45.4 AT AMBIENT TEMPERATURE REFERENCE: NBS553 P. 4

END OF COMPOUND EA 1251 AT -20.0 DEGREES C.
UNCLASSIFIED

UNCLASSIFIED

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SUMMARY OF PROPERTIES OF EA 1251 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: DF FORMULA WEIGHT: 100.0 GENERAL REFERENCE: JACS 82 1960 3843
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.54440, B = 1577.80, C = 236.6 DETERMINED OVER THE
TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TURR)= .28±02
ESTIMATED BOILING POINT(CENT.)= 99.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 9.3
VOLATILITY(MG/METER CUBED)= .15±06 VOLATILITY(MILLIMOLE/ METER CUBED)= .15±04
DENSITY(G/ML)= 1.3687 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4060 -.00186 *TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.41890, B = -230.77, C = 171.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES )= .612

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.3148 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
HEAT OF FUSION(KCAL/MOLE)= 2.84 AT -36.9 DEGREE CENT. REFERENCE: JRSCHB NBS P+8 V68A 1964 P367
FREEZING POINT (DEG. CENT.)= -36.86 REFERENCE: JRSCHB NBS P+8 V68A 1964 P367
MELTING POINT DEPRESSION(DEG. C./MOLE)= 2.340 REFERENCE: JACS 82 3843 1960

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4846 233.60 206.38 52.62
DIFFUSION COEF. = .090 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 1.00-02 CENTIPoise
DIPPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3843 1960
OXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE REFERENCE: NS9253 P. 4

END OF COMPOUND EA 1251 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1251 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: DF FORMULA WEIGHT: 100.0 GENERAL REFERENCE: JACS 82 1960 3643

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 7.54440, B= 1577.80, C= 238.6 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= 36+02
ESTIMATED BOILING POINT(CENT.)= 99.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 9.2
VOLATILITY(MILLIMOLE/METER CUBED)= 040-00 VOLATILITY(MILLIMOLE/METER CUBED)= 19+04
DENSITY(G/ML)= 1.3594 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4060 - .00196 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -1.41899, B= -230.77, C= 171.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTONES)= 3570

REFRACTIVE INDEX(ND)= 1.3148 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
HEAT OF FUSION(KCAL/MOLE)= 2.84 AT -36.9 DEGREE CENT. REFERENCE: J. RESCH NBS P+C 868A 1964 P367
FREEZING POINT (DEG. CENT.)=-36.96 REFERENCE: J. RESCH NBS P+C 868A 1964 P367
MELTING POINT DEPRESSION(DEG. C./MOLE)= 2.340 REFERENCE: JACS 82 3843 1960

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4846 233.60 208.36 52.62

DIFFUSION COEF. = .094 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE COVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM. 48.23 (1944) VISCOSITY OF VAPOR = 1.02-02 CENTIPOISE
DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3843 1960
OXYGEN INDEX(UNITLESS)= 45.4 AT AMBIENT TEMPERATURE REFERENCE: NBS 253 P. 4

END OF COMPOUND EA 1251 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1251 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: DMF
FORMULA WEIGHT: 100.0

GENERAL REFERENCE: JACS 82 1960 3843

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.54440, B = 1577.80, C = 239.6 DETERMINED OVER THE TEMPERATURE RANGE 19.0 TO 99.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .76+02
ESTIMATED BOILING POINT (CENT.) = 99.7
HEAT OF VAPORIZATION (KCAL/MOLE) = 9.1
VOLATILITY (MG/METER CUBED) = .39+04 VOLATILITY (MILLIMOLE/METER CUBED) = .39+04

DENSITY (G/ML) = 1.3314 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4060 - .00188 × TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.41890, B = -230.77, C = 171.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = .470

REFRACTIVE INDEX (ND) = 1.3148 AT 25.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

HEAT OF FUSION (KCAL/MOLE) = 2.84 AT -36.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C VG6A 1964 P367

FREEZING POINT (DEG. CENT.) = -36.46 REFERENCE: J RSCH NBS P+C VG6A 1964 P367

MELTING POINT DEPRESSION (DEG. C./MOLE) = 2.340 REFERENCE: JACS 82 3843 1960

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C. CC/MOLE ATM.
.4846 233.60 206.36 52.62

DIFFUSION COEF. = .104 CM.50./SEC CALCULATED FOR VAPOR IN AIR


VISCOSITY OF VAPOR = 1.07+02 CENTIPoise

DIPOLE MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 3843 1960

OXYGEN INDEX (UNITLESS) = 45.4 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P. 4

END OF COMPOUND EA 1251 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT THE MELTING POINT IN LIEU OF -40 DEG C
COMMON NAME: DICL FORMULA WEIGHT: 132.9 GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)CL2
***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES
ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.24420, B=1689.70, C= 216.1 DETERMINED OVER THE
TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .35+01
ESTIMATED BOILING POINT(CE nt.)= 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.5
VOLATILITY(MG/MEATER CUBED)= .24+05 VOLATILITY(MILLIMOLE/ MEATER CUBED)= .18+03
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4906 - .00138 TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79780, B= -103.28, C= 84.8 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 1.201

REFRACTIVE INDEX(ND)= 1.4589 AT 35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
HEAT OF FUSION(KILOCALORIES/MOLE)= 4.32 AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
FREEZING POINT(DEG. CENT.)= 32.95 REFERENCE: J RSCH NBS P+C V68A 1964 P367
MELTING POINT DEPRESSION(DEG. C./MOLE)= 3.440 REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ K HIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4728 392.88 281.10 50.78

DIFFUSION COEF. = .080 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.,38,2.3(1944) VISCOSITY OF VAPOR = 8.34-03 CENTPOISE

DIPOLE MOMENT(DEBYES)= 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

END OF COMPOUND EA 1253 AT 32.9 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT THE MELTING POINT IN LIEU OF -20 DEG C

COMMON NAME: DICL FORMULA WEIGHT: 122.9 GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)CL

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.24420, B= 1669.70, C= 216.1 DETERMINED OVER THE TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .35+01
ESTIMATED BOILING POINT(CENT.) = 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.5
VOLATILITY(MG/METER CUBED) = .24+05 VOLATILITY(MILLIMOLE/METER CUBED) = .18+03

< ***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4906 - .00138 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -79780, B= -103.28, C= 64.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82,3843 1960 WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 1.201

REFRACTIVE INDEX(ND) = 1.4569 AT 35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843

HEAT OF FUSION(HEAT/MOLE) = 4.32 AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V66A 1964 P367

FREEZING POINT (DEG. CENT.) = 32.95 REFERENCE: J RSCH NBS P+C V66A 1964 P367

MELTING POINT DEPRESSION(DEG. C./MOLE) = 3.440 REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GN/CC DEG C CC/MOLE ATM

.4728 392.89 281.10 50.78

DIFFUSION COEF. = .080 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 0.34-03 CENTIPOISE

DIPOL MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

END OF COMPOUND EA 1253 AT 329 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT THE MELTING POINT IN LIEU OF 0 DEG C
COMMON NAME: DICL FORMULA WEIGHT: 132.9
GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)Cl2

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT, THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.24420, B = 1669.70, C = 218.4 DETERMINED OVER THE TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .35+01
ESTIMATED BOILING POINT(ENGINE) = 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 11.5
VOLATILITY(MG/METER CUBED) = .24+05 VOLATILITY(MILLIMOLE/ METER CUBED) = .10+03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.4450 WAS CALCULATED FROM THE EQUATION: DENSITY = .4908 - .00138 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 1960 3843

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.79780, B = -103.26, C = 84.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82, 3843 1960
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 1.201

REFRACTIVE INDEX(IND) = 1.4569 AT 35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
HEAT OF FUSION(KCAL/MOLE) = 4.32 AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P387
FREQUENT POINT- (DEG. CENT.) = 32.95 REFERENCE: J RSCH NBS P+C V68A 1964 P387
MELTING POINT DEPRESSION(DEG. C./MOLE) = 3.440 REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GW/CC DEG C CC/MOLE ATM.

.4728 392.68 281.10 50.78

DIFFUSION COEF. = .090 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)

VISCOITY OF VAPOR = 8.34-03 CENTIPoise
DIPole MOMENT(DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

END OF COMPOUND EA 1253 AT 32.9 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: DICL FORMULA WEIGHT: 132.9 GENERAL REFERENCE: JACS 82 1960 3843 CH3P(0)CL2

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCAROL LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.24420, B= 1689.70, C= 216.1 DETERMINED OVER THE TEMPERATURE RANGE 35.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .15+01
ESTIMATED BOILING POINT(CENT.)= 166.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.8
VOLATILITY(MG/METER CUBED)= .11+05 VOLATILITY(MILLIMOLE/ METER CUBED)= .81+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.4629 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4908 - .0138 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79780, B= -103.26, C= 84.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:JACS 82,3843 1960
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES)= 1.541

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(IND)= 1.4569 AT 35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
HEAT OF FUSION(KCAL/MOLE)= 4.32 AT 32.3 DEGREE CENT. REFERENCE: J RSCN NBS P+C V88A 1964 P367
FREEZING POINT (DEG. CENT.)= 32.95 REFERENCE: J RSCN NBS P+C V88A 1964 P367
MELTING POINT DEPRESSION(DEG. C./MOLE)= 3.440 REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4726 392.88 281.10 50.78

DIFFUSION COEF. = .072 CM2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)

END OF COMPOUND EA 1253 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: DICL  FORMULA WEIGHT: 132.9  GENERAL REFERENCE: JACS 82 1960 3843 CH3P(O)Cl2

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A= 7.24420, B= 1869.70, C= 216.1 DETERMINED OVER THE
TEMPERATURE RANGE  29.0 TO 167.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

- VAPOR PRESSURE(TORR)=  .21+01
- ESTIMATED BOILING POINT(CENT.)= 166.6
- HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 11.7
- VOLATILITY(MG/MEASER CUBED)=  .15+05
- VOLATILITY(MILLIMOLE/ METER CUBED)=  .11+03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)=  1.4560 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.4068 - .00138 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE  25.0 TO 50.0 DEG. CENT.  REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A= -.79780, B= -103.26, C= 84.8 DETERMINED OVER THE
TEMPERATURE RANGE  25.0 TO 50.0 DEG. CENT.  REFERENCE:JACS 82,3843 1960
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )=  1.390

REFRACTIVE INDEX(NO)=  1.4569 AT  35.0 DEG. CENT.  REFERENCE: JACS 82 1960 3843
HEAT OF FUSION(KCAL/MOLE)=  4.32 AT  32.9 DEGREE CENT.  REFERENCE: J RSCH NBS P+C V68A 1964 P367
FREEZING POINT (DEG. CENT.)=  32.95  REFERENCE: J RSCH NBS P+C V68A 1964 P367
MELTING POINT DEPRESSION(DEG. C./MOLE)=  3.440  REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE  VOLUME  PRESSURE
GM/CC    DEG C    CC/MOLE   ATM.
.4728    392.08    281.10   50.78

DIFFUSION COEF. =  .075 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.  J.PHY.CHEM,48,231(1944)  VISCOSITY OF VAPOR = 8.10-03 CEN'TIPOISE
DIPOL MOMENT(DEBYES)=  3.4 AT AMBIENT TEMPERATURE  REFERENCE: JACS 82 1960 3643

END OF COMPOUND EA 1253 AT  25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1253 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: DlCl FORMULA WEIGHT: 132.9 GENERAL REFERENCE: JACS 82 1960 3843 CH3P(O)Cl2

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 7.24420, B= 1669.70, C= 216.1 DETERMINED OVER THE TEMPERATURE RANGE 39.0 TO 167.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = .53+01
ESTIMATED BOILING POINT (CENT.) = 166.6
HEAT OF VAPORIZATION (KCAL/MOLE) = 11.4
VOLATILITY (MG/METER CUBED) = 36+05 VOLATILITY (MILLIMOLE/ METER CUBED) = .27+03
DENSIY (G/MIL) = 1.4352 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.4908 - .00138 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -.79780, B= -102.26, C= 84.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: JACS 82 3843 1960

WERE USED TO CALCULATE THE VISCOSITY
VISCOITY (CENTISTOKES) = 1.071

REFRACTIVE INDEX (ND) = 1.4569 AT 35.0 DEG. CENT. REFERENCE: JACS 82 1960 3843
HEAT OF FUSION (KCAL/MOLE) = 4.32 AT 32.9 DEGREE CENT. REFERENCE: J RSCH NBS P+C V68A 1964 P367
FREEZING POINT (DEG. CENT.) = 32.95 REFERENCE: J RSCH NBS P+C V68A 1964 P367
MELTING POINT DEPRESSION (DEG. C./MOLE) = 3.440 REFERENCE: JACS 82 1960 3843

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.4729 392.88 281.10 50.78

DIFFUSION COEF. = .003 CM.50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.40.23(1944) VISCOSITY OF VAPOR = 8.56-03 CENTIPOISE
DIPOL MOMENT (DEBYES) = 3.4 AT AMBIENT TEMPERATURE REFERENCE: JACS 82 1960 3843

END OF COMPOUND EA 1253 AT 40.0 DEGREES C. PAGE NUMBER 9-128
SUMMARY OF PROPERTIES OF EA 1255 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1  GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.12+01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.1329 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - 00105 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.46410, B = -794.03, C = 275.8 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR56 P.11
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 7.997

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.2 AT 22.2 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00  REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37, 201(1963)

<table>
<thead>
<tr>
<th>G/CC/CC</th>
<th>DEG C</th>
<th>CC/MOLE</th>
<th>ATM.</th>
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</thead>
<tbody>
<tr>
<td>0.3486</td>
<td>374.19</td>
<td>442.21</td>
<td>31.37</td>
</tr>
</tbody>
</table>

DIFFUSION COEF. = 0.032 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1255 AT -40.0 DEGREES C.  PAGE NUMBER B-127
SUMMARY OF PROPERTIES OF EA 1255 AT -20.0 DEGREES CENTIGRADE

COMMEN NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

- - - - WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.1201 AT 25.0 DEG. CENT. References: TCR36
DENSITY (G/ML) = 1.1119 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - .00105 * TEMP (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. References: TCR36

- - - - WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE - - - -

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 2.46410, B = -794.03, C = 275.8 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. References: TCR56 P. 11

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 4.362

- - - - WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE - - - -

SURFACE TENSION (DYNES/CM) = 24.2 AT 22.2 DEG. CENT. References: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 References: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GML/CC DEG C CC/VOLE ATM.
.5486 374.19 442.21 31.37

DIFFUSION COEF. = .039 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.44-03 CENTIOPOISE

END OF COMPOUND EA 1255 AT -20.0 DEGREES C. PAGE NUMBER B-128
SUMMARY OF PROPERTIES OF EA 1255 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 154.1

GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .12+01 AT 25.0 DEG. CENT.  REFERENCE: TCR36

DENSITY (G/ML) = 1.0909 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - .00105*TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.46410, B = -794.03, C = 275.8 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR56 P.11

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 2.598

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 24.2 AT 22.2 DEG. CENT.  REFERENCE: TCR36

FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE AIM. .3466 374.19 442.21 31.37

DIFFUSION COEF. = .045 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.46,23(1944)  VISCOSITY OF VAPOR = 5.94-03 CENTIPoise

END OF COMPOUND EA 1255 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1255 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:  
FORMULA WEIGHT:  154.1  
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
THE VAPOR PRESSURE, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 1.12 X 10^1 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.0699 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0699 - 0.00105 * TEMPERATURE (CENT) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.46410, B = -794.03, C = 275.8 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR56 P. 11
WERE USED TO CALCULATE THE VISCOSITY:
VISCOSITY (CENTISTOKES) = 1.660
SURFACE TENSION (DYNE/CM) = 24.2 AT 22.2 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GJ/CC DEG C CC/MOLE ATM.
.3486 374.19 442.21 31.37

DIFFUSION COEFF. = .054 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.  J. PHY. CHEM. 48, 23 (1944)  VISCOSITY OF VAPOR = 6.44-03 CENTISOPE

END OF COMPOUND EA 1255 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1255 AT 25.0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT: 154.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .12±0.1 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.0647 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - .000105 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.46410, B = -794.03, C = 275.8 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT.  REFERENCE: TCR56 P.11
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.498

SURFACE TENSION (DYNES/CM) = 24.2 AT 22.2 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00  REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHEM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
84/CC  DEG C  CC/MOLE  ATM
.3486  374.19  442.21  21.37

DIFFUSION COEF. = .056 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLAND EQ. J.PHY.CHEM.46,23(1944)  VISCOSITY OF VAPOR = 6.56-03 CENTIPoise

END OF COMPOUND EA 1255 AT 25.0 DEGREES C.
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**SUMMARY OF PROPERTIES OF EA 1255 AT 40.0 DEGREES CENTIGRADE**

**COMMON NAME:**

**FORMULA WEIGHT:** 154.1

**GENERAL REFERENCE:** TCR36

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**WARNING:** Since there is no boiling point data for this compound and there is no vapor pressure data to estimate a boiling point, the values calculated above the data ranges may be above boiling point and not meaningful.

**VAPOR PRESSURE (Torr):** 0.1201 AT 25.0 DEG. CENT.  REFERENCE: TCR36

**DENSITY (G/ML):** 1.0489 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0909 - .00105 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 25.0 DEG. CENT. REFERENCE: TCR36

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**THE FOLLOWING ANTOINE CONSTANTS (EATR 4491):**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2.46410</td>
<td>-794.03</td>
<td>275.6</td>
</tr>
</tbody>
</table>

DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 11

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**WATER USED TO CALCULATE THE VISCOSITY**

**VISCOITY (CENTISTOKES):** 1.122

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**SURFACE TENSION (DYNE/CM):** 24.2 AT 22.2 DEG. CENT.  REFERENCE: TCR36

**FREEZING POINT (DEG. CENT.):** -78.00  REFERENCE: TCR36 DID NOT FREEZE TO -78 C

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**DIFFUSION COEF. = 0.62 CM^2/SEC CALCULATED FOR VAPOR IN AIR**

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**END OF COMPOUND EA 1255 AT 40.0 DEGREES C.**

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SUMMARY OF PROPERTIES OF EA 1258 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR): .45±00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/MIL) = 1.1401 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0977 - .00106 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.36333, B = -782.65, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.13
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 8.084

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CMP) = 27.6 AT 25.7 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (NO) = 1.3950 AT 23.5 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MOLE ATM.
.3510 372.50 439.19 31.50

DIFFUSION COEF. = .032 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM, 48, 23(1944) viscosity of vapor = 4.96-03 CENTPOISE

END OF COMPOUND EA 1258 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1258 AT -20.0 DEGREES CENT:GRADE
COMMON NAME: FORMULA WEIGHT: 154.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .45400 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.1169 AS CALCULATED FROM THE EQUATION: DENSITY = 1.0977 - .00106 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.36333, B = -762.65, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 4.450

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 27.5 AT 25.7 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3950 AT 23.5 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPOV. ZHURN. FIZ. KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MOLE ATM.
.3510 372.50 439.19 31.50

DIFFUSION COEF. = .039 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48.23(1944)

END OF COMPOUND EA 1258 AT -20.0 DEGREES C.

PAGE NUMBER 8-134
SUMMARY OF PROPERTIES OF EA 1258 AT .0 DEGREES CENTIGRADE
COMMON NAME: general reference: TCR36
FORMULA WEIGHT: 154.1
GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(Torr) = .45+00 AT 25.0 DEG. CENT. reference: TCR36
DENSITY(g/ml) = 1.0977 was calculated from the equation: DENSITY = 1.0977 - .00106 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. reference: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.36333, B = -762.65, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. reference: TCR36
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES ) = 2.683

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

SURFACE TENSION (DYNE/CM) = 27.6 AT 25.7 DEG. CENT. reference: TCR36
REFRACTIVE INDEX(ND) = 1.3950 AT 23.5 DEG. CENT. reference: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GR/CC DEG C CC/VOLE ATM.
.3510 372.50 439.19 31.50

DIFFUSION COEF. = .046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ:, J.PHY.CHEM.,48,23(1944) VISCOSITY OF VAPOR = 5.98-03 CENTIPOISE

END OF COMPOUND EA 1258 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1258 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGE MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = 0.45 + 0.0 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.0765 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0977 - 0.00106 * TEMPERATURE DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.36333, B = -762.65, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 1.730

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

SURFACE TENSION (DYNES/CM) = 27.6 AT 25.7 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(ND) = 1.3950 AT 23.5 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GJ/CC DEG C. CC/MOLE ATM.
0.3510 352.50 439.19 31.50

DIFFUSION COEF. = 0.054 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1258 AT 20.0 DEGREES C. PAGE NUMBER 8-136
SUMMARY OF PROPERTIES OF EA 1258 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:   FORMULA WEIGHT: 154.1    GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA, TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (Torr) = .45 +.00 AT 25.0 DEG. CENT.    REFERENCE: TCR36
DENSITY (g/ml) = 1.0712 was calculated from the equation: DENSITY = 1.0977 - .00106 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.    REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.36333, B = -762.65, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 13
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 1.565

SURFACE TENSION (DYNES/CM) = 27.6 AT 25.7 DEG. CENT.    REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3950 AT 23.5 DEG. CENT.    REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILippov.   ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3510 372.50 439.19 31.50

DIFFUSION COEF. = .058 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM. 48.23(1944)    VISCOSITY OF VAPOR = 8.61 x 03 CENTIPoise

END OF COMPOUND EA 1258 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1258 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: COMMON NAME: FORMULA WEIGHT: 154.1 GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.45+00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0553 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0977 - 0.0106 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATMA 4491): A = -2.36333, B = -762.65, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.13
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 1.180

SURFACE TENSION (DYNES/CM) = 27.6 AT 25.7 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3950 AT 23.5 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
0.3510 372.50 439.19 31.50

DIFFUSION COEF. = 0.062 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN., J.PHY.CHEM.48,23 (1944) VISCOSITY OF VAPOR = 8.98-03 CENTIPOISE

END OF COMPOUND EA 1258 AT 40.0 DEGREES C.

PAGE NUMBER B-138
SUMMARY OF PROPERTIES OF EA 1261 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 140.1 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .14401 AT 25.0 DEG. CENT. REFERENCES: TCR36
DENSITY (G/ML) = 1.1768 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 + .00112 *.00112 (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCES: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.18302, B = -688.15, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCES: TCR36 P.14

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 5.752

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.3 DEG. CENT. REFERENCES: TCR36
REFRACTIVE INDEX (NO) = 1.3870 AT 22.2 DEG. CENT. REFERENCES: TCR36
FREEZING POINT (DEG. CENT.) = -52.00 REFERENCES: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM
.3639 369.23 395.11 35.25

DIFFUSION COEF. = .035 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM. 48, 23 (1944)

VISCOSITY OF VAPOR = 5.23-03 CENTIPOISE

END OF COMPOUND EA 1261 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1261 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 140.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR): .14+01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML): 1.1544 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 + .00112 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING AWTONE CONSTANTS (EATR 4491): A = -2.18302, B = -988.15, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 14
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.368

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.3 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.3870 AT 22.2 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -52.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILippOV.

ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3638 360.23. 385.11 35.25

DIFFUSION COEF. = .043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)

VISCOITY OF VAPOR = 5.77-03 CENTIPOISE

END OF COMPOUND EA 1261 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1261 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 140.1

GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .1441 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (g/ml) = 1.1320 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 - .00112 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.18302, B = -686.15, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 2.132

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

SURFACE TENSION (DYNES/CM) = 26.9 AT 24.3 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX (N) = 1.3870 AT 22.2 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -52.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3638 360.23 385.11 39.25

DIFFUSION COEF. = .051 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23 (1944)

VISCOSITY OF VAPOR = 6.30-03 CENTIPOISE

END OF COMPOUND EA 1261 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF CA FORMULA: C13H26 A Boiling point (torr) = 149°C. The values calculated above the data ranges may be above boiling point and not meaningful.

VAPOR PRESSURE (TORR) AT 25.0 DEG. CENT.: 1.1096 Was calculated from the equation: reference: TC536.

THE FOLLOWING DATA WERE USED TO DETERMINE:

冷静 5.0 DEG. CENT. reference: TC536.

1. Boiling point (torr).
2. Cold point.
3. Surface tension (dynes/cm).
4. Relative volume (centistokes)
5. Viscosity (centistokes)

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLIPPOV.

CRITICAL TEMPERATURE = 284.8 DEG. CENT. reference: TC536.
CRITICAL PRESSURE = 24.3 DEG. CENT. reference: TC536.

DIFUSION COEF. = 0.04 CM^3/S/SEC CALCULATED FOR VAPOR IN AIR.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. (J. PHYS. CHEM. 68, 23(1964)) VISCOSITY OF VAPOR = 0.0433 CENTIPOISE.

END OF COMPOUND CA 1261 AT 20.0 DEGREES C.

UNCLASSIFIED
SUMMARY OF PROPERTIES OF EA 1261 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: UNCLASSIFIED
FORMULA WEIGHT: 149.1
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL.

VAPOR PRESSURE(TORR) = 1.1401 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.1040 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1320 - .00112 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.18302, B = -886.15, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.14
WERE USED TO CALCULATE THE VISCOSITY:

VISCOSITY(CEINTISTOKES) = 1.313

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.3 DEG. CENT. REFERENCE: TCR36
REFRACTIVE INDEX(NO) = 1.3870 AT 22.2 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -52.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3638 360.23 385.11 35.25

DIFFUSION COEF. = .061 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 0.96-03 CENTIPoise

END OF COMPOUND EA 1261 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1261. AT 40.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 140.1 
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = \(1.16 \times 10^{-1}\) AT 25.0 DEG. CENT. REFERENCE: TCR36

DENSITY (G/ML) = 1.0872 was calculated from the equation: DENSITY = 1.1230 - 0.00112 \(\times\) TEMP.(C.) determined over the temperature range 25.0 to 50.0 deg. cent. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.18302, B = -686.15, C = 273.2 determined over the temperature range 25.0 to 50.0 deg. cent. REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.019

SURFACE TENSION (DYNES/CN) = 26.8 AT 24.3 DEG. CENT. REFERENCE: TCR36

REFRACTIVE INDEX (NO) = 1.3870 AT 22.2 DEG. CENT. REFERENCE: TCR36

FREEZING POINT (DEG. CENT.) = -52.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHI. 37, 201 (1963)

<table>
<thead>
<tr>
<th>DENSITY TEMPERATURE VOLUME PRESSURE</th>
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<tr>
<td>0.3630</td>
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DIFFUSION COEF. = \(0.68 \text{ CM.SQ./SEC} \) CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 7.35-03 CENTIPoise

END OF COMPOUND EA 1261 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 182.2 GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)= .80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = 1.0414 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0485 -.00094 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.86490, B= -510.09, C= 200.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.15
WERE USED TO CALCULATE THE VISCOITY

VISCOITY(CENTISTOKES) = 20.082

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (JYNS/CM) = 26.8 AT 24.0 DEG. CENT. REFERENCE: TCR36
MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: TCR36
REFRACTIVE INDEX(ND)= 1.4050 AT 23.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1983)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3397 410.64 552.63 26.53

DIFFUSION COEF. = .027 CM.SQ./SEC CALCULATED FOR VAPORE IN AIR

THE VISCOITY OF THE VAPORE WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOITY OF VAPORE = 4.45-03 CENTIPoise

END OF COMPOUND EA 1262 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 182.2
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.80-01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0653 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0465 - 0.00094 *TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.88490, B = -510.09, C = 200.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.15
WERE USED TO CALCULATE THE VISCOSITY
VISCOITY (CENTISTOKES) = 8.885

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNE/SQM) = 26.8 AT 24.0 DEG. CENT. REFERENCE: TCR36
MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: TCR36
REFRACTIVE INDEX (N) = 1.4050 AT 23.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MOLE ATM
0.3297 410.84 552.53 28.53

DIFFUSION COEF. = 0.93 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.91-03 CENTIPoise

END OF COMPOUND EA 1262 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT .0 DEGREES CENTIGRADE
COMMON NAME: Formula weight: 182.2 General Reference: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .80 - .01 AT 25.0 DEG. CENT. Reference: TCR36
DENSITY (G/ML) = 1.0465 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0465 - .00094 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. Reference: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.88490, B = -510.09, C = 200.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. Reference: TCR36 P.15
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 4.627

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.0 DEG. CENT. Reference: TCR36
MELTING POINT (DEG. CENT.) = -50.0 Reference: TCR36
REFRACTIVE INDEX (N) = 1.4050 AT 23.0 DEG. CENT. Reference: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/C/CC DEG C CC/MOLE ATM.
.3997 410.84 592.53 26.53

DIFFUSION COEF. = .039 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48, 23 (1944)

VISCOSITY OF VAPOR = 5.37-03 CENTIPOISE

END OF COMPOUND EA 1262 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: UNCLASSIFIED  FORMULA WEIGHT: 182.2  GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = 0.80-01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY(G/ML) = 1.0277 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0455 - 0.00094 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.88490, B = -510.09, C = 200.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.15
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 2.713

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 26.0 AT 24.0 DEG. CENT.  REFERENCE: TCR36
MELTING POINT (DEG. CENT.) = -50.0  REFERENCE: TCR36
REFRACTIVE INDEX (NP) = 1.4050 AT 23.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KSM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GA/CC DEG C CC/MMOLE ATM.
0.3297 410.04 552.53 26.53

DIFFUSION COEF. = 0.046 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.82-03 CENTIPoise

END OF COMPOUND EA 1262 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT 25.0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT: 182.2  GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR): 0.80-01  AT  25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML):  1.0203 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0465 - 0.0065X TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE: 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.88490, B = -510.09, C = 200.0 DETERMINED OVER THE TEMPERATURE RANGE: 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 2.410

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.0 DEG. CENT.  REFERENCE: TCR36

MELTING POINT (DEG. CENT.) = -50.0  REFERENCE: TCR36

REFRACTIVE INDEX (NO) = 1.4050 AT 23.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE  VOLUME  PRESSURE
GN/CC  DEG C  CC/MOL  ATM.
.3297  410.94  552.53  26.53

DIFFUSION COEF. = .047 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLAND'S EQ.  J. PHY. CHEM. 48, 23 (1944)  VISCOSITY OF VAPOR = 5.94-03 CENTIPOISE

END OF COMPOUND EA 1262 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1262 AT 40.0 DEGREES CENTIGRADE
COMMON NAME:                        FORMULA WEIGHT: 182.2  GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .80-01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.0089 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0465 - .00094 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.88490, B = -510.90, C = 200.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.739

SURFACE TENSION (DYNES/CM) = 26.8 AT 24.0 DEG. CENT.  REFERENCE: TCR36
MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: TCR36
REFRACTIVE INDEX (ND) = 1.4050 AT 23.0 DEG. CENT.  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/L/CC DEG. C. CC/MMOLE ATM.
.3297 410.84 552.53 26.53

DIFFUSION COEF. = .053 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.  J. PHY. CHEM., 48, 23 (1944)  VISCOSITY OF VAPOR = 6.28-03 CENTIPoise

END OF COMPOUND EA 1262 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1263 AT THE MELTING POINT IN LIEU OF -40 DEG C

COMMON NAME: "a"  
FORMULA WEIGHT: 230.3  
GENERAL REFERENCE: TCR36

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

VAPOR PRESSURE(TORR) = .40-01 AT 25.0 DEG. CENT.  
REFERENCE: TCR36

DENSITY(G/ML) = .9954 WAS CALCULATED FROM THE EQUATION: DENSITY = .0072 - .00082 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  
REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.15850, B = -663.14, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  
REFERENCE: TCR36 P.16

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 18.038

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 28.4 AT 26.3 DEG. CENT.  
REFERENCE: TCR36

FREEZING POINT (DEG. CENT.) = -10.00  
REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GN/CC DEG C CC/MOLE ATM.
.3064 455.57 777.59 20.08

DIFFUSION COEF. = .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)

VISCOITY OF VAPOR = 4.48-03 CENTIPOISE

END OF COMPOUND EA 1263 AT -10.0 DEGREES C.  
PAGE NUMBER B-151
SUMMARY OF PROPERTIES OF EA 1263 AT -20.0 DEGREES CENTIGRADE

COMMON NAME:          FORMULA WEIGHT: 238.3          GENERAL REFERENCE: TCR36

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

VAPOR PRESSURE (TORR):  .40-01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = 1.0036 WAS CALCULATED FROM THE EQUATION: DENSITY = .9872 - .000082 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.15650, B = -663.14, C = 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36 P. 16
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 27.641

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 28.4 AT 26.3 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -10.00  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1983)
DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC  DEG C  CC/MOLE  ATM.
.3064  455.57  777.59  20.08

DIFFUSION COEF. = .026 CM.SQ./SEC CALCULATED FOR VAPOUR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOUR = 4.28-03 CENTIPoise

END OF COMPOUND EA 1263 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1263 AT .0 DEGREES CENTIGRADE
COMMON NAME:                    FORMULA WEIGHT:    238.3  GENERAL REFERENCE: TCR36
VAPOR PRESSURE (TORR) = .40-01 AT 25.0 DEG. CENT.  REFERENCE: TCR36
DENSITY (G/ML) = .9872 WAS CALCULATED FROM THE EQUATION: DENSITY = .9872 - .00082 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.15650, B = -663.14, C = 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: TCR36 P.16
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 12.273

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSIION (DYNES/CM) = 28.4 AT 26.3 DEG. CENT.  REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -10.00  REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/MCC DEG C CC/MOLE ATM.
.3064 455.57 777.59 20.08

DIFFUSION COEF. = .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM,48,23(1944)

VISCOITY OF VAPOR = 4.68-03 CENTIPOISE
SUMMARY OF PROPERTIES OF EA 1263 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:          FORMULA WEIGHT: 238.3     GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .40-01 AT 25.0 DEG. CENT.      REFERENCE: TCR36
DENSITY (G/ML) = .9708 was calculated from the equation: DENSITY = .9872 - .00082 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.      REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.15850, B = -663.14, C = 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.      REFERENCE: TCR36 P.16
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 6.259

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 20.4 AT 26.3 DEG. CENT.      REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -10.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C. CC/300LE ATM.
.3064 455.57 777.59 20.08

DIFFUSION COEF. = .035 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944)      VISCOSITY OF VAPOR = 5.09-03 CENTIPOISE

END OF COMPOUND EA 1263 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1263 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:          FORMULA WEIGHT: 239.3          GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .40-01 AT 25.0 DEG. CENT.      REFERENCE: TCR36
DENSITY(G/ML) = .9167 WAS CALCULATED FROM THE EQUATION: DENSITY = .9872 -.00062 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.      REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.1850, B = 853.14, C = 204.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P.16
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 5.429

SURFACE TENSION (DYNE/CM) = 28.4 AT 26.3 DEG. CENT.       REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -10.00       REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.       ZHURN. FIZ KHIIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3064 455.57 777.59 20.08

DIFFUSION COEF. = .037 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48,23(1944)       VISCOSITY OF VAPOR = 5.19-03 CENTIPOISE

END OF COMPOUND EA 1263 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1263 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 238.3 GENERAL REFERENCE: TCR36

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 40.01 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 0.9544 WAS CALCULATED FROM THE EQUATION: DENSITY = 0.9872 - 0.00082 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.15850, B = -663.14, C = 204.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36 P. 16
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.606

SURFACE TENSION (DYNE/CM) = 28.4 AT 26.3 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -10.00 REFERENCE: TCR36

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37, 201 (1963)
DEN SITY TEMPERATURE VOLUME PRESSURE
0.3664 455.97 777.59 20.08

DIFFUSION COEF. = 0.041 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J. PHYS. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.49-03 CENTIPOISE

END OF COMPOUND EA 1263 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1264 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3 GENERAL REFERENCE: TCR36

VAPOR PRESSURE (TORR) = 12.0 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0191 WAS CALCULATED FROM THE EQUATION: DENSITY = 0.9399 - 0.0098(TEMP.(C.)) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.85290, B = -44.97, C = 160.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 p.17
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 69.853

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 25.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.48.23 (1944) VISCOSITY OF VAPOUR = 4.11-03 CENTIPOISE

END OF COMPOUND EA 1264 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1264 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3 GENERAL REFERENCE: TCR36

*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.12±00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = 1.0015 WAS CALCULATED FROM THE EQUATION: DENSITY = 0.9839 - 0.00088 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.85290, B = -444.97, C = 160.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 P.17
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 20.767

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 25.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG. C CC/MOLE ATM.
0.3097 413.12 724.04 20.31

DIFFUSION COEF. = 0.027 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.Chem.48,23(1944) VISCOSITY OF VAPOR = 4.54-03 CENTIPOISE

END OF COMPOUND EA 1264 AT -20.0 DEGREES C. PAGE NUMBER B-158
### Summary of Properties of EA 1264

- **Formula Weight**: 224.3
- **Central Grade**: TCR 99

#### Important Notes:
- **Boiling Point**: The values calculated above the data range may be above boiling point and not meaningful.
- **Temperature Range**: 25.0 to 50.0 deg. cent.

#### Viscosity (cP/cm/s)

<table>
<thead>
<tr>
<th>Temperature (deg. cent.)</th>
<th>Viscosity (cP/cm/s)</th>
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<tbody>
<tr>
<td>25.1</td>
<td>8.355</td>
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#### Surface Tension (dynes/cm)

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<th>Temperature (deg. cent.)</th>
<th>Surface Tension (dynes/cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0</td>
<td>78.00</td>
</tr>
</tbody>
</table>

**FREEZE-POINT**: TCR 36

**Density (g/mL)**: 0.85290

**Boiling Point**: 260 deg. cent. reference: TCR 36, p. 17

**Viscosity (centistokes)**: 8.355

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**General Reference**: TCR 36

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**UNCLASSIFIED**

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**END OF COMPOUND EA 1264 AT 0 DEGREES C.**
SUMMARY OF PROPERTIES OF EA 1264 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3 GENERAL REFERENCE: TCR36

VAPOR PRESSURE (TORR) = 12.00 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (G/ML) = .9663 WAS CALCULATED FROM THE EQUATION: DENSITY = .9030 - 00008 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.85200, B = -444.97, C = 100.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 P.17
WERE USED TO CALCULATE THE VISCOSITY
VISCOITY (CENTISTOKES) = 4.114

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 25.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE 10-78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV
ZHURN. FIZ KHM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3097 413.19 724.04 20.31

DIFFUSION COEF. = .037 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23 (1944)
VISCOITY OF VAPOR = 8.39-03 CENTIPOISE

END OF COMPOUND EA 1264 AT 20.0 DEGREES C.

PAGE NUMBER 6-160
SUMMARY OF PROPERTIES OF EA 1264 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3
GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (Torr) = .12 + 0.0 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY (GM/ML) = .9619 WAS CALCULATED FROM THE EQUATION: DENSITY = .9039 - .00088 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.0529, B = 444.97, C = 160.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 38 P. 17
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.529

SURFACE TENSION (DYNES/CM) = 25.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3097 413.19 724.04 20.31

DIFFUSION COEFF. = .039 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHYS. CHEM. 48, 23 (1944)

VISCOSITY OF VAPOR = 5.49-103 CENTIPOISE

END OF COMPOUND EA 1264 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1264 AT 40.0 DEGREES CENTIGRADE
COMMON NAME:          FORMULA WEIGHT: 224.3          GENERAL REFERENCE: TCR36

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = .12488 AT 25.0 DEG. CENT. REFERENCE: TCR36
DENSITY(G/ML) = .9387 WAS CALCULATED FROM THE EQUATION: DENSITY = .9839 - .00088 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR36

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.85290, B = -444.97, C = 160.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: TCR 36 p.17
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 2.333

SURFACE TENSION (DYNES/CM) = 25.1 AT 25.0 DEG. CENT. REFERENCE: TCR36
FREEZING POINT (DEG. CENT.) = -78.00 REFERENCE: TCR36 DID NOT FREEZE TO -78 C

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 261(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3097 413.19 724.04 20.31

DIFFUSION COEF. = .043 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 5.81-03 CENITPOISE

END OF COMPOUND EA 1264 AT 40.0 DEGREES C. PAGE NUMBER B-162
SUMMARY OF PROPERTIES OF EA 1274 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 198.1 
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.55430, B= 2662.60, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .14-.02
ESTIMATED BOILING POINT(TEMP.)= 196.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.2
VOLATILITY(MG/METER CUBED)= .16+02 VOLATILITY(MILLIMOLE/METER CUBED)= .94-.01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1020 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0620 -.00100 TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.70210, B= -895.12, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )= 12.424

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G3/CC DEG C CC/MOLE ATM.
3378 385.55 497.64 28.37

DIFFUSION COEF. = .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = .70-03 CENTPOISE

END OF COMPOUND EA 1274 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1274 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 168.1

GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.55430, B = 2662.60, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TOOH)= .11-01
ESTIMATED BOILING POINT(CENT.): 198.2
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.2

VOLATILITY(MG/METER CUBED)= 12.43
VOLATILITY(MILLIMOLES/METER CUBED)= .69+00

DENSITY(ML/L)= 1.0620 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0620 - .00100 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.70210, B = -885.12, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VIScosity(CENTISTOKES )= 6.22R

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CG/CC DEG C. CC/MOLE ATM.
.5378 395.95 497.64 28.37

DIFFUSION COEF. = .036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.19-03 CENTIPoise

END OF COMPOUND EA 1274 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1274 AT .0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT: 168.1  
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.55430, B = 2062.60, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE -29.6 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TOHR) = .64-01
ESTIMATED BOILING POINT (CENT.) = 196.2
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 12.2
VOLATILITY (MICROMOL/ METER CUBED) = .63+03

DENSITY (G/MIL) = 1.0620 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 - .00100 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.454

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  
ZHURN. FIZ KHIM. 37. 201 (1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G/A CC DEG C CC/MOLE ATM.  
.3378 385.55 497.64 28.37

DIFFUSION COEF. = .042 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


VISCOSITY OF VAPOR = 5.67-03 CENTISOISE

END OF COMPOUND EA 1274 AT .0 DEGREES C.  
PAGE NUMBER: B-165
SUMMARY OF PROPERTIES OF EA 1274 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 168.1 
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.55430, B = 2603.60, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .30 + 0.0

ESTIMATED BOILING POINT (CENT.) = 196.2

HEAT OF VAPORIZATION (KCAL/MOLE) = 12.2

VOLATILITY (MG/METER CUBED) = .27 + 0.04 VOLATILITY (MILLIMOLE/ METER CUBED) = .16 + 0.02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0420 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 - .00100 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.70210, B = -885.12, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST/STOKES) = 2.076

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G3/CC DEG C CC/MOLE ATM.
.3378 385.55 497.64 28.37

DIFFUSION COEF. = .049 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48, 23 (1944) VISCOSITY OF VAPOR = 6.15-03 CENITPOISE

END OF COMPOUND EA 1274 AT 20.0 DEGREES C. 

PAGE NUMBER B-166
SUMMARY OF PROPERTIES OF EA 1274 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 166.1  GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.55430, B = 2662.60, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .42 + 00
ESTIMATED BOILING POINT (CENT.) = 196.2
HEAT OF VAPORIZATION (KiloCALORIES/ MOLE) = 12.2
VOLATILITY (MG/METER CUBED) = 30 + 04
VOLATILITY (MILLIMOLE/ METER CUBED) = 23 + 02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0370 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 - .00100 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.70210, B = -885.12, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 1.848

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

CG/CC DEG C CC/MOLE ATM.
.3378 385.55 497.64 28.37

DIFFUSION COEF. = .051 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHYS. CHEM.48.23(1944)  VISCOSITY OF VAPOR = 6.27-03 CENTIPOISE

END OF COMPOUND EA 1274 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1274 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 158.1 GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.55430, B = 266.260, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -29.0 TO 15.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOUR PRESSURE (TORR) = 11.01
ESTIMATED BOILING POINT (CENT.) = 196.2
HEAT OF VAPORIZATION (K ILOCALORIES/ MOLE) = 12.2
VOLATILITY (MG/METER CUBED) = .97 × 10^-4 VOLATILITY (MILLIMOLE/ METER CUBED) = .58 × 10^-2

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0220 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0620 + .00100 * TEMP. (C.) DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 1.332

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3378 365.55 497.64 28.37

DIFFUSION COEFF. = .057 CM. SQ./SFC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.., J.PHY.CHEM, 48, 23 (1944) VISCOSITY OF VAPOR = 6.62-03 CENTIPOISE

END OF COMPOUND EA 1274 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1356 AT THE MELTING POINT IN LIEU OF -40 DEG C

COMMON NAME: FORMULA WEIGHT: 194.2 GENERAL REFERENCE: ARCSL-TR-77001

***** PLEASE NOTE: THE REQUESTED TEMPERATURE IS OVER 25 DEGREES BELOW MELTING POINT. THEREFORE THE PROPERTIES ESTIMATED FOR LIQUIDS AND VAPORS ARE PROVIDED AT THE MELTING POINT OR FREEZING POINT. *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 9.13080, B= 3165.10, C= 278.8 DETERMINED OVER THE TEMPERATURE RANGE -15.0 TO 180.0 DEG. CFNT. REFERENCE: ARCSL-TR-77001

WE WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(Torr)= .34+02
ESTIMATED BOILING POINT(cent.°)= 227.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.9
VOLATILITY(MG./METER CUBED)= .28+02 VOLATILITY(MILLIGRAM/ METER CUBED)= .14+00

DENSITY(G/ML)= 1.1261 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1175 - .00090 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CFNT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.47160, B= -949.86, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CFNT. REFERENCE: ARCSL-TR-77001

WE WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES)= 13.567

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM)= 31.8 AT 25.0 DEG. CFNT. REFERENCE: NB3192
MELTING POINT (DEG. CFNT.)= -9.6 REFERENCE: ARCSL-TR-77001
REFRACTIVE INDEX(ND)= 1.4342 AT 25.0 DEG. CFNT. REFERENCE:
FREEZING POINT (DEG. CFNT.)= -9.60 REFERENCE: NB3392
SOLUBILITY(G/100G SOLVENT) = .150+02 AT 25.0 DEGREE CENTIGRADE REFERENCE: >15 PROPYLENE GLYCOL, CWL2093
SOLUBILITY(G/100G SOLVENT) = .100+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER, EATR-4210

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3449 474.10 563.02 26.45

DIFFUSION COEF. = .035 GM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.94-03 CENTIPoise

END OF COMPOUND EA 1356 AT ~-9.6 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1356 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 194.2 GENERAL REFERENCE: ARCSL-TR-77001
VALID ONLY FOR SUPCOCOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.13089, B = 316.510, C = 278.8 DETERMINED OVER THE
TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = 0.00-03
EVIATM BD BOILING POINT (CENT.) = 227.0
HEAT OF VAPORIZATION (KJ/MOLE) = 13.8
VOLATILITY (G/METER CUBED) = 0.88+01 VOLATILITY (MILLIMOLE/METER CUBED) = 0.51-01
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML): 1.1355 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1175 - 0.00090 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.47160, B = 949.86, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKLS) = 19.079
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (Dynes/CM) = 31.8 AT 25.0 DEG. CENT. REFERENCE: NB3392
MELTING POINT (DEG. CENT.) = -9.6 REFERENCE: ARCSL-TR-77001
REFRACTIVE INDEX (D): 1.4342 AT 25.0 DEG. CENT. REFERENCE:
FREEZING POINT (DEG. CENT.) = -9.60 REFERENCE: NB3392
SOLUBILITY (G/100G SOLVENT) = 0.150+02 AT 25.0 DEGREE CENTIGRADE REFERENCE: >15 PROPYLENE GLYCOL, CWLR2093
SOLUBILITY (G/100G SOLVENT) = 0.100+01 AT 25.0 DEGREE CENTIGRADE REFERENCE: WATER, EATR-4210

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/A CC DEG C CC/MOLE ATM.
15449 474.18 563.02 28.45

DIFFUSION COEF. = .032 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM. 40.23(1944) VISCOSITY OF VAPOR = 4.71-03 CENTIPoise

END OF COMPOUND EA 1356 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1356 AT .0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 194.2 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.13080, B = 3165.10, C = 278.8 DETERMINED OVER THE
TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOUR PRESSURE (TORR) = .60 - 02 ESTIMATED BOILING POINT (CENT.) = 227.6
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.9
VOLATILITY (MG/METER CUBED) = .69 - 02 VOLATILITY (MILLIMOLE/METER CUBED) = .35 - 00
DENSITY (G/ML) = 1.175 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.175 - .00090 • TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.47160, B = -949.86, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 10.135

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 31.8 AT 25.0 DEG. CENT. REFERENCE: NB3392
MELTING POINT (DEG. CENT.) = -9.6 REFERENCE: ARCSL-TR-77001
REFRACTIVE INDEX (NO) = 1.4342 AT 25.0 DEG. CENT. REFERENCE:
PSEUDOPHASE POINT (DEG. CENT.) = - 9.60 REFERENCE: NB3392
SOLUBILITY (G/1000 SOLVENT) = .150 - 02 AT 25.0 DEGREE CENTIGRADE REFERENCE: > 15 PROPYLEN GLYCOL, CWLR2093
SOLUBILITY (G/1000 SOLVENT) = .100 - 01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER, EATR-4210

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC UDG C CC/NOMLE ATM.
.9449 474.18 563.02 28.45

DIFFUSION COEF. = .038 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.15-03 CENTIPoise
SUMMARY OF PROPERTIES OF EA 1356 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: UNKNOWN  FORMULA WEIGHT: 194.2  GENERAL REFERENCE: ARCS1-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.13080, B = 3165.10, C = 278.8 DETERMINED OVER THE TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT.  REFERENCE: ARCS1-TR-77001

WAVE PRESSURE (TORR) = .35-01
ESTIMATED BOILING POINT (CENT.) = 227.6
HEAT OF VAPORIZATION (KiloCalories/Mole) = 13.9
VAPORIZATION (mg/meter cubed) = .37+03
VAPORIZATION (atomic/meter cubed) = .19+01
DENSITY (g/ml) = 1.0995 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1175 - .00090 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCS1-TR-77001

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.47160, B = -949.86, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCS1-TR-77001

WAVE PRESSURE (TORR) = 5.869
ESTIMATED BOILING POINT (CENT.) = 374.0
HEAT OF VAPORIZATION (KiloCalories/Mole) = 1.4342 AT 25.0 DEG. CENT.  REFERENCE: N8392
VAPORIZATION (mg/meter cubed) = .150+02
VAPORIZATION (atomic/meter cubed) = .86+00

SOLUBILITY (g/100g SOLVENT) = .150+02 AT 25.0 DEGREE CENTIGRADE  REFERENCE: >15 PPOLYOLE GLYCOL, CWL2093
SOLUBILITY (g/100g SOLVENT) = .100+01 AT 20.0 DEGREE CENTIGRADE  REFERENCE: WATER, EATR-4210

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ***

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
0.0449 474.18 563.02 28.45

DIFFUSION COEF. = .045 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQUATION.  J. PHYS. CHEM. 68, 23 (1944)  VISCOSITY OF VAPOR = 5.60-03 CENIPOISE

END OF COMPOUND EA 1356 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1356 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 194.2 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EAIR 44911): A = 9.13080, B = 3165.10, C = 276.8 DETERMINED OVER THE
TEMPERATURE RANGE -15.0 TO 100.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (kPa) = 52.01
ESTIMATED BOILING POINT (CENT.) = 227.6
HEAT OF VAPORIZATION (KCALAMOLES/ML) = 13.9
VOLATILITY (ML/DEG. CUBED) = .54003 VISCOSITY (ML/METER CUBED) = .28401

DENSITY (G/ML) = 1.0950 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1175 - .00090 *TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EAIR 4491): A = -2.47160, B = -949.86, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST/STOKES) = 5.179

SURFACE TENSION (DYNES/CM) = 31.8 AT 25.0 DEG. CENT. REFERENCE: NBS392
MELTING POINT (DEG. CENT.) = -9.6 REFERENCE: ARCSL-TR-77001
REFRACTIVE INDEX (NO) AT 25.0 DEG. CENT. REFERENCE:
FREEZING POINT (DEG. CENT.) = -9.60 REFERENCE: NBS392

Solubility (G/100G SOLVENT) = .150+02 AT 25.0 DEGREE CENTIGRADE REFERENCE: >15 PROPYLENE GLYCOL, CWLR2093
SOLUBILITY (G/100G SOLVENT) = .100+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER, EATR-4210

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. CHURNS. FIZ KHIM. 37. 201 (1963).
DENSITY TEMPERATURE VOLUME PRESSURE
8.49 474.18 563.02 28.49

diffusion coeff. = 0.046 CM2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU. J. PHYS. CHEM. 44, 231 (1940) VISCOSITY OF VAPOR = 5.71-03 CENTIPOISE

END OF COMPOUND EA 1356 AT 25.0 DEGREES C. PAGE NUMBER 8-173
SUMMARY OF PROPERTIES OF EA 1356 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 194.2
GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A* = 9.13000, B* = 3165.10, C* = 278.8 DETERMINED OVER THE
TEMPERATURE RANGE -15.0 TO 180.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 160+00
ESTIMATED BOILING POINT(CENT.) = 227.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.0
VOLATILITY(MG/METER CUBED) = .16+04 VOLATILITY(MILLIMOLE/METER CUBED) = .82+01

DENSITY(G/ML) = 1.0815 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1175 - .00090 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 3.645

SURFACE TENSION (DYNES/CM) = 31.8 AT 25.0 DEG. CENT. REFERENCE: NB3392
MELTING POINT (DEG. CENT.) = -9.6 REFERENCE: ARCSL-TR-77001
REFRACTIVE INDEX(IND.) = 1.4342 AT 25.0 DEG. CENT. REFERENCE:
FREEZING POINT (DEG. CENT.) = -9.60 REFERENCE: NB3392
SOLUBILITY(G/100G SOLVENT) .150+02 AT 25.0 DEGREE CENTIGRADE REFERENCE: >15 PROPYLENE GLYCOL, CMR2093
SOLUBILITY(G/100G SOLVENT) .100+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: WATER, EATR-4210

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/L/CC DEG C CC/NOLE ATM.
.3449 474.18 563.02 28.45

DIFFUSION COEF. = .052 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.05-03 CENTIPoise

END OF COMPOUND EA 1356 AT 40.0 DEGREES C. PAGE NUMBER B-174
SUMMARY OF PROPERTIES OF EA 1508 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: VG
FORMULA WEIGHT: 269.3
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID \& PERCOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGE MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.1025 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0675 + .00087 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.
REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -4.83209, B = -187.39, C = 99.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.
REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 213.433

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 31.0 AT 25.0 DEG. CENT.
REFERENCE: CWLR 2346

REFRACTIVE INDEX(ND) = 1.4658 AT 25.0 DEG. CENT.
REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GAS/CC DEG C CC/MOLE ATM.
.3305 463.50 814.71 19.38

DIFFUSION COEF = .020 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)

VISCOITY OF VAPOR = 3.96-03 CENTIPoise

END OF COMPOUND EA 1508 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1508 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: VO  FORMULA WEIGHT: 209.3  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
     BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
     A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML):  1.0950 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0675 - .00087 * TEMP.(C.) DETERMINED OVER
     THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATH 449!): A= -.83209, B= -187.39, C= 99.3 DETERMINED OVER THE
     TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

     WE WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 34.017

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 31.0 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

REFRACTIVE INDEX(INCLUD)= 1.4658 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201(1963):

DENSITY TEMPERATURE VOLUME PRESSURE
G/M CC DEG C CC/HOLE ATM.
4.305  463.50  214.71  19.38

DIFFUSION COEF. = .025 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQN., J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 4.37-03 CENTIPoise

END OF COMPOUND EA 1508 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1508 AT .0 DEGREES CENTIGRADE

COMMON NAME: VG FORMULA WEIGHT: 269.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0675 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0675 -.00087 * TEMPERATURE
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.83209, B = -187.39, C = 99.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WE USED AN EQUATION TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 11.363

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 31.0 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346
REFRACTIVE INDEX(ND) = 1.4058 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV. ZHURN. FIZ KHIM. 37, 20'(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GR/CC DEG. C. CC/MOLE ATM.
.3305 463.50 814.71 19.38

DIFFUSION COEFF. = .029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.79-03 CENTIPoise

END OF COMPOUND EA 1508 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1508 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: VG  FORMULA WEIGHT: 209.3  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(ML/GR)= 1.0460 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0675 - .00087 * TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.83209, B= -187.39, C= 99.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 5.483

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM)= 31.0 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

REFRACTIVE INDEX(IND)= 1.4058 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIIM. 37, 201(1963)

DENSITY  TEMPERATURE  VOLUME  PRESSURE
0.7/CC  DEG C  CC/MOLE  ATM.
1.3353  463.50  814.71  19.38

DIFFUSION COEF.= .034 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 5.20-03 CENTIPOISE

END OF COMPOUND EA 1508 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1508 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: VG  FORMULA WEIGHT: 269.3  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0156 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0675 - .00087 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.83209, B = -187.39, C = 99.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 4.740

SURFACE TENSION (DYNES/CM) = 31.0 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

REFRACTIVE INDEX(ND) = 1.4658 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CC/CC  DEG C  CC/MOLE  ATM.
.5305  463.50  614.71  19.38

DIFFUSION COEF. = .035 CM2-SO./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.31-03 CENTIPoise

END OF COMPOUND EA 1508 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1508 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: VG  FORMULA WEIGHT: 269.3  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) =  1.0325 WAS CALCULATED FROM THE EQUATION: DENSITY =  1.0675 - .00087 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) =  3.281

SURFACE TENSION (DYNES/CM) =  31.0 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

REFRACTIVE INDEX(ND) =  1.4658 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIIM. 37. 201(1963)

DENSITY TEMPERATURE  VOLUME  PRESSURE
G2/CC  DEG C  CC/MOLE  ATM.
.3305  463.50  814.71  19.38

DIFFUSION COEF. = .039 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.62-03 CENTIPoise

END OF COMPOUND EA 1508 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0699 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 - .00072 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.28010, B = -262.41, C = 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )= **********

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 30.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GJ/CC DEG C CC/MOLE ATM.
.3132 573.99 949.16 19.13

DIFFUSION COEF. = .018 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,29(1944)  VISCOSITY OF VAPOR = 3.39-03 CENTIPOISE

END OF COMPOUND EA 1511 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: VP
FORMULA WEIGHT: 297.3
GENERAL REFERENCE: CWLR 2346

****** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE ******

****** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0555 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 - .00072 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE FOLLOWING ANTONIO CONSTANTS(EATR 4491): A = -1.26010, B = -282.45, C = 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3763.170

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

SURFACE TENSION (DYNES/CM) = 30.4 AT 25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
.3132 573.99 949.16 19.13

DIFFUSION COEF. = .022 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM. 48.231 (1944)  VISCOITY OF VAPOR = 3.76-03 CENTIPOISE

END OF COMPOUND EA 1511 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT .0 DEGREES CENTIGRADE
COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0411 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 - .00072 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.26010, B = -282.45, C = 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 219.852

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 30.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
90.3 573.99 949.16 13.9

DIFFUSION COEF. = .026 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48, 23(1944) VISCOSITY OF VAPOR = 4.12-03 CENTIPoise

END OF COMPOUND EA 1511 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0267 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 - .00072 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCES: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTONINE CONSTANTS (EATR 4491): A = -1.26010, B = -282.45, C = 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 40.42

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNE/CM) = 30.4 AT 25.0 DEG. CENT. REFERENCES: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHEI. 37. 201 (1963)

CRITICAL TEMPERATURE VOLUME PRESSURE
CM/CC DEG. C CC/NOLE ATM.
.3132 .573.99 .949.16 19.13

DIFFUSION COEF. = .030 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48.23 (1944) VISCOSITY OF VAPOR = 4.49-03 CENTIPOISE

END OF COMPOUND EA 1511 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML)= 1.0231 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0411 - .00072 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.26010, B= 292.45, C= 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )= 29.599

SURFACE TENSION (DYNES/CM) = 30.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3132 573.99 949.16 19.13

DIFFUSION COEF. = .031 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.58-03 CENTIPOISE

END OF COMPOUND EA 1511 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1511 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: VP FORMULA WEIGHT: 297.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0123 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0411 -.00072 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.26010, B = 282.45, C = 78.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 13.343

SURFACE TENSION (DYNE/SQM) = 30.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHiM. 37, 201 (1983)

CRITICAL TEMPERATURE CRITICAL PRESSURE

573.97 K 393.14 ATM

DIFFUSION COEF. = .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23 (1944) VISCOSITY OF VAPOR = 4.86-03 CENTIPOISE

END OF COMPOUND EA 1511 AT 40.0 DEGREES C.
**SUMMARY OF PROPERTIES OF EA 1517 AT -40.0 DEGREES CENTIGRADE**

**COMMON NAME:** VE  
**FORMULA WEIGHT:** 253.3  
**GENERAL REFERENCE:** CWLR 2346

**WARNING:** SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

**WARNING:** SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

**DENSITY (G/ML) = 1.0739 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - 0.00066 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**WARNING:** THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

**THE FOLLOWING ANTOINE CONSTANTS (EATR 4491):** A = -299.85, B = -205.35, C = 98.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**WERE USED TO CALCULATE THE VISCOSITY**

**VISCOSITY (CENTISTOKES) = 391.193**

**WARNING:** THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

**THE EQUATION: SURFACE TENSION (DYNES/CM) = 31.6000 - 0.0895 * TEMP.(C.)**

**DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346**

**WERE USED TO CALCULATE THE SURFACE TENSION 35.4 DYNES/CM**

**WARNING:** THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

**FLASH POINT, MCCUTCHEON-YOUNG (CENTIGRADE) = 157.0**

**REFERENCE:** CWLR 2346

**THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV:**

**ZHURN. FIZ. KHIM. 37, 291 (1963)**

**DENSITY TEMPERATURE PRESSURE**

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<thead>
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<th>G3/CC</th>
<th>DEG C</th>
<th>CC/MOLE</th>
<th>ATM.</th>
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</thead>
<tbody>
<tr>
<td>0.3224</td>
<td>457.93</td>
<td>785.61</td>
<td>19.94</td>
</tr>
</tbody>
</table>

**DIFFUSION COEF. = .021 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR**

**THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PH. CHEM. 48, 23 (1944)**

**VISCOSITY OF VAPOR = 3.96 - 03 CENTIPOISE**

**END OF COMPOUND EA 1517 AT -40.0 DEGREES C.**
SUMMARY OF PROPERTIES OF EA 1517 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: VE FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML)= 1.0987 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0395 - .00086 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -29293, B= -205.35, C= 98.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 49.288

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 31.8000 - .0895*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 33.6 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEON-YOUNG(CEMTIGRADE)= 157.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE ATM.

.3224 457.93 785.61 19.94

DIFFUSION COEF. = .025 CM/SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1517 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1517 AT .0 DEGREES CENTIGRADE
COMMON NAME: VE FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOSYS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/L)= 1.095 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0395 -.00086*TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.9006, B= -205.35, C= 98.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKE)= 14.426

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 31.8060 - .0095*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 31.8 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCC/AN-YOUNG (CENTIGRADE)= 157.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/MOLE ATM.
.3224 457.93 785.61 - 19.94

DIFFUSION COEF. = .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHYS.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.78-03 CENTIPOISE

END OF COMPOUND EA 1517 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1517 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: VE FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0223 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - .00086 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -92983, B = -205.35, C = 98.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 6.397

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 31.8000 - .0895*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.0 DYNES/CM

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ****

FLASH POINT, MCCUTCHEON-YOUNG (CENTIGRADE) = 157.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPPOV, ZHURN. FIZ KIM, 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3224 457.93 765.61 19.94

DIFFUSION COEF. = .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM, 48,23(1944) VISCOSITY OF VAPOR = 5.20-03 CENTIPoise

END OF COMPOUND EA 1517 AT 20.0 DEGREES C.

PAGE NUMBER 8-190
SUMMARY OF PROPERTIES OF EA 1517 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: VE FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0180 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - .00086*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -92983, B = -205.35, C = 98.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY;

VISCOSITY(CENTISTOKES) = 5.440

THE EQUATION: SURFACE TENSION(DYNE/CM) = 31.8000 - .0895*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 29.6 DYNE/CM

FLASH POINT, MCCUTCHEAN-YOUNG(centigrade) = 157.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3224 457.93 785.61 19.94

DIFFUSION COEF. = .036 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN., J. PHYS. CHEM. 48, 23(1944) VISCOSITY OF VAPOR = 5.30-03 CENTIPOISE

END OF COMPOUND EA 1517 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1517 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: VE FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0051 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0395 - 0.00096 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -0.92583, B = -205.35, C = 98.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.989

THE EQUATION: SURFACE TENSION (DYNES/CM) = 31.6000 - 0.0895 * TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 28.2 DYNES/CM

FLASH POINT, MCCUTCHEON-YOUNG (CENTIGRADE) = 157.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOD
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
0.3224 457.93 785.61 19.94

DIFFUSION COEF. = 0.040 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.61-93 CENTIPoise

END OF COMPOUND EA 1517 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1576 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:          FORMULA WEIGHT:  304.3          GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.1383 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - 00065 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE  25.0 TO  50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.01294, B= -259.43, C = 84.0 DETERMINED OVER THE
TEMPERATURE RANGE  25.0 TO  50.0 DEG. CENT.  REFERENCE:CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOCHES ) = 76612.679

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNS/CM) =  32.4 AT  25.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
     .3342  50.99  899.65  18.44

DIFFUSION COEF. = 0.019 CM^SQR./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 3.80-03 CENTIPOISE

END OF COMPOUND EA 1576 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1576 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 304.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.1012 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - .00085 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.01294, B = -259.43, C = 84.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1099.475

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 32.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/A/CC DEG C CC/WOLE ATM.
.3382 509.99 899.65 18.44

DIFFUSION COEF. = .023 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 23 (1944) VISCOSITY OF VAPOR = 4.20-03 CENTIPoise

END OF COMPOUND EA 1576 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1576 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 304.3 GENERAL REFERENCE: CWLR 2349

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (g/ml) = 1.1042 was calculated from the equation: 

\[ \text{Density} = 1.1042 - 0.00095 \times \text{Temp.} \text{c.} \] 

determined over the temperature range 25.0 to 50.0 deg. cent. Reference: CWLR 2348

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.01294, B = -259.43, C = 84.0 determined over the temperature range 25.0 to 50.0 deg. cent. Reference: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 119.077

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNES/CM) = 32.4 at 25.0 deg. cent. Reference: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

<table>
<thead>
<tr>
<th>PROPERTY</th>
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<tbody>
<tr>
<td>DENSITY</td>
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<tr>
<td>TEMPERATURE</td>
<td>25.0 - 50.0 deg. cent.</td>
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<tr>
<td>PRESSURE</td>
<td>899.65 atm</td>
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<td>VOLUME</td>
<td>500.99</td>
</tr>
<tr>
<td>DEG C</td>
<td>.3382</td>
</tr>
</tbody>
</table>

DIFFUSION COEF. = 0.27 cm. sq./sec calculated for vapor in air


VISCOSITY OF VAPOR = 4.61-03 CENTIPOISE

END OF COMPOUND EA 1576 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA AT 20.0 DEGREES CENTIGRADE

COMMON NAME: SAZOL
A WEIGHT: 304.3

GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT OF THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID TEMPERATURES TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0972 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - .00085 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EAIR 4491): A = -1.01294, B = -259.43, C = 84.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 30.324

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SURFACE TENSION (DYNE/CM) = 32.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV, ZHURN. FIZ KHM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G^/CC DEG C CC/MOLE ATM.
.3382 500.99 899.65 18.44

DIFFUSION COEF. = .031 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQUATION. J. PHYS. CHEM., 48, 23 (1944)

VISCOSITY OF VAPOR = 5.01-03 CENTIPoise

END OF COMPOUND EA 1576 AT 20.0 DEGREES C.

PAGE NUMBER B-196
SUMMARY OF PROPERTIES OF EA 1576 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:               FORMULA WEIGHT: 304.3  GENERAL REFERENCE: CWLR 2346

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
   BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
   A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0299 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - 0.00085 * TEMP. (C.) DETERMINED OVER
   THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.01294, B = -259.43, C = 84.0 DETERMINED OVER THE
   TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 23.299

SURFACE TENSION (DYNES/CM) = 32.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37, 201(1963)

DENSITY TEMPERATURE  VOLUME PRESSURE
G/M3/CC  DEG C  CC/MOLE  ATM.
1.3382  500.99  899.65  18.44

DIFFUSION COEFF. = .033 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
   MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48, 23(1944)  VISCOSITY OF VAPOR = 5.11-03 CENTIPoise

END OF COMPOUND EA 1576 AT 25.0 DEGREES C.
**SUMMARY OF PROPERTIES OF EA 1576 AT 40.0 DEGREES CENTIGRADE**

**COMMON NAME:**

**FORMULA WEIGHT:** 304.3

**GENERAL REFERENCE:** CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGE MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

**DENSITY (G/ML) =** 1.0701 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1042 - .00095 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**THE FOLLOWING ANTOINE CONSTANTS (EATR 4491):**

A = -1.01294, B = -259.43, C = 84.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**WERE USED TO CALCULATE THE VISCOSITY**

**VISCOSITY (CENTISTOKES) =** 12.006

**SURFACE TENSION (DYNES/CM) =** 32.4 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346

**THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.**

**ZHURN. FIZ KHM. 37. 201 (1963)**

**DIFFUSION COEF. =** .036 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


**VISCOITY OF VAPOR = 5.41-03 CENTIPOISE**

END OF COMPOUND EA 1576 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: C.WLR 2346
FORMULA WEIGHT: 253.3
GENERAL REFERENCE: C.WLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCROCS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0029 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C.WLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02159, B = -227.26, C = 100.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C.WLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 522.261

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/SQM) = 31.5000 - .0689*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: C.WLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 34.3 DYNE/SQM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
37.93 421.97 771.53 19.31

DIFFUSION COEF. = .021 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1622 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS
COMPOND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS
COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0445 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02159, B = -227.28, C = 100.8 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 61.941

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3283 421.97 771.53 19.31

DIFFUSION COEF. = .026 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.231(1944) VISCOSITY OF VAPOR = 4.58-03 CENTIPOISE

END OF COMPOUND EA 1622 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT 0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0461 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092*TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02159, B = -227.28, C = 100.8 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 17.123

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ'KHIM. 37, 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GU/CC DEG C CC/MOLE ATM.
.3283 421.97 771.53 19.31

DIFFUSION COEF. = .030 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,231 (1944) VISCOSITY OF VAPOR = 5.01-03 CENTIPOISE

END OF COMPOUND EA 1622 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 253.3

GENERAL REFERENCE: CWL R 2346

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0277 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL R 2346

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02159, B = -227.26, C = 100.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL R 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 7.247

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 31.5000 - .0669 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL R 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.1 DYNES/CM

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURM. FIZ KHIM. 37. 201(1963)

DIFFUSION COEF. = .0035 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48.23(1944)

VISCOITY OF VAPOR = 5.44-03 CENTIPoise

END OF COMPOUND EA 1622 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: M-Q C

FORMULA WEIGHT: 253.3

GENERAL REFERENCE: CWLR 2346

*** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ***

*** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0231 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.02159, B = -227.26, C = 100.8 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 6.100

THE EQUATION: SURFACE TENSION(DYNES/CM) = 31.5000 - .0689 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 23.8 DYNES/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
3283 421.97 771.53 19.31

DIFFUSION COEF. = .037 CM^2/SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,231(1944)

VISCOSITY OF VAPOR = 5.55-03 CENTIPOISE

END OF COMPOUND EA 1622 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1622 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 253.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0093 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0461 - .00092 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.02159, B= -227.26, C = 100.8 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE:CWLR2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 3.916

THE EQUATION: SURFACE TENSION(DYNES/CM)= 31.5000 -.0689*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 28.7 DYNES/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DESIETY TEMPERATURE VOLUME PRESSURE
G3/CC DEG C CC/MOLE ATM.
.3283 421.97 771.53 19.31

DIFFUSION COEF. = .041 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.87-03 CENTIPOISE

END OF COMPOUND EA 1622 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1664 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: VM FORMULA WEIGHT: 239.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(EMBER) = .21-02 AT 25.0 DEG. CENT. REFERENCE:
DENSITY(G/ML) = 1.0340 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0495 - .00086.*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4481): A = -1.01361, B = -232.85, C = 106.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOITY(CENTSTOKES) = 310.945

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 33.9315 - .1063*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR2346
WERE USED TO CALCULATE THE SURFACE TENSION 38.2 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEAN-YOUNG(CENTIGRADE) = 236.0 REFERENCE: NB 4812 P 79

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3252 481.97 735.94 21.39

DIFFUSION COEF. = .022 CM.50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J.PHY.Chem.48,23(1944) VISCOSITY OF VAPOR = 4.00-03 CENTPOISE

END OF COMPOUND EA 1664 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1664 AT -20.0 DEGREES CENTIGRADE
COMMON NAME:  VM  FORMULA WEIGHT:  239.3  GENERAL REFERENCE: CWLR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCLEANS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR)= .21-02 AT 25.0 DEG. CENT.  REFERENCE:
DENSITY(G/ML)= 1.6668 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0495 -.00088 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE:CWLR 2346
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.01361, B= -232.85, C= 106.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE:CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES )= 40.714
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 4.42-03 CENTIPoise

END OF COMPOUND EA 1664 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1664 AT .0 DEGREES CENTIGRADE
COMMON NAME: VM FORMULA WEIGHT: 239.3.
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .21-02 AT 25.0 DEG. CENT. REFERENCE:
DENSITY (G/ML) = 1.0495 WAS CALCULATED FROM THE EQUATION: DENSITY = .0495 -.00086 TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4481): A = -1.01361, B = -232.85, C = 106.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 15.099

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 33.9315 -.1063 TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR2346
WERE USED TO CALCULATE THE SURFACE TENSION 33.9 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEAN-YOUNG (CENTIGRADE) = .236.0 REFERENCE: NB 4612 P 79

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DIFFUSION COEFF. = .031 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23 (1944) VISCOSITY OF VAPOR = 4.84-03 CENTIPoise

END OF COMPOUND EA 1664 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1664 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: VM FORMULA WEIGHT: 239.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCORES TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOUR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = .21-02 AT 25.0 DEG. CENT.
REFERENCE:
DENSITY (G/ML) = 1.0322 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0495 - .00086 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.
REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.01361, B = -232.85, C = 106.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 6.784

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 33.3315 - .1063 * TEMP. (C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.
REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 31.0 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEON-YOUNG (CENTIGRADE) = 238.0 REFERENCE: NB 4612 P 79

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37, 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.5252 461.57 735.94 21.39

DIFFUSION COEF. = .037 CM^2/SEC CALCULATED FOR VAPOUR IN AIR

THE VISCOSITY OF THE VAPOUR WERE ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J. PHYS. CHEM. 58, 23 (1944) VISCOSITY OF VAPOUR = 8.26-03 CENITPOISE

END OF COMPOUND EA 1664 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1864 AT 25.0 DEGREES CENTIGRADE
COMMON NAME:  VM  FORMULA WEIGHT: 239.3  GENERAL REFERENCE: CWLO 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE(TORR) = 0.21-02 AT 25.0 DEG. CENT.  REFERENCE:
DENSITY(G/M.L) = 1.0279 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0495 - .00086 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL R 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.01361, B = -232.85, C = 106.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL R 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CEI TISTOKES) = 5.770

THE EQUATION: SURFACE TENSION(DYNE/S CM) = 33.9315 - .1063 *TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL R 2346
WERE USED TO CALCULATE THE SURFACE TENSION 31.3 DYNE/S CM

FLASH POINT, MCCUTCHAN-YOUNG(CEI TIGRADE) = 236.0 REFERENCE: NB 4812 P 79

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
.3252 461.57 735.94 21.39

DIFFUSION COEF. = .038 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.36-03 CENTIPOISE

END OF COMPOUND EA 1864 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1664 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: VM FORMULA WEIGHT: 239.3 GENERAL REFERENCE: CWLR 2346

**** WARNING: SIMPLIFIED BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING INT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

VAPOR PRESSURE (TORR) = 0.21-02 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346
DENSITY (G/ML) = 1.0150 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0495 - .00086 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING CONSTANTS (EATR 4491): A = -1.01361, B = -232.85, C = 108.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CST) = 3.794

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
0.3252 461.57 735.91 21.39

DIFFUSION COEF. = 0.042 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM. 48. 23 (1944) VISCOSITY OF VAPOR = 5.68-03 CENTIPOISE

END OF COMPOUND EA 1664 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1677 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: VS FORMULA WEIGHT: 281.4

GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0493 WAS CALCULATED FROM THE EQUATION:

\[ \text{DENSITY} = 1.0215 - 0.00080 \times \text{TEMP.(C.)} \]

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -79135, B = -190.74, C = 83.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

\[ \text{VISCOSITY} = 4194.138 \]

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEAN-YOUNG (CENTIGRADE) 168.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

\[ \begin{array}{llll}
GJ/CC & \text{DEG} C & \text{CC/MOLE} & \text{ATM} \\
5134 & 494.72 & 897.75 & 19.33 \\
\end{array} \]

DIFFUSION COEF. = .019 CM²/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48,23(1944)

VISCOITY OF VAPOR = 3.68-03 CENTPOISE

END OF COMPOUND EA 1677 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1677 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: RV FORMULA WEIGHT: 281.4

GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.074 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 - .00080 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -70135, B = -190.74, C = 83.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY VISCOSITY (CENTISTOKE) = 168.294

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNE/CM) = 32.3000 - .0037 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 34.0 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEON-Young (CENTIGRADE) = 168.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURIL. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
.3134 494.72 897.75 18.33

DIFFUSION COEF. = .023 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN. J. PHYL. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 4.07-03 CENTIPoise

END OF COMPOUND EA 1677 AT -20.0 DEGREES C. PAGE NUMBER B-212
SUMMARY OF PROPERTIES OF EA 1677 AT .0 DEGREES CENTIGRADE
COMMON NAME: VS FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DESIYTY (G/ML) = 1.0215 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 - .00080 TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.79135, B= -190.74, C= 83.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 31.683

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.3000 - .0837*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION = 32.3 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 168.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3134 494.72 897.75 18.33

DIFFUSION COEF. = .027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM. 40, 283(1944)

VISCOITY OF VAPOR = 4.43-03 CENTIPoise

END OF COMPOUND EA 1677 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1677 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: VS FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUE CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0056 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 - .00080 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.79135, B = -190.74, C = 83.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 11.394

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 32.3000 - .0837* TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.6 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEON-YOUNG(CENTIGRADE) = 168.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G5/CC DEG C CC/MOLE ATM.
.3134 494.72 897.75 18.33

DIFFUSION COEF. = .032 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR


END OF COMPOUND EA 1677 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1677 AT 25.0 DEGREES CENTIGRADE  
COMMON NAME: WC FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWIR 2346  
****** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******  
****** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL  

DENSITY (G/ML) = 1.0216 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 - .00080 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWIR 2346  

THE FOLLOWING ANTOINE CONSTANTS(EAIR 4491): A = -79135, B = -190.74, C = 83.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWIR 2346  

WAS USED TO CALCULATE THE VISCOSITY  
VISCOITY (CENTISTOKES) = 9.360  

THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.3000 - .0837*TEMP.(C.)  
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWIR 2346  

WAS USED TO CALCULATE THE SURFACE TENSION  
30.2 DYNES/CM  
FLASH POINT, MCGUICHEN-YOUNG (CENTIGRADE) = 168.0 REFERENCE: CWIR 2346  

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  
ZHURN. FIZ. KHIM. 37. 201 (1963)  
DENSITY TEMPERATURE PRESSURE  
GM/CC DEC C CC/MOLE ATM.  
9.3134 494.72 697.75 18.33  

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR  

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY. CHEM. 48.23 (1944)  
VISCOITY OF VAPOR = 4.95-03 CENTIPOISE  

END OF COMPOUND EA 1677 AT 25.0 DEGREES C.  

PAGE NUMBER B-215
SUMMARY OF PROPERTIES OF EA 1877 AT 40.0 DEGREES CENTIGRADE

**WARNING:** SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE

**WARNING:** SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL.

**DENSITY (G/ML) =** 0.9497 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0215 - .00090 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCES: CWL 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 579.135, B = -190.74, C = 83.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCES: CWL 2346

WERE USED TO CALCULATE THE VISCOSITY

**VISCOSITY (CENTISTOKES) =** 5.711

**THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.3000 - .0827 * TEMP. (C.)**

**DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.** REFERENCES: CWL 2346

WERE USED TO CALCULATE THE SURFACE TENSION 29.0 DYNES/CM

**FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 168.0** REFERENCES: CWL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. **ZHRNM. FIZ KHM. 37. 201 (1963)**

**DENSITY TEMPERATURE VOLUME PRESSURE**

**GW/CC** **DEG C** **CC/MOLE** **ATM.**

.3134 494.72 097.75 18.33

**DIFFUSION COEF. =** .036 **CM. SQ./SEC** CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J. PHY. CHEM. 48, 23 (1944)

**VISCOSITY OF VAPOR = 5.24-03 CENTIPOISE**

END OF COMPOUND EA 1877 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1694 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 225.2 
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE 
A BOILING POINT, THE VALUES CALculated ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL 

DENSITY(G/ML) = 1.1017 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0670 - .00087 *TEMP.(C.) DETERMINED OVER 
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. 
REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.80785, B = -166.71, C = 88.2 DETERMINED OVER THE 
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. 
REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 635.686

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 32.5000 - .0647 *TEMP.(C.) 
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. 
REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 35.1 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE 
GM/CC DEG C CC/MOLE ATM. 
.3299 466.07 692.56 23.27

DIFFUSION COEF. = .023 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.49.231(1944) 
VISCOsITY OF VAPOR = 4.06-03 CENTIPoise

END OF COMPOUND EA 1694 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1694 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 225.2 GENERAL REFERENCE: CWR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0844 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0870 -.00087 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.80765, B = -166.71, C = 86.2 DETERMINED OVER 115F TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTISTOKES) = 51.502

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION. SURFACE TENSION(DYNE/CM) = 32.5000 -.0647*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346 WERE USED TO CALCULATE THE SURFACE TENSION 33.8 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DIFFUSION COEF. = .028 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.48-03 CENTIPOISE

END OF COMPOUND EA 1694 AT -20.0 DEGREES C.

PAGE NUMBER B-218
SUMMARY OF PROPERTIES OF EA 1694 AT .0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT:  225.2  GENERAL REFERENCE:  CWLR 2346

**** WARNING:  SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

**** WARNING:  SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0670 WAS CALCULATED FROM THE EQUATION:  DENSITY = 1.0670 - .00087 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE  25.0 TO  50.0 DEG. CENT.  REFERENCE: CWLR 2346

**** WARNING:  THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A= -.80765,  B= -166.71,  C= 06.2 DETERMINED OVER THE
TEMPERATURE RANGE  25.0 TO  50.0 DEG. CENT.  REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES ) = 13.398

**** WARNING:  THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION:  SURFACE TENSION(DYNE/CM) = 32.5000 - .0647*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE  25.0 TO  50.0 DEG. CENT.  REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION  32.5 DYNE/CM

**** WARNING:  THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ. KHM. 37.  201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC  DEG C  CC/MOLE  ATM.
.3299  469.07  692.56  23.27

DIFFUSION COEF. = .035  CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ..  J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 4.91-03 CENTIPOISE

END OF COMPOUND EA 1694 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1694 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 225.2
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(8/ML) = 1.0496 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0670 - .00087 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.80785, B = -166.71, C = 86.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 5.789

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 32.5000 - .0647*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION
31.2 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

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DIFFUSION COEF. = .039 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J. PHY. CHEM, 48, 231(1944)

VISCOSITY OF VAPOR = 6.33-03 CENTIPoise

END OF COMPOUND EA 1694 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1694 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT: 225.2  
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0453 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0670 - .00087 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.80765, B = -166.71, C = 86.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENSTOKES) = 4.920

THE EQUATION: SURFACE TENSION(DYNE/SQM) = 32.5000 - .0647*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.9 DYNE/SQM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C  CC/WDLE ATM.
32.99  468.07  682.56  23.27

DIFFUSION COEF. = .040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 5.44-03 CENTIPOISE

END OF COMPOUND EA 1694 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1694 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 225.2  GENERAL REFERENCE: CWL 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0323 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0670 - .00007 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.80765, B = -166.71, C = 86.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.263

THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.5000 - .0647 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL 2346

WERE USED TO CALCULATE THE SURFACE TENSION 29.9 DYNES/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
Gm/CC DEG C CC/MOLE ATM.
.3299 468.07 682.56 23.27

DIFFUSION COEF. = .045 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.76-03 CENTIPoise

END OF COMPOUND EA 1694 AT 40.0 DEGREES C. PAGE NUMBER B-222
SUMMARY OF PROPERTIES OF EA 1693 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 211.3 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.12770, B = 3230.30, C = 260.7 DETERMINED OVER THE
TEMPERATURE RANGE 42.0 TO 180.0 DEG. CENT. REFERENCE: MB 9258

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .31-05
ESTIMATED BOILING POINT( CENT. )= 256.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 10.6
VOLATILITY(MG/METER CUBED)= .45-01 VOLATILITY(MILLIMOLE/METER CUBED)= .21-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1173 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0820 - .000088 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -226.22, C = 103.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES ) = 341.651

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 33.7000 - .0916 * TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 37.4 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIEM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.2338 466.14 631.18 25.10

DIFFUSION COEF. = .025 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY. CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.15-03 CENT IPOISE

END OF COMPOUND EA 1699 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1699 AT -20.0 DEGREES CENTIGRADE
COMMON NAME:  a.
FORMULA WEIGHT:  211.3
GENERAL REFERENCE:  CWR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.12770, B = 3230.30, C = 280.7 DETERMINED OVER THE
TEMPERATURE RANGE 42.0 TO 100.0 DEG. CENT. REFERENCE: CWR 9286
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .51-64
ESTIMATED BOILING POINT(CE.HT.) = 256.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.3
VOLATILITY(MG/METER CUBED) = .68-00
VOLATILITY(MILLIMOLE/ METER CUBED) = .32-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0997 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - .00086 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -228.22, C = 103.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 47.500

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 33.7000 - .0916*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 35.5 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 21(1963)

Table

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DIFFUSION COEF. = .030 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHYS. CHEM., 40, 23(1944)

VISCOITY OF VAPOR = 4.58-03 CENTIPoise

END OF COMPOUND EA 1699 AT -20.0 DEGREES C.

PAGE NUMBER B-224
SUMMARY OF PROPERTIES OF EA 1699 AT .0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT:  211.3  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.12770, B = 3230.30, C = 260.7 DETERMINED OVER THE
TEMPERATURE RANGE 42.0 TO 180.0 DEG. CENT.  REFERENCE: MB 9298

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .55-03
ESTIMATED BOILING POINT(CENT.) = 256.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.2
VOLATILITY(MG/METER CUBED) = .68-01
VOLATILITY(MILLIMOLE/ METER CUBED) = .32-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0820 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - .00088 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -226.22, C = 103.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 14.173

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/SQM) = 33.7000 - .0816*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 33.7 DYNE/SQM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G3/CC DEG C CC/MOLE ATM.
.334R 466.14 631.18 25.10

DIFFUSION COEF. = .035 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.02-03 CENITPOISE

END OF COMPOUND EA 1699 AT .0 DEGREES C.  PAGE NUMBER B-225
SUMMARY OF PROPERTIES OF EA 1699 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 211.3 GENERAL REFERENCE: CWLR 2346

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.12770, B = 3220.30, C = 290.7 DETERMINED OVER THE TEMPERATURE RANGE 42.0 TO 100.0 DEG. CENT. REFERENCE: MB 99258
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .52-02
ESTIMATED BOILING POINT(CENT.) = 256.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.1
VOLATILITY(MG/METER CUBED) = .48+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .23+00

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0643 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - .00088 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 6.259

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -226.22, C = 103.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

THE EQUATION: SURFACE TENSION(DYNES/CM) = 33.7000 - .0916*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION

31.9 DYNES/CM

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.8348 466.14 631.18 25.10

DIFFUSION COEF. = .041 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,231(1944) - VISCOSITY OF VAPOR = 5.45-03 CENTIPOISE

END OF COMPOUND EA 1699 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1699 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 211.3 
GENERAL REFERENCE: CWLR 2346

----- WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT 
BE VALID UNLESS LIQUID SUPERCritical TO SPECIFIED TEMPERATURE ----- 
The following Antoine constants(EATR 4491): A = 9.12770, B = 3230.30, C = 260.7 DETERMINED OVER THE 
TEMPERATURE RANGE 42.0 TO 160.0 DEG. CENT. REFERENCE: US 9298

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE( TORR) = 0.66-02 
ESTIMATED BOILING POINT(CENT.) = 256.1 
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.1 
VOLATILITY(MG/METER CUBED) = .75+02 
VOLATILITY(MILLIMOLE/ METER CUBED) = .36+00 

----- WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ------

DENSITY(G/Ml) = 1.0699 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 -.00088*TEMP.(C.) DETERMINED OVER 
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -226.22, C = 103.3 DETERMINED OVER THE 
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY 
VISCOSITY(CENTISTOKES) = 5.310

THE EQUATION: SURFACE TENSION(DYNEs/CM) = 33.7000 -.0916*TEMP.(C.) 
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 31.4 DYNEs/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 
ZHUHN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE 
G/M CC DEG C CC/MOLE ATM. 
3348 466.14 631.18 25.10

DIFFUSION COEF. = 0.043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE 
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) 
VISCOSITY OF VAPOR = 5.56-03 CENTIPoISE

END OF COMPOUND EA 1699 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1699 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 211.3

GENERAL REFERENCE: CWR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.12770, B = 3230.30, C = 260.7 DETERMINED OVER THE

TEMPERATURE RANGE 42.0 TO 180.0 DEG. CENT. REFERENCE: W R 9298

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 0.24 - 0.1
ESTIMATED BOILING POINT (CENT.) = 256.4
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 18.0
VOLATILITY (MG/METER CUBED) = 0.26 - 0.03 VOLATILITY (MILLIMOLE/ METER CUBED) = 0.12 - 0.01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0367 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0820 - 0.00089 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.03746, B = -226.22, C = 103.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 3.473

THE EQUATION: SURFACE TENSION (DYNES/CM) = 33.7000 - 0.918 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.0 DYNES/CM

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQU.: J. PHY. CHEM. 48, 23 (1944)

DIFFUSION COEF. = 0.047 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF VAPOR = 5.89 - 03 CENTIPOISE

END OF COMPOUND EA 1699 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1701 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: VX  FORMULA WEIGHT: 287.4  GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.28100, B = 2072.10, C = 172.5 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT.  REFERENCE: EC-TR 76050
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .44-08
ESTIMATED WILING POINT(CENT.) = 298.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 29.3
VOLATILITY(MG/METER CUBED) = .81-04 VOLUMETRIC METER CUBED) = .30-06
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0622 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0290 - .00083 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -00572, B = 189.38, C = 80.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE:CWLR2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 0.9924.993

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 34.6631 - .1326*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 40.0 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -50.0  REFERENCE:  359 TO -60  CWLR2346
REFRACTIVE INDEX(KD) = 1.4774 AT  25.0 DEG. CENT.  REFERENCE: CWLR2346
FLASH POINT, MCCUTCHEN-YOUNG(CENTIGRADE) = 159.0  REFERENCE: CWLR 2346
HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -318.50 AT  25.0 DEGREE CENT.  REFERENCE: EST.BENS, CHEM.R,NO3.P279.66
HEAT CAPACITY (KCAL/MOLE) = .1100 AT  25.0 DEGREE CENT.  REFERENCE: TECH REF HB. CRDL-63-5-780
SOLUBILITY(G/100G SOLVENT) = .500-01 AT  21.5 DEGREE CENTIGRADE REFERENCE: WATER.CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 27. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MOLE  ATM.
.3177  473.27  841.66  19.00

DIFFUSION COEF. = .020 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.  J.PHYS.CHIM. 48,23(1944)  VISCOSITY OF VAPOR = 3.63-03 CENTPOISE
DIPOLE MOMENT(DEBYES) = 3.0 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P 4

END OF COMPOUND EA 1701 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1701 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: VX FORMULA WEIGHT: 267.4 GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.26100, B = 2072.10, C= 172.5 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT. REFERENCE: EC-TR 70059
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .50-06
ESTIMATED BOILING POINT(CENT.) = 298.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 28.1
VOLATILITY(MG/METER CUBED) = 64.02 VOLATILITY(MOLL/MOLE CUBED) = .31-04
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/M) = 1.0456 WAS CALCULATED FROM THE EQUATION: DENSITY = 0.0200 + 0.00083 x TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 224.619
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/S) = 34.6631 - .1326 x TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 37.3 DYNE/C
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWLR2346
REFRACTIVE INDEX(DRY) = 1.4774 AT 25.0 DEG. CENT. REFERENCE: CWLR2346
FLASH POINT, MCCUTCHEN-YOUNG(TEMPERATURE) = 159.0 REFERENCE: CWLR 2346
HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -315.80 AT 25.0 DEGREE CENT. REFERENCE: EST. BENSCHM, CHEM.R., NO3, P279.69
HEAT CAPACITY (KCAL/MOLE) = 1.10 AT 25.0 DEGREE CENT. REFERENCE: TECH REF HB, CDRL-63-S-780
SOLUBILITY(G/100G SOLVENT) = .500+01 AT 21.5 DEGREE CENT. REFERENCE: WATER, CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1983)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3177 473.27 841.66 19.00

DIFFUSION COEF. = .024 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS Eq.: U.PHY.CHEM.46.23(1944)

VISCOITY OF VAPOR = 4.23-03 CENTIPOISE
DIPOL MOMENT(DERIVES) = 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: MB2253 P 4

END OF COMPOUND EA 1701 AT -20.0 DEGREES C.

PAGE NUMBER B-230
SUMMARY OF PROPERTIES OF EA 1701 AT .0 DEGREES CENTIGRADE
COMMON NAME: VX FORMULA WEIGHT: 267.4 GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= \text{7.28100, B= 2072.10, C= 172.5} DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO \text{-231.0 DEG. CENT.} REFERENCE: EC-TR 76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
\text{VAPOR PRESSURE(TORR)= .19-04}
\text{ESTIMATED BOILING POINT(CENT.)= 298.3}
\text{HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= .23.7}
\text{VOLATILITY(MG/METER CUBED)= .29+00 VOLATILITY(MILLIMOLE/ METER CUBED)= .11-02}

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.0290 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0290 - .00083 \times TEMP.(C.) DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= \text{-80572, B= 189.38, C= 80.0} DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR2346
WERE USED TO CALCULATE THE VISCOSITY
\text{VISCOITY(CENTISTOKES )= 36.474}

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 34.6631 - .1326\times TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 34.7 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWLR2346
REFRACTIVE INDEX(ND)= 1.4774 AT 25.0 DEG. CENT. REFERENCE: CWLR2346
FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 REFERENCE: CWLR 2346
HEAT OF FORMATION OF LIQUID (KCAL/MOLE)= -318.50 AT 25.0 DEGREE CENT. REFERENCE: EST. BENSN. CHEM.R. NO3. P279.66
HEAT CAPACITY (KCAL/MOLE)= .1100 AT 25.0 DEGREE CENT. REFERENCE: TECH REF TB, CRDL-63-5-780
SOLUBILITY(G/100G SOLVENT) .500+01 AT 21.5 DEGREE CENTIGRADE REFERENCE: WATER.CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3177 473.27 841.66 19.00

DIFFUSION COEF. = .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.231(1944) VISCOSITY OF VAPOR = 4.63-03 CENTIPoise
DIPOL MOMENT(DEBYES)= 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS)= 21.4 AT AMBIENT TEMPERATURE REFERENCE: NS9253 P 4

END OF COMPOUND EA 1701 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1701 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: VX FORMULA WEIGHT: 267.4 GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 7.28100, B= 2072.10, C= 172.5 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 231.0 DEG. CENT. REFERENCE: EC-Tr 76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(Torr)= .33-03
ESTIMATED BOILING POINT(CENT.) = 288.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 22.0
VOLATILITY(MG/MEETER CUBED)= .48+01 VOLATILITY(MILLIMOLE / MEETER CUBED)= .18-01
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.0124 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0290 - .00083 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 80.0 DEG. CENT. REFERENCE: CWlr 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -86572, B= -189.38, C= 80.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWlr2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 12.256

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNESS/CM)= 34.6631 - .1326*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWlr 2346
WERE USED TO CALCULATE THE SURFACE TENSION 32.0 DYNESS/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWlr2346
REFRACTIVE INDEX(ND)= 1.4774 AT 25.0 DEG. CENT. REFERENCE: CWlr2346
FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 159.0 REFERENCE: CWlr 2346
HEAT OF FUSION OF LIQUID (KCAL/MOLE)= -318.50 AT 25.0 DEGREE CENT. REFERENCE: EST.BIENN.CHEM.R.NO3.P279.69
HEAT CAPACITY (KCAL/MOLE)= .1100 AT 25.0 DEGREE CENT. REFERENCE: TECH REF HB, CRDL-63-5-760
SOLUBILY(G/100G SOLVENT) = .500+01 AT 21.5 DEGREE CENTIGRADE REFERENCE: WATER.CWlr 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3177 473.27 841.05 19.00

DIFFUSION COEF. = .033 CM.SQ_/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.231(1944)

VISCOSITY OF VAPOR = 5.03-03 CENTIPOISE

DIPOLE MOMENT(DEBYES)= 3.8 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX(UNITLESS)= 21.4 AT AMBIENT TEMPERATURE REFERENCE: NS9253 P 4

END OF COMPOUND EA 1701 AT 20.0 DEGREES C. PAGE NUMBER 8-232
SUMMARY OF PROPERTIES OF EA 1701 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: VX FORMULA WEIGHT: 287.4 GENERAL REFERENCE: EATR4210

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.28100, B = 2072.10, C = 172.5 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 201.0 DEG. CENT. REFERENCE: EC-TR 76058
WE WERE USED TO CALCULATE THE FOLLOWING PROPERTIES:
VAPOR PRESSURE(TORR) = 0.62-03
ESTIMATED BOILING POINT(CENT.) = 298.4
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 21.6
VOLATILITY(MG/METER CUBED) = 0.89-01
VISCOSITY(MILLIMOLE/ METER CUBED) = 0.39-01
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******
DENSITY(G/ML) = 1.0083 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0290 - 0.00083 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -80572, B = -189.30, C = 80.0 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WE WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(SENISTOKES) = 9.958

THE EQUATION: SURFACE TENSION(DYNE/SQM)= 34.6631 - 0.1326*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WE WERE USED TO CALCULATE THE SURFACE TENSION
MELTING POINT (DEG. CENT.) = -50.0 REFERENCE: -39 TO -60 CWLR 2346
REFRACTIVE INDEX(ND) = 1.4774 AT 25.0 DEG. CENT. REFERENCE: CWLR 2346
FLASH POINT, MCCUTCHEON-YOUNG(CENTIGRADE) = 159.0 REFERENCE: CWLR 2348
HEAT OF FORMATION OF LIQUID (KCAL/MOLE) = -318.50 AT 25.0 DEGREE CENT. REFERENCE: EST.BENG N.CHEM.R.NO3.P279.69
HEAT CAPACITY (KCAL/MOLE) = 0.1100 AT 25.0 DEGREE CENT. REFERENCE: TECH REF HB, CRDL-63-S-780
SOLUBILITY(G/100G SOLVENT) = 0.500-01 AT 21.5 DEGREE CENTIGRADE REFERENCE: WATER.CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FELIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATN
.3177 473.27 841.66 19.00
DIFFUSION COEF. = .034 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WERE ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 5.13-03 CENTIPoise
DIPOLE MOMENT(DEBYE)= 3.6 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX(UNITLESS) = 21.4 AT AMBIENT TEMPERATURE REFERENCE: NBR253 P 4

END OF COMPOUND EA 1701 AT 25.0 DEGREES C.
Summary of properties of EA 1701 at 40.0 degrees centigrade

Common name: Vx  Formula weight: 257.4  General reference: EATR4210

The following Antoine constants (EATR 4491): A= 7.26100, B= 2072.10, C= 172.5 determined over the
Temperature range 30.0 to 231.0 deg. cent.  Reference: EC-TR 76058

Were used to calculate the following four properties:
Vapor pressure (torr) = .34-02
Estimated boiling point (cent.) = 298.4
Heat of vaporization (kilojoules/mole) = 20.6
Volatility (mg/meter cubed) = .46+.02  Volatility (millimole/meter cubed) = .17+.00
Density (g/ml) = .9958 was calculated from the equation: Density = 1.0290 - .00083 x Temp. (c.) determined over
the temperature range 25.0 to 50.0 deg. cent.  Reference: CWLR 2346

The following Antoine constants (EATR 4491): A= -.80572, B= -189.38, C= 80.0 determined over the
Temperature range 25.0 to 50.0 deg. cent.  Reference: CWLR2346

Were used to calculate the viscosity

Viscosity (centistokes) = 5.924

The equation: Surface tension (dynes/cm) = 34.6631 - .1326 x temp. (c.)
Determined over the temperature range 25.0 to 50.0 deg. cent.  Reference: CWLR 2346

Were used to calculate the surface tension 29.4 dynes/cm

Melting point (deg. cent.) = -50.0  Reference: -39 to -60  CWLR2346

Refractive index (no) = 1.4774 at 25.0 deg. cent.  Reference: CWLR2346

Flash point, McCutchan-Young (centigrade) = 159.0  Reference: CWLR 2346

Heat of formation of liquid (kcal/mole) = -318.50 at 25.0 degree cent.  Reference: EST. BENS, CHEM. R, NO 3, P. 279. 69

Heat capacity (kcal/mole) = .1100 at 25.0 degree cent.  Reference: TECH REF HB, CAROL-63-S-780

Solvency (g/100g solvent) = .500+ .01 at 21.5 degree centigrade  Reference: WATER/CWLR 2346

The following critical properties were estimated using the method of Filippov.

Zhurn. Fiz. Khim. 37, 201 (1963)

Density  Temperature  Volume  Pressure
GM/cc  deg C  cc/mole  atm
.3177  473.27  641.66  19.00

Diffusion coefficient = .038 cm^2/sec calculated for vapor in air

The viscosity of the vapor was estimated using the above critical properties and the
Modified Sutherland's eq., J. Phys. Chem. 48, 23 (1944)  Viscosity of vapor = 5.43-03 centipoise
Dipole moment (debyes) = 3.6 at ambient temperature  Reference: NMR-CALC ARCSL-IN IN PROGRESS
Oxygen index (unitless) = 21.4 at ambient temperature  Reference: S89253 P 4

End of compound EA 1701 at 40.0 degrees C.
SUMMARY OF PROPERTIES OF EA 1724 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: Qu
FORMULA WEIGHT: 235.3
GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

****** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.52001, B = 1428.57, C = 147.8 DETERMINED OVER THE TEMPERATURE RANGE 112.6 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB8707

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .10-06
ESTIMATED BOILING POINT (CENT.) = 244.8
HEAT OF VAPORIZATION (KILocalories/MOLE) = 30.6
VOLATILITY (MG/METER CUBED) = .30-02 VOLATILITY (MILLIMOLE/ METER CUBED) = .13-04

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY (G/ML) = .9671 WAS CALCULATED FROM THE EQUATION: DENSITY = .9307 - .00091 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-308(A) 1-68

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.00990, B = -201.21, C = 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CEntipoise) = 25.961

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

THE EQUATION: SURFACE TENSION (DYNES/CM) = 27.1630 - .0826 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57

WERE USED TO CALCULATE THE SURFACE TENSION 29.7 DYNES/CM

****** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

REFRACTIVE INDEX (ND) = 1.4480 AT 20.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57
FLASH POINT, OPEN CUP (CENTIGRADE) = 95.0 REFERENCE: TAG DC. NB10112 P51
AUTOIGNITION TEMPERATURE (CENTIGRADE) = 129.0 REFERENCE: NB9283 P81

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M/CC DEG C CC/MOLE ATL.
.2993 366.74 788.84 17.36

DIFFUSION COEF. = .021 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 23 (1944)

VISCOSITY OF VAPOR = 4.18-03 CENLPOISE

DIPOL MOMENT (DEBYES) = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX (UNITLESS) = 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

END OF COMPOUND EA 1724 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1724 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: ZL FORMULA WEIGHT: 235.3 GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= 6.52001, B= 1426.57, C= 147.8 DETERMINED OVER THE TEMPERATURE RANGE 112.6 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB0767

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .22-04
ESTIMATED BOILING POINT(CENT.)= 244.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 25.6
VOLATILITY(MG/METER CUBED)= .32-00 VISCOSITY(MILLINOISE/METER CUBED)= .14-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= .9489 WAS CALCULATED FROM THE EQUATION: DENSITY= .9307 - .00091 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FNC DA-11-173-AMC-308(A) 1-58

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A= -1.00990, B= -201.21, C= 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE SURFACE TENSION

VISCOSITY(CENTIPOISE)= 9.792

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/SQM)= 27.1630 - .0628*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE SURFACE TENSION 28.4 DYNE/SQM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.4480 AT 20.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57
FLASH POINT, OPEN CUP(CENTIGRADE)= 95.0 REFERENCE: TAG CC. NB10112 PB1
AUTOIGNITION TEMPERATURE(CENTIGRADE)= 129.0 REFERENCE: NB9283 PB1

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPYOV. ZHURN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM .2983 366.74 768.84 17.18

DIFFUSION COEF. = .025 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,231(1944) VISCOSITY OF VAPOR = 4.60-03 CENTIPOISE

DIPOLAR MOMENT(DEDYES) = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX(UNITLESS)= 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9283 PB1

END OF COMPOUND EA 1724 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1724 AT .0 DEGREES CENTIGRADE  
COMMON NAME: QL  FORMULA WEIGHT: 235.3  GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE. ****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.52001, B= 1429.57, C= 147.6 DETERMINED OVER THE TEMPERATURE RANGE 112.0 TO 151.9 DEG. CENT.  REFERENCE: CWL TECH MEMO 31-42 +NB8707

WAS USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

DENSITY(G/ML) = .9307 WAS CALCULATED FROM THE EQUATION: DENSITY = .9307 - .00091 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT.  REFERENCE: FMC DA-11-173-AMC-308(A) 1-68

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00990, B= -201.21, C= 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 90.0 DEG. CENT.  REFERENCE:CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE VISCOSITY VISCOSITY(CENTIPOISE) = .226

THE EQUATION: SURFACE TENSION(DYNE/CM) = 27.1630 - .00626*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE SURFACE TENSION

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIIM. 37, 201(1963)

DIFFUSION COEF. = .030  CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 5.03-03 CENTIPOISE

THE following indices were calculated:

DIPOLAR MOMENT(DEBYE) = 1.9 AT AMBIENT TEMPERATURE  REFERENCE: HNR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX(UNITLESS) = 20.2 AT AMBIENT TEMPERATURE  REFERENCE: NB9283 P23

END OF COMPOUND EA 1724 AT .0 DEGREES C.  PAGE NUMBER B-237
SUMMARY OF PROPERTIES OF EA 1724 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: QL FORMULA WEIGHT: 235.3 GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.52001, B= 1428.57, C= 147.6 DETERMINED OVER THE TEMPERATURE RANGE 112.0 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB9707

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(10)- = .10-01
ESTIMATED BOILING POINT(10000C)= 244.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 19.9
VOLATILITY(MG/METER CUBED)= .13+03 VOLATILITY(MILLIMOLE/ METER CUBED)= .55+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= .9125 WAS CALCULATED FROM THE EQUATION: DENSITY= .9307 - .00091*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-306(A) 1-68

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00990, B= -201.21, C= 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57

WERE USED TO CALCULATE THE SURFACE TENSION 25.9 DYNES/CM

VISCOSITY(CENTPOISE)= 2.496

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM)= 27.1630 - .9626*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57

WERE USED TO CALCULATE THE SURFACE TENSION 25.9 DYNES/CM

VISCOSITY(CENTPOISE)= 2.496

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

REFRACTIVE INDEX(ND)= 1.4480 AT 20.0 DEG. CENT. REFERENCES: CWL TECH MEMO 31-42 12-9-57

FLASH POINT, OPEN CUP(CENTIGRADE)= 95.0 REFERENCES: TAG OC. NB10112 P51

AUTOIGNITION TEMPERATURE(CENTIGRADE)= 129.0 REFERENCES: NB9253 P61

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC OEG C CC/MOLE ATM.
2983 366.74 768.64 17.38

DIFFUSION COEF. = .035 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.45-03 CENTPOISE

DIPOLAR MOMENT(DEBYES)= 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX(UNITLESS)= 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

END OF COMPOUND EA 1724 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1724 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: QL FORMULA WEIGHT: 235.3 GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.52001, B= 1428.57, C= 147.8 DETERMINED OVER THE TEMPERATURE RANGE 112.8 TO 151.9 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB9707
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE [TORR] = 19810
ESTIMATED BOILING POINT [CENT.°] = 244.8
HEAT OF VAPORIZATION [KILocalORIES/MOLE] = 19.4
VOLATILITY [ML/METER CUBED] = 0.2303
VOLATILITY [MILLIMOLE/METER CUBED] = 0.9650

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY [G/ML] = 0.9080 WAS CALCULATED FROM THE EQUATION: DENSITY = 0.9307 - 0.00091 * TEMP. (°C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-308(A) 1-66

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.00990, B= -201.21, C= 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57
WERE USED TO CALCULATE THE VISCOSITY (CENTIPOISE) = 2.237

THE EQUATION: SURFACE TENSION [DYNES/CM] = 27.1630 - 0.0626 * TEMP. (°C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57
WERE USED TO CALCULATE THE SURFACE TENSION 25.6 DYNES/CM

REFRACTIVE INDEX [NO] = 1.4480 AT 20.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57
FLASH POINT, OPEN CUP [CENTIGRADE] = 95.0 REFERENCE: TAG DC. NB10112 P81
AUTOIGNITION TEMPERATURE [CENTIGRADE] = 129.0 REFERENCE: NB9283 P81

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/I/CC REG C CC/MOLE ATM.
.2983 366.74 788.84 17.38

DIFFUSION COEF. = .036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48.231 (1944) VISCOSITY OF VAPOR = 5.55-03 CENTIPOISE

DIPOLE MOMENT [DEBYES] = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS
OXYGEN INDEX [UNITLESS] = 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9253 P23

END OF COMPOUND EA 1724 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1724 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: QL FORMULA WEIGHT: 235.3 GENERAL REFERENCE: CWL TECH MEMO 31-42 12-9-57

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.52001, B = 1429.57, C = 147.8 DETERMINED OVER THE TEMPERATURE RANGE 112.0 TO 151.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 +NB8707

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TOQR) = 0.0201
ESTIMATED BOILING POINT( Crazy. ) = 244.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 18.2
VOLATILITY(MG/METER CUBED) = .96+03 VOLATILITY(MILLIMOIE/ METER CUBED) = .42+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = .8043 WAS CALCULATED FROM THE EQUATION: DENSITY = .9307 - .00091 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE -53.9 TO 73.9 DEG. CENT. REFERENCE: FMC DA-11-173-AMC-308(A) 1-66

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.00990, B = -201.21, C = 123.0 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTIPOISE) = 1.677

THE EQUATION: SURFACE TENSION(DYNE/S CM) = 27.1630 -.0626*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57 WERE USED TO CALCULATE THE SURFACE TENSION 24.7 DYNE/S CM

REFRACTIVE INDEX(ND) = 1.4400 AT 20.0 DEG. CENT. REFERENCE: CWL TECH MEMO 31-42 12-9-57

FLASH POINT, OPEN CUP(CENTIGRADE) = 95.0 REFERENCE: TAG OC NB10112 P51

AUTOIGNITION TEMPERATURE(1CENTIGRADE) = 129.0 REFERENCE: NB9283 P61

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILLPPOV.

ZHERN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GW/CC DEG C CC/MOLE ATM.
.2983 366.74 760.44 17.39

DIFFUSION = 0.040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)

VISCOSITY OF VAPOR = 5.67-03 CENTIPOISE

DIPOLE MOMENT(DEBYES) = 1.9 AT AMBIENT TEMPERATURE REFERENCE: NMR-CALC ARCSL-TR IN PROGRESS

OXYGEN INDEX(UNITLESS) = 20.2 AT AMBIENT TEMPERATURE REFERENCE: NB9283 P23

END OF COMPOUND EA 1724 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1728 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT: 281.4  GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0419 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0099 - .00080 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.94359, B = -222.32, C = 86.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 7250.597

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 31.3000 - .0810*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 34.5 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 170.0  REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPVOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC  DEG C  CC/MOLE  ATM.
3108  484.40  905.43  17.93

DIFFUSION COEF. = .019 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. . J.PHY.CHEM, 48,231(1944)  VISCOSITY OF VAPOR = 3.70-03 CENTIPOISE

END OF COMPOUND EA 1728 AT -40.0 DEGREES C.

PAGE NUMBER B-241
SUMMARY OF PROPERTIES OF EA 1728 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 201.4
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0259 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0099 - .00080*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.94359, B = -222.82, C = 86.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 250.827

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 31.3000 - .0810*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 32.9 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 170.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/A/CC DEG C CC/MOLE ATM.
.3108 484.40 905.43 17.93

DIFFUSION COEF. = .023 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.09-03 CENTIPoise

END OF COMPOUND EA 1728 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1728 AT .0 DEGREES CENTIGRADE
COMMON NAME: formula weight: 281.4 general reference: CWLR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0099 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0099 -.00080 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.94359, B= -222.82, C= 86.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CFNT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 43.237
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 31.3000 -.0810*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 31.3 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 170.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME
PRESSURE
G1/CC DEG C CC/MOLE ATM.
.3108 484.40 905.43 17.93

DIFFUSION COEF. = .027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

END OF COMPOUND EA 1728 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1728 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML)= .9339 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0099 - .00080 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -.94359, B= -222.82, C= 88.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES )= 14.155

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 31.3000 - .0810*TFMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 29.7 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 170.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZMURN. FIZ KHIM. 37. 201(1963)

DIFFUSION COEF. = .031 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.87-03 CENTPOISE

END OF COMPOUND EA 1728 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1728 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: MAZ 0.9404
FORMULA WEIGHT: 281.4
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 0.9999 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0059 - 0.00080 * TEMPERATURE (°C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 Deg. Cent. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -.94359, B = -222.62, C = 86.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 Deg. Cent. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 11.400

THE EQUATION: SURFACE TENSION (DYNES/CM) = 31.3000 - 0.0810 * TEMPERATURE (°C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 Deg. Cent. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 29.3 DYNES/CM

FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 170.0 REFERENCE: CWLR2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201 (1983)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM
.3108 484.40 905.63 17.93

DIFFUSION COEF. = 0.033 CM²/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48. 23 (1944)

VISCOSETY OF VAPOR = 4.96-03 CENTIPOISE

END OF COMPOUND EA 1728 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1728 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = .9779 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0099 - .00060 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -.94359, B = -222.82, C = 86.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 6.599

THE EQUATION: SURFACE TENSION (DYNE/CM) = 31.3000 - .0810*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 28.1 DYNE/CM

FLASH POINT, MCCUTCHEN-YOUNG (CENTIGRADE) = 170.0 REFERENCE: CWLR 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHXIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
60/CC DEG C CC/MOLE ATM.
.3108 464.40 005.43 17.93

DIFFUSION COEF. = .036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY. CHEM. 48, 23(1944) VISCOSITY OF VAPOR = 5.26-03 CENTIPoise

END OF COMPOUND EA 1728 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1763 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 201.4 GENERAL REFERENCE: CWLR 2346

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(ML/G) = 1.0408 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - .00061 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.16101, B= -282.37, C= 102.5 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 2261.29

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM) = 32.3000 - .0837*TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 35.6 DYNES/CM

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SOLUBILITY(G/100G SOLVENT) = .200+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: CWDL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

CRITICAL TEMPERATURE 370 DEG. C

CRITICAL PRESSURE 222880 ATM.

DIFFUSION COEFF. = .019 CM^2/S/SCC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 3.72-03 CENTIPoise

END OF COMPOUND EA 1763 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1763 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: PEG 997
FORMULA WEIGHT: 201.4
GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML): 1.0337 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 + .00081 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.16101, B = -282.37, C = 102.5 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CEINTISTOKES ) = 182.054

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM)= 32.3000 + .0837*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION

34.0 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SOLUBILITY(G/100G SOLVENT) .200+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: CWOL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3133 482.83 898.29 18.04

DIFFUSION COEF. = .023. CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.11-03 CENTIPoise

END OF COMPOUND EA 1763 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1763 AT .0 DEGREES CENTIGRADE
COMMON NAME: EA FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 1.0175 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - 0.00081 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.5101, B = -292.37, C = 102.5 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENSTOSTOKES) = 39.163
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.3000 - 0.0837*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION: 32.3 DYNES/CM
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SOLUBILITY (G/100G SOLVENT) = .200±01 AT 20.0 DEGREE CENTIGRADE REFERENCE: CWDL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
.3133 482.89 898.29 18.04

DIFFUSION COEF. = .027 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED-SUTHERLANDS EQ: J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.51-03 CENTIPoise
SUMMARY OF PROPERTIES OF EA 1763 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 281.4 GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = 1.0013 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - .00081 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR .4491): A= -1.16101, B= -282.37, C= 102.5 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 13.912

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNES/CM)= 32.3006 - .0837*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346
WERE USED TO CALCULATE THE SURFACE TENSION 30.6 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

SOLUBILITY(G/100G SOLVENT) = .200+01 AT 20.0 DEGREE CENTIGRADE REFERENCE: CWDL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3133 482.08 898.29 18.04

DIFFUSION COEF. = .032 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.90-03 CENTIPOISE

END OF COMPOUND EA 1763 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1763 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:       FORMULA WEIGHT: 281.4  GENERAL REFERENCE: CWLR 2346

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
   BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

**** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE
   A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY(G/ML) = .9273 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - .000081 * TEMP.(C.) DETERMINED OVER
   THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.16101, B = -282.37, C = 102.5 DETERMINED OVER THE
   TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY
   VISCOSITY(CENTISTOKES) = 1.299

THE EQUATION: SURFACE TENSION(DYNE/CN) = 32.3000 - .0837*TEMP.(C.)
   DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT.  REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 30.2 DYNE/CM

SOLUBILITY(G/100G SOLVENT) = .200+01 AT 20.0 DEGREE CENTIGRADE  REFERENCE: CWDL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
   G/A/CC  DEG C  CC/MOLE  ATM.
   .3133  492.89  868.28  18.04

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
   MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 5.00-03 CENTPOISE

END OF COMPOUND EA 1763 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 1763 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FormulA Weight: 281.4GENERAL REFERENCE: CWLR 2346

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (G/ML) = 0.952 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0175 - 0.00081 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.16101, B = -282.37, C = 102.5 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 6.008

THE EQUATION: SURFACE TENSION (DYNES/CM) = 32.3000 - 0.0837 * TEMP.(C.)

DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 50.0 DEG. CENT. REFERENCE: CWLR 2346

WERE USED TO CALCULATE THE SURFACE TENSION 29.0 DYNES/CM

SOLUBILITY (G/100G SOLVENT) = 0.000 + 01 AT 20.0 DEGREE CENTIGRADE REFERENCE: CWDL 2346

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201 (1963)

DIFFUSION COEF. = 0.036 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTTON SANDS EQUATION. J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 2.49 - 03 CENTIPoise

END OF COMPOUND EA 1763 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA. 2261 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: TRICHLOROACETIC ACID
FORMULA WEIGHT: 120.0
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

TEMPERATURE RANGE 0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUK PROPERTIES:

- VAPOR PRESSURE(TORR) = 1.14-03
- ESTIMATED BOILING POINT(CENT.) = 243.6
- HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 13.1
- VOLATILITY(MG/METER CUBED) = .920+01
- VOLATILITY(MILLIMOLE/METER CUBED) = .92-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0359 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0059 - .00075 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.3730, B = -709.95, C = 238.4 DETEMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 30.028

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCGUTCHAN-YOUNG(CENTIGRADE) = 118.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

- DENSITY TEMPERATURE VOLUME PRESSURE
  - DM/CC DEG C CC/MOLE ATM
  - 0.0093 523.30 696.19 24.87

DIFFUSION COEF. = .023 CM^2/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU. J.FPHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 3.71-03 CENTIPoise

END OF COMPOUND EA 2261 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2261 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 210.2 GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.41620, B= 2860.40, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TOHRS)= .13-02
ESTIMATED BOILING POINT(CEnt.)= 243.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.1
VOLATILITY(MG/METER CUBED)= .17-02 VOLATILITY(MILLIMOLE/METER CUBED)= .03-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENISITY(G/ML)= 1.0209 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0059 - .00075 *TEMP.(C.). DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.13730, B= -709.95, C= 236.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 13.914

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEAN-YOUNG(CENTIGRADE)= 118.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3063 523.30 686.19 24.87

DIFFUSION COEF. = .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48:23(1944) VISCOSITY OF VAPOR = 4.10-03 CENTIPoise

END OF COMPOUND EA 2261 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2261 AT .0 DEGREES CENTIGRADE
COMMON NAME: Apn
FORMULA WEIGHT: 210.2
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.41620, B = 2860.40, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE .0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .08-02
ESTIMATED BOILING POINT(CENT.) = 243.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 13.1
VOLATILITY(MG/METER CUBED) = .11+03

THE FOLLOWING ANTIGNE CONSTANTS(EATR 4491): A = -2.13730, B = -709.95, C = 236.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 7.343

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE) = 118.0

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

CHURN. FIZ KHM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
CM/CC DEG C CC/MOLE ATM.
.7053 523.30 686.19 24.87

DIFFUSION COEF. = .033 CM-SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.FWY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 4.50-03 CENTIPoise

END OF COMPOUND EA 2261 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2281 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 210.2

**IMPORTANT** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.41820, B= 2660.40, C= 273.2 TERMINED OVER THE TEMPERATURE RANGE -40 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.001
ESTIMATED BOILING POINT(CENT.)= 243.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 13.1
VOLATILITY(MG/METER CUBED) = 0.52+0.3 VOLATILITY(MILLIMOLE/METER CUBED) = 0.25+0.1
DENSITY(G/ML) = 0.9909 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0050 - 0.0078 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.13730, B= -708.95, C= 238.4 TERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 4.282

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHEAN-YOUNG(CENTIGRADE) = 118.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FELIPPO

ZWERN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/M.CC DEG C CC/MOLE ATM.
0.3063 523.30 686.19 24.87

DIFFUSION COEF. = 0.39 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.60-03 CENTIPoise

END OF COMPOUND EA 2281 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2261 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 210.2 GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.41620, B = 2880.40, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE .0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 66.01
ESTIMATED BOILING POINT (CENT.) = 243.6
HEAT OF VAPORIZATION (KJ/MOLE) = 13.1
VOLATILITY (MG/METER CUBED) = .7503

VOLATILITY (MILLIMOLE/ METER CUBED) = .3501

DENSITY (G/ML) = .9872 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0059 - .00075 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANT(EATR 4491): A = -2.13730, B = -709.95, C = 236.4 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 3.790

FLASH POINT, HAGUTCHAM-YOUNG (CENTIGRADE) = 118.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPOV.

ZHOKH. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GJ/CC DEG C CC/MOLE ATM.
.0053 523.30 696.19 24.87

DIFFUSION COEF. = .040 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944)

VISCOSITY OF VAPOR = 4.99-63 CENTIPOISE

END OF COMPOUND EA 2261 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2261 AT 40.0 DEGREES CENTIGRADE

COMMON NAME:          FORMULA WEIGHT: 210.2          GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 6.41620, B= 2850.40, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE .0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .19+00
ESTIMATED BOILING POINT(CENT.) = 243.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.1
VOLATILITY(MG/METER CUBED)= .21+04 VOLATILITY(MILLIMOLE/ METER CUBED) = .98+01
DENSITY(G/ML)= .9759 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0059 - .00075 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -2.13730, B= -709.95, C= 236.4 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISOSITY(CENTISTOKES)= 2.699

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 118.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME
GM/CC  DEG C  CC/MOLE  ATM.
.3063  523.30  686.19  24.87

DIFFUSION COEF. = .045 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISOSITY OF VAPOR = 5.29-03 CENTIPoise

END OF COMPOUND EA 2261 AT 40.0 DEGREES C.          PAGE NUMBER B-258
SUMMARY OF PROPERTIES OF EA 2337 AT THE MELTING POINT IN LIEU OF -40 DEG C

COMMON NAME: FORMULA WEIGTH: 198.2 GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.85660, B= 26356.80, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE TORR) = 0.19-02
ESTIMATED BOILING POINT (CENT.) = 178.1
HEAT OF VAPORIZATION (KCAL/MOLE) = 12.3
VOLATILITY (MG/METER CUBED) = 0.27-02
LATILITY (MILLIMOLE/ METER CUBED) = 0.13-00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0079 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0499 - 0.00095 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.27820, B= -313.12, C= 160.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 21.229

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/A/CC DEG C CC/MOLE ATM.
0.3313 406.85 598.29 24.36

DIFFUSION COEFF. = .026 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,231(1944) VISCOSITY OF VAPOR = 4.42-03 CENTIPOISE

END OF COMPOUND EA 2337 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2337 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: [ ]
FORMULA WEIGHT: 196.2
GENRAL REFERENCE: ARCSL-TR-77001

***** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUPERCOOLED LIQUID AND NOT THE SOLID *****

THE FOLLOWING ANTOINE CONSTANTS(EATN 4491): A= 8.85560, B= 266G.80, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE( TORR) = 16-01
ESTIMATED BOILING POINT (CENT.) = 170.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.3
VOLATILITY(MG/METER CUBED) = 20.03 VOLATILITY(MILLIMOLE/ METER CUBED) = 10.16
DENSITY(G/ML) = 1.0660 was calculated from the equation: DENSITY = 1.0499 + 0.00174 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATN 4491): A= -1.27620, B= -313.12, C= 160.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 9.020

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHEON-YOUNG(CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPO':
ZHURN. FIZ KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CC/CC DEG C CC/MOLE ATM.
1.33.3 446.85 598.20 24.36

DIFFUSION COEFF. = 0.31 CM.SQ/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY. CHEM.48.231(1944)

VISCOITY OF VAPOR = 4.87-03 CENTIPOISE

END OF COMPOUND EA 2337 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2337 AT .0 DEGREES CENTIGRADE

COMMON NAME:                            FORMULA WEIGHT: 198.2  GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.02680, B= 2696.80, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .98-01
ESTIMATED BOILING POINT(HEAT.)= 178.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.3
VOLATILITY(MG/METER CUBED)= .11+04  VOLATILITY(MILLIMOLE/ METER CUBED)= .57+01
DENSITY(G/ML)= 1.0499 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0499 - .00095 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.27824, B= -313.12, C= 160.7 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTICKES)= 4.747

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHEN-YOUNG(CE) = 109.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GU/CC  PEQ C  CC/MOLE  ATM

.3013  400.85  598.28  24.38

DIFFUSION COEF. = .037 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48.23(1944)  VISCOSITY OF VAPOR = 5.33-03 CENTIPoise

END OF COMPOUND EA 2337 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2337 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 198.2 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 449): A = 8.95660, B = 2896.80, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 0.45+00
ESTIMATED BOILING POINT(CEST.) = 178.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.3
VOLATILITY(MG/METER CUBED) = 0.49+04 VOLATILITY(MILLIMOLE/METER CUBED) = 0.25+02
DENSITY(G/MIL) = 1.0309 WAS CALLED FROM THE EQUATION: DENSITY = 1.0499 -.00095 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.27820, B = -313.12, C = 150.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY:
VISCOSITY(CENTISTOKES) = 2.880

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHEN-YOUNG(CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ. KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
3313 406.85 598.28 24.36

DIFFUSION COEF. = .043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHYS.CHEM. 48.23(1944) VISCOSITY OF VAPOR = 5.76-03 CENTIPOISE

END OF COMPOUND EA 2337 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2337 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 198.2 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANILINE CONSTANTS (EA 4491): A = 8.85660, B = 2696.80, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = .35 + 0.0 ESTIMATED BOILING POINT (CENT.) = 178.1
HEAT OF VAPORIZATION (KCAL/MOLE) = 12.3 VOLATILITY (MG/METER CUBED) = 1.0262 WAS CALCULATED FROM THE EQUATION:
DENSITY (G/ML) = 1.0499 - .00095 x TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANILINE CONSTANTS (EA 4491): A = -1.27820, B = -313.12, C = 160.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY (CENTISTOKES) = 2.585
MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 105.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37 201 (1983):
DENSITY TEMPERATURE VOLUME PRESSURE
G/N/CC DEG C CC/MOLE ATM.
.3313 478.80 598.28 24.35

DIFFUSION COEF. = .044 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.90 - 03 CENTIPoise

END OF COMPOUND EA 2337 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2337 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 198.2 GENERAL REFERENCE: ARCSL-TR-77001
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.85660, B = 2866.80, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 27.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(10^5RR)= .19+01
ESTIMATED BOILING POINT(CENT.)= 178.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.3
VOLATILITY(MG/DEG. CUBED)= .18+05 VAPORIVITY(MILLIMOLE/ DEG. CUBED)= .90+02
DENSITY(G/ML)= 1.0149 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.0490 - .00095 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.27820, B = -312.12, C = 160.2 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISILOES) = 1.931
MELTING POINT (DEG. CENT.) = -19.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCGUICHAN-YOUNG(CENTIGRADE) = 107.0 REFERENCE: ARCSL-TR-77001
THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURK. FIT KHIM. 37: 201 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
.3313 406.95 598.28 24.38
DIFFUSION COEF. = .049 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR
THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 6.24-03 CENTIPOISE

END OF COMPOUND EA 2337 AT 40.0 DEGREE
SUMMARY OF PROPERTIES OF EA 2361 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: Formula weight: 182.2  GENERAL REFERENCE: ARCSL-TR-77001

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MIGHT NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.77900, B= 2778.10, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -25.0 TO +50 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .73-03
ESTIMATED BOILING POINT (CENT.) = 197.9
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 12.7
VOLATILITY (mg/meter cubed) = 92-01

VOLATILITY (m/METER CUBED) = 50-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

DENSITY (g/ml) = 1.2151 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - .00105 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENSTIKES) = 10.095

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

FLASH POINT, W.CUTCHAN-BOYD (CENTIGRADE) = 98.0  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37, 201(1963)

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQU. J.PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 4.79-03 CENSTIKES

END OF COMPOUND EA 2361 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2361 AT -20.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT:  192.2  GENERAL REFERENCE: ARCSL-TR-7701

**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE.  ****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.77900, B = 2778.10, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -25.0 TO -1.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

"VAPOR PRESSURE"[TOK]= .84-02
ESTIMATED BOILING POINT[CENT.]= 197.3
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.7
VOLATILITY(KG/METER CUBED)= .74+02  VOLATILITY(MILLIMOLE/METER CUBE)= .40+00

DENSITY(G/ML) = 1.1940 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - .00105 xTEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE.  ****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.54720, B = -439.37, C = 212.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES)= 5.480  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
CH/CC DEG C CC/MOLE ATM.
.5694 412.79 493.30 29.80

DIFFUSION COEF. = .036 CM-SQ./SEC  CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN. J.PHYS.CHEM.48.231(1944)

VISCOSITY OF VAPOR = 5.28-03 CENTIPOISE

END OF COMPOUND EA 2361 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2361 AT 0.0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT: 162.2  
GENERAL REFERENCE: ARCS-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
8: VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 877900, B= 2778.10, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE -25.0 TO 0.0 DEG. CENT.  REFERENCE: ARCS-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
  VAPOR PRESSURE(TOPR)= .41-01
  ESTIMATED BOILING POINT(CENT.)= 197  
  HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.7
  VOLATILITY(MG/METER CUBED)= .43+03
  VOLATILITY(MILLIMOLE/ METER CUBED)= .24+01
  DENSITY(G/ML)= 1.1731 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1731 - .00105 *TEMP.(C.) DETERMINED OVER
  THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCS-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -1.54720, B= -439.67, C= 212.3 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCS-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
  VISCOSITY(CENTISTOKES)= 3.338

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)= 98.0  REFERENCE: ARCS-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
0.484 CC DEG C CC/MOLE ATM.
.3694 412.79 493.30 29.80

DIFFUSION COEF. = .042 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY. CHEM. 48,23(1944)  VISCOSITY OF VAPOR = 5.78-03 CENTIPOISE

END OF COMPOUND EA 2361 AT .0 DEGREES C.  PAGE NUMBER B-267
SUMMARY OF PROPERTIES OF EA 2321, 120 DEGREES, CENTIGRADE.

The following properties were determined over the temperature range 25.0 to 45.0 deg. cent.: density, 1.7231 to 1.7495; specific heat, 1.11 to 0.99 cal./g. deg. cent.; specific volume, 0.06; and thermodynamic properties, 197.9 cal./mole. This data is extrapolated from the equation:

\[ d = 1.7231 + 0.0015 \times (T - 25.0) \]

The following properties were determined over the temperature range 75.0 to 100.0 deg. cent.: density, 1.7231 to 1.7510; specific heat, 0.89 to 0.99 cal./g. deg. cent.; specific volume, 0.06; and thermodynamic properties, 197.9 cal./mole. This data is extrapolated from the equation:

\[ d = 1.7231 + 0.0015 \times (T - 25.0) \]

The following properties were determined over the temperature range 0.0 to 25.0 deg. cent.: density, 1.7231 to 1.7550; specific heat, 1.11 to 0.99 cal./g. deg. cent.; specific volume, 0.06; and thermodynamic properties, 197.9 cal./mole. This data is extrapolated from the equation:

\[ d = 1.7231 + 0.0015 \times (T - 25.0) \]

The following properties were determined over the temperature range 0.0 to 25.0 deg. cent.: density, 1.7231 to 1.7510; specific heat, 0.89 to 0.99 cal./g. deg. cent.; specific volume, 0.06; and thermodynamic properties, 197.9 cal./mole. This data is extrapolated from the equation:

\[ d = 1.7231 + 0.0015 \times (T - 25.0) \]

The following properties were determined over the temperature range 0.0 to 25.0 deg. cent.: density, 1.7231 to 1.7550; specific heat, 1.11 to 0.99 cal./g. deg. cent.; specific volume, 0.06; and thermodynamic properties, 197.9 cal./mole. This data is extrapolated from the equation:

\[ d = 1.7231 + 0.0015 \times (T - 25.0) \]
SUMMARY OF PROPERTIES OF EA 2361 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 182.2

GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCLOUS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 2.77900, B = 2776.10, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE -25.0 TO 60.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WAVE PRESSURE (Torr): .29+00

ESTIMATED BOILING POINT (DEG. CENT.): 187.9

HEAT OF VAPORIZATION (KCAL/GRAM/MOLE): 12.7

VOLATILITY (GRAM/METER CUBED) = 3.20+04

VOLATILITY (MILLIMETER CUBED/METER CUBED) = 16+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.1488 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - .00105 * TEMP. (C) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.54720, B = -435.67, C = 212.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CFHT. REFERENCE: ARCSL-TR-77001

WAVE PRESSURE (Torr): .29+00

FLASH POINT: MCCUTCHAN-YOUNG (CENTIGRADE) = 98.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GAS G = 0.5442 CC/DEG C = 5.56 G/MOL/ATM = 295.80

DIFFUSION COEF. = .051 CM.-SQ. /SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.48.23(1944) VISCOSITY OF VAPOR = 0.39-03 CENTIPoise

END OF COMPOUND EA 2361 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 2361 AT 40.0 DEGREES CENTIGRADE
FORMULA WEIGHT: 182.2  GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE. *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.77900, B = 2778.10, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE -25.0 TO .0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
WAS USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 4.81 x 10^3
ESTIMATED BOILING POINT (CENT.) = 197.9
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 12.7
VOLATILITY (MG/METER CUBED) = .75 x 10^4 VOLATILITY (MILLIMOLE/ METER CUBED) = .41 x 10^2

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE. *****

DENSITY (G/ML) = 1.1311 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1731 - .00305 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -1.54720, B = -4.19671, C = 212.3 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
WAS USED TO CALCULATE THE VISCOSITY

VISCOITY (CENTISTOKES) = 1.568

FLASH POINT, MCCUTCHAN-YOUNG (CENTIGRADE) = 96.0  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOVIC.  ZHURN. FIZ KHIIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
44/CC DEG CC CC/MOLE ATM.
-3094 412.79 493.30 29.80

DIFFUSION COEF. = .057 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J. PHYS. CHEM. 48, 23 (1944)

VISCOITY OF VAPOR = 6.76 x 03 CENTIPoise

END OF COMPOUND EA 2361 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3307 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 219.2

GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS:(LATR 4491): A* = 9.70850, B* = 3114.70, C* = 251.8 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 55.0 DEG. CENT. REFERENCE ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 10.04
ESTIMATED BOILING POINT(CELSIUS) = 204.5
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 17.2
VOLATILITY(MG/METER CUBED) = 15.00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 3307 AT -40.0 DEGREES C.

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UNCLASSIFIED

Appendix B

END OF DOCUMENT EA 3307 AT -20.0 DEGREES C.

PAGE NUMBER 9-272
SUMMARY OF PROPERTIES OF EA 3307 AT 0 DEGREES CENTIGRADE


***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.70850, B = 311.870, C = 251.8 DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 55.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 0.22-02
ESTIMATED BOILING POINT (CENT.) = 204.5
HEAT OF VAPORIZATION (KILOCALORIES/MOLE) = 16.7
VOLATILITY (MO/METER) = 0.28-02  VOLATILITY (MILLIMOLE/METER CUBED) = 1.3+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 3307 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3307 AT 20.0 DEGREES CENTIGRADE


**** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO UNCLASSIFIED TEMPERATURE  ****

THE FOLLOWING ANTOINE CONSTANTS (LITAR 4491):  A = 9.7085, B = 3114.70, C = 251.8 DETERMINED OVER THE
TEMPERATURE RANGE 10.0 TO 55.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THESE CONSTANTS WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 10-01
ESTIMATED BOILING POINT (CENT.) = 204.5
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 16.6
SOLUBILITY (MG/METER CUBED) = 21+03
VOLATILITY (MILLIMOLE/METER CUBED) = .97+00

END OF COMPOUND EA 3307 AT 20.0 DEGREES C.  PAGE NUMBER 8-274
SUMMARY OF PROPERTIES OF EA 3307 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:
FORMULA WEIGHT: 219.2
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 9.70650, B = 3114.70, C* = 251.8 DETERMINED OVER THE
TEMPERATURE RANGE 40.0 TO 55.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 2901
ESTIMATED BOILING POINT (CENL) = 204.5
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 16.5
VOLATILITY (MG/METER CUBED) = 3403
VOLATILITY (MILLIMOLE/METER CUBED) = 1801

END OF COMPOUND EA 3307 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3307 AT 40.0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT:  219.2  
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOLD TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANGEE USES(EATR 4491): A = 8.70859, B = 314.70, C = 251.8. DETERMINED OVER THE TEMPERATURE RANGE 10.0 TO 55.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .11 x 10
ESTIMATED BOILING POINT(CESTY.) = 204.5
HEAT OF VAPORIZATION(KILOCALORIE/MOLE) = 10.4
VOLATILITY(MG/METER CUBED) = .12 x 10
VOLATILITY(MILLIMOLE/ METER CUBED) = .55 x 10

END OF COMPOUND EA 3307 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3430 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT: 180.2  GENERAL REFERENCE: ARCSL-TR-77001

*** WARNING THE REQUESTED TEMPERATURE IS BELOW THE MELTING POINT. THEREFORE THE LIQUID PROPERTIES ARE
VALID ONLY FOR SUCOODED LIQUID AND NOT THE SOLID *****

DENSITY(G/ML) = 1.2091 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1871 - .00105 * TEMP.(°C) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -7.19770, B = -781.80, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 14.300

*** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -37.9  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV, ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3676 469.97 489.90 29.80

DIFFUSION COEFF. = .030 CM.SQ./SFC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY. CHEM. 48,23(1944)  VISCOSITY OF VAPOR = 4.80-03 CENTIGRADE

END OF COMPOUND EA 3430 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3430 AT -20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 1RC.2

GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSITY (C/ML) = 1.1751 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1671 - .00105 * (T.C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EATF 4481): A = -2.19779, B = 781.80, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 773

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -27.8 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZKHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM
.3678 409.37 489.90 29.88

DIFFUSION COEF. = .036 CM. SQ./SEC CALCULATED FOR VAPOUR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHYS. CHEM. 48, 23 (1944) VISCOSITY OF VAPOUR = 5.29-53 CENTIPoise

END OF COMPOUND EA 3430 AT -20.0 DEGREES C. PAGE NUMBER B-278
UNCLASSIFIED

APPENDIX B

SUMMARY OF PROPERTIES OF EA 9430 AT 0 DEGREES C.

FORMULA: C 20 H 33

MOLAR WEIGHT: 306.45

A BOILING POINT AND FREEzing POINT DATA FOR THIS COMPOUND, AND THERE IS NO VAPOR PRESSURE DATA EXTENDED

DENSITY, VISCOSITY, AND CRYSTAL FORM OF THE MATERIAL WERE DETERMINED OVER THE TEMPERATURE RANGE 25 TO 100 DEG. C.

*NOTE: DENSITY FOR LIQUID PHASE WAS DETERMINED AT 25 DEG. C.

THE VISCOSITY OF THE LIQUID MATERIAL WAS DETERMINED BY THE DILATATION METHOD OF W. H. JALLINGER.

TIDE: 0.357 G./ML.

MELTING POINT: 84.1 DEG. C.

REFERENCES: ARSCL-TR-77-001

THE FOLLOWING CRITICAL PROPERTIES WERE DETERMINED USING THE METHOD OF LIPPOY :

CRITICAL TEMPERATURE: 573 DEG. K.
CRITICAL PRESSURE: 12.20 MPAS
CRITICAL VOLUME: 0.00799 M.3/ MOLE
CRITICAL DENSITY: 0.00547 G./ML.

DIFFUSION COEFF. = 0.02 CM.2/SEC. CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ARBOE CRITICAL PROPERTIES AND THE MONTEITH SUTHERLANDS CORRELATION FORMULA.

END OF COMPOUND EA 3430 AT 0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 3430 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 180.2 GENERAL REFERENCE: ARCSTL-TR-77001

***** WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL

DENSTY( g/mL) = 1.1461 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1671 - 0.0105 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSTL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -2.19770, B = -781.80, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSTL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 2.946

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -37.8 REFERENCE: ARCSTL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. Fiz Khim. 37, 201 (1963)

CF/CC DEG C CC/MOLE ATM.
.3679 409.97 409.90 29.60

DIFFUSION COEF. = .049 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 0.280-3 CENTIPOISE

END OF COMPOUND EA 3430 AT 20.0 DEGREES C. PAGE NUMBER 9-280
SUMMARY OF PROPERTIES OF EA 3430 AT 25.0 DEGREES CENTIGRADE
COMMON NAME:  FORMULATION: 100.2  GENERAL REFERENCE: ARCSL-TR-77001

*WARNING: SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL.

DENSITY (G/ML) = 1.1469 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1871 -.00105 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = -2.19770, B = -781.80, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WAVE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) =

MELTING POINT (DEG. CENT.) = -37.6  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37, 2011(1983)

CRITICAL TEMPERATURE VOLUMEPRESSURE
G/CC DEG C CC/MOLE ATM.
.3878 409.97 489.90 29.68

DIFFUSION COEF. = .051 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

END OF COMPOUND EA 3430 AT 25.0 DEGREES C.  PAGE NUMBER 8-281
SUMMARY OF PROPERTIES OF EA 3430 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 180.2
GENERAL REFERENCE: ARCSL-TR-77001

**WARNING:** SINCE THERE IS NO BOILING POINT DATA FOR THIS COMPOUND AND THERE IS NO VAPOR PRESSURE DATA TO ESTIMATE A BOILING POINT, THE VALUES CALCULATED ABOVE THE DATA RANGES MAY BE ABOVE BOILING POINT AND NOT MEANINGFUL.

DENSITY (G/ML) = 1.1251 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1671 - .00105 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCES: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 2.19770, B = .781.80, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCES: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 1.990

MELTING POINT (DEG. CENT.) = -97.0 REFERENCES: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37, 201 (1963)

<table>
<thead>
<tr>
<th>DENSITY TEMPERATURE</th>
<th>VOLUME PRESSURE</th>
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<td>0.0670</td>
<td>409.97</td>
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<tr>
<td>0.0870</td>
<td>499.99</td>
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</table>

DIFFUSION COEF. = .057 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN., J. PHYS. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 6.77-03 CENTIPoise

END OF COMPOUND EA 3430 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4349 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 208.2
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOL TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4451): A = 6.00900, B = 1714.70, C = 181.1 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.29-05
ESTIMATED BOILING POINT(CENT.) = 354.8
HEAT OF VAPORIZATION(KILOCALOR/ES/MOLE) = 19.4
VOLATILITY(MG/METER CUBED) = 0.41-01
VOLATILITY(MILLIMOLE/ METER CUBE) = 0.26-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.1145 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 - 0.00090 -TEMP.(C.) DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTICKS) = 128.744

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ. KHIM. 37. 20 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATN.
.3477 480.21 598.78 26.96

DIFFUSION COEF. = 0.026 CM.SQ /SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.48.23(1944) VISCOSTY OF VAPOR = 4.21-03 CENTIPoise

END OF COMPOUND EA 4349 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES C7 EA 4349 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 208.2
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.03900, B = 1714.70, C = 198.1 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 0.69-04
ESTIMATED BoILING POINT(CENT.) = 354.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 17.0
VOLATILITY(MG/METER CUBED) = 0.01-00 VOLATILITY(MILLIMOLE/ METER CUBED) = 0.44-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.1465 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 - .00090 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.32200, B = -380.90, C = 145.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 35.586

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G3/CC DEG C CC/MOLE ATM.
.3477 480.21 598.78 26.96

DIFFUSION COEF. = .031 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J.PHY.CHEM.46.23(1944) VISCOSITY OF VAPOR = 4.65-03 CENTIPOISE

END OF COMPOUND EA 4349 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4349 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 209.2 GENERAL REFERENCE: ARCSL-TR-77001

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 6.03900 B = 1714.70 C = 188.1 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

- VAPOR PRESSURE (TORR) = .04-03
- ESTIMATED BOILING POINT (CENT. ) = 254.8
- HEAT OF VAPORIZATION (KCAL/ MOLE) = 16.5
- VOLATILITY (MG/METER CUBED) = .10-02

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.1285 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 - .00090 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -1.33200 B = -305.96 C = 145.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 1.260

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE RESULTS OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201(1953)

- DENSITY TEMPERATURE VOLUME PRESSURE
- 1.40 CC/DEG.C CC/ATM
- 460.2 298.78 24.96

DIFFUSION COEFF. = .037 CM.50/SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.09-03 CENTIPOISE

END OF COMPOUND EA 4349 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4349 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 206.2 GENERAL REFERENCE: ARCSL-TR-77001

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 0.03600, B = 1714.70, C = 188.1 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = 0.3222
ESTIMATE BOILING POINT (CENT.) = 350.4
HEAT OF VAPORIZATION (KCAL/MOLE) = 15.6
VOLATILITY (MG/METER CUBED) = .72+2 VOLATILITY (MILLIMOLE/ METER CUBED) = .34+00

DENSITY (G/ML) = 1.1195 WAS CALculated FROM THE EQUATION: DENSITY = 1.1285 - .00090 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 7.130

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

.9477 480.21 598.78 26.96

DIFFUSION COEFF. = .043 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.: J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.54-03 CENTIPoise

END OF COMPOUND EA 4349 AT 20.0 DEGREES C.

PAGE NUMBER 8-286
SUMMARY OF PROPERTIES OF EA 4349 AT 25.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 208.2 GENERAL REFERENCE: ARCSL-TR-77001

** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE. MAN.

THE FOLLOWING ANTOINE CONSTANTS(EART R 4491): A = 6.03900, B = 1714.70, C = 134.1 DETERMINED OVER THE TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .98-92
ESTIMATED BOILING POINT (CENT.) = 354.8
HEAT OF VAPORIZATION (KILocalORIES/MOLE) = 15.3
VOLATILITY (ML/METER CUBED) = .11+03 VOLATILITY (MILLIMOLE/METER CUBED) = .53+00

DENSITY (g/ml) = 1.1080 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 - .00950 * TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EART R 4491): A = -1.33200, B = -360.96, C = 145.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOITY:

VISCOITY (CENStokes) = 6.151

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM, 37, 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G34/CC DEG C CC/MOLE ATM.
.3477 420.21 598.76 26.98

DIFFUSION COEF. = .644 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY. CHEM, 49, 23 (1944)

VISCOITY OF VAPOR = 5.65-03 CENTIPoise
SUMMARY OF PROPERTIES OF EA 4349 AT 40.0 DEGREES CENTIGRADE

COMMON NAME:         FORMULA WEIGHT:  208.2  
GENERAL REFERENCE: ARCSL-TR-77001

****** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 6.03000, B = 17.44-70, C = 198.1 DETERMINED OVER THE
TEMPERATURE RANGE 15.0 TO 50.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VOLATILITY(MG/METER CUBED) = .35+03
DENSITY(G/ML) = 1.0925 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1285 - .00090 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 4.141

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
Zhurn. Fiz Khim. St. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/ACC DEG C CC/MOLE ATM
.9477 480.21 596.78 26.96

DIFFUSION COEF. = .049 cm.2/sec CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.98-03 CENTIPOISE

END OF COMPOUND EA 4349 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4923 AT -40.0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA HEIGHT:  122.1  GENERAL REFERENCE: MRC-DA-263 DEC 70

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.36642, B = 1710.85, C = 212.8 DETERMINED OVER THE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 1.25+02
ESTIMATED BOILING POINT(CENT.) = 173.8
HEAT OF VAPORIZATION(KILOCALORIES/ MOLE) = 14.2
VOLATILITY(MG/METER CUBED) = 0.21+02 VOLTILITY(MILLIMOLE/ METER CUBED) = 0.17+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0289 CALCULATED FROM THE EQUATION: DENSITY = 0.9937 - 0.0008B * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -0.90640, B = -148.99, C = 112.8 DETERMINED OVER THE TEMPERATURE RANGE .5 TO 50.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70
WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY(CENTISTOKES) = 13.775

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION(DYNE/CM) = 36.7171 - 11466*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70
WERE USED TO CALCULATE THE SURFACE TENSION 41.3 DYNE/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT(DEG. CENT.) = -103.9  REFERENCE: MRC-DA-263 12/70 APPROXIMATE
REFRACTIVE INDEX(ND) = 1.5626 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.6434 - 0.00486*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70
FLASH POINT, OPEN CUP(CENTIGRADE) = 56.0 REFERENCE: MRC-DA-263 12/70
MELTING POINT DEPRESSION(DEG. C./MOLE) = -103.000 REFERENCE: MRC-DA-263 DEC 70 APROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM, 37, 20 (1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
3122 416.69 391.68 37.91

DIFFUSION COEF. = .036 CM. 50./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQU. , J.PHY.CHEM,10,23(1944)  VISCOSITY OF VAPOR = 4.55-03 CENTIPOISE

END OF COMPOUND EA 4923 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4923 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: AEA 4923
FORMULA WEIGHT: 122.1
GENERAL REFERENCE: MRC-DA-263 DEC 70

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.30642, B = 1710.85, C = 212.8 DETERMINED OVER THE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-263 & B 8343 P 50 COMB. EQU.
WAS USED TO CALCULATE THE FOLLOWING PROPERTIES:

- VAPOR PRESSURE (TORR) = .27-01
- ESTIMATED BOILING POINT (C.): 173.8
- HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.5
- VOLATILITY (G/METER CUBED) = .71-03
- VOLATILITY (MILLIMOLE/METER CUBED) = .17-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.0113 WAS CALCULATED FROM THE EQUATION: DENSITY = .9937 - .00088 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WAS USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 4.994

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE EQUATION: SURFACE TENSION (DYNES/CM) = 36.7171 - .1146 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WAS USED TO CALCULATE THE SURFACE TENSION 39.0 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -103.0 REFERENCE: MRC-DA-263 12/70 APPROX
REFRACTIVE INDEX (N D) = 1.5230 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (N D) = 1.5434 - .00049 * TEMPERATURE (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 6.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

FLASH POINT, OPEN CUP (CENTIGRADE) = 56.0 REFERENCE: MRC-DA-263 12/70

MELTING POINT DEPRESSION (DEG. C. / MOLE) = -103.000 REFERENCE: MRC-DA-263 DEC 70 APROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHM. 37, 201(1963)

DENSITY TEMPERATURE PRESSURE
G/M CC DEG C CC/MOLE ATM
.018 418.69 91.08 37.91

DIFFUSION COEF. = .043 CM. SQ./SEC. CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQU. J. PHYS. CHEM 49, 23(1944) VISCOSITY OF VAPOR = 5.02-03 CENTIPoise

END OF COMPOUND EA 4923 AT -20.0 DEGREES C.

PAGE NUMBER 8-290
SUMMARY OF PROPERTIES OF EA 4923 AT .0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 122.1 GENERAL REFERENCE: MRC-DA-263 DEC 70
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.30642, B = 1710.05, C = 212.8 DETERMINED OVER THE
TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-263&NB9343 P50 COMO.EQU
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 1.8406
ESTIMATED BOILING POINT(CENT.) = 173.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.9
VAPOR VOLATILITY(MG/METER CUBED)= .13+04 VOLATILITY( MILLIMOLE/ METER CUBED)= .11+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
DENSITY(G/ML) = 9.337 WAS CALCULATED FROM THE EQUATION: DENSITY = .9937 -.00488 *TEMP.(C.) DETERMINED OVER THE
TEMPERATURE RANGE .5 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.90640, B = -148.99, C = 112.8 DETERMINED OVER THE
TEMPERATURE RANGE .5 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WERE USED TO CALCULATE THE VISCOSITY

\[ \text{VISCOSITY (CENTISTOKES)} = 2.594 \]

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
THE EQUATION: SURFACE TENSION(DYNE/CM) = 36.7171 - 1.1146*TEMP.(C.)
DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WERE USED TO CALCULATE THE SURFACE TENSION:

\[ \text{SURFACE TENSION} = 36.7 \text{ DYNE/CM} \]

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
MELTING POINT (DEG. CENT.) = -103.0 REFERENCE: MRC-DA-263 12/70 APPROXIMATE
REFRACTIVE INDEX(ND) = 1.5434 WAS CALCULATED FROM THE EQUATION:

\[ \text{REFRACTIVE INDEX(ND)} = 1.5434 - .00048*\text{TEMPERATURE(C.)} \]

DTERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
FLASH POINT, OPEN CUP(CENTIGRADE)= 56.0 REFERENCE: MRC-DA-263 12/70
MELTING POINT DEPRESSION(DEG. C./MOLE)= -103.000 REFERENCE: MRC-DA-263 DEC 70 APROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOD.

ZHURN. FIZ KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3122 418.69 391.08 37.91

DIFFUSION COEF. = .051 CM./SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.49-03 CENTIPoise

END OF COMPOUND EA 4923 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4923 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 122.1

GENERAL REFERENCE: MRC-DA-263 DEC 70

THE FOLLOWING ANTOINE CONSTANTS (EA7 4491): A = 7.30642, B = 1710.85, C = 212.8 DETERMINED OVER THE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-263&NB343 P50 COMB. EQU.

WAS USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TOPR) = .91+00
ESTIMATED BOILING POINT (CENT.) = 173.8
HEAT OF Vaporization (Kcalories/mole) = 12.4
VOLATILITY (mg/meter cubed) = .81+04

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (g/ml) = .9781 WAS CALCULATED FROM THE EQUATION: DENSITY = .9937 - .00088 * TEMP. (C) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 85.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS (EA7 4491): A = -.90640, B = -148.99, C = 112.8 DETERMINED OVER THE TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

WERE USED TO CALCULATE THE SURFACE TENSION

VISCOSITY (CENTISTOKES) = 1.641

THE EQUATION: SURFACE TENSION (DYNES/CM) = .5144 - .1146 * TEMP. (C)

DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

WERE USED TO CALCULATE THE SURFACE TENSION

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -103.0 REFERENCE: MRC-DA-263 12/70 APPROXIMATE

REFRACTIVE INDEX (NO) = 1.5338 WAS CALCULATED FROM THE EQUATION:

REFRACTIVE INDEX (NO) = 1.5434 - .00048 * TEMPERATURE (C) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

FLASH POINT, OPEN CUP (CENTIGRADE) = 58.0 REFERENCE: MRC-DA-263 12/70

MELTING POINT DEPRESSION (DEG. C./MOLE) = -103.000 REFERENCE: MRC-DA-263 DEC 70 APROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FISHPOL

ZHURN. FIZ KHIM. 31, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE

GM/CC DEG C CC/MOLE ATN.

.3122 418.69 391.08 37.91

DIFFUSION COEF. = .059 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J. PHY. CHEM. 48, 23 (1941)

VISCOSITY OF VAPOR = 5.96-03 CENTIPoise

END OF COMPOUND EA 4923 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4923 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 122.1 GENERAL REFERENCE: MRC-DA-263 DEC 70

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.30642, B = 1710.85, C = 212.8 DETERMINED OVER THE TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT. REFERENCE: MRC-DA-263 & NB8343 P50 COMB.EQU.
WE WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(Torr) = 130.1
ESTIMATED BOILING POINT(cent.) = 173.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.3
VOLATILITY(MG/METER CUBED) = .85+04 VOLATILITY(MILLIMOLE/METER CUBED) = .70+02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = .9717 WAS CALCULATED FROM THE EQUATION: DENSITY = .9937 -.00088 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.90640, B = -148.99, C = 112.8 DETERMINED OVER THE TEMPERATURE RANGE .5 TO 50.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WE WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 1.495

THE EQUATION: SURFACE TENSION(JYNES/CM) = 36.7171 -.1146*TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
WE WERE USED TO CALCULATE THE SURFACE TENSION 33.9 DYNES/CM

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -103.0 REFERENCE: MRC-DA-263 12/70 APPROXIMATE
REFRACTIVE INDEX(ND) = 1.5314 WAS CALCULATED FROM THE EQUATION:
REFRACTIVE INDEX(ND) = 1.5434 -.00048*TEMPERATURE(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CENT. REFERENCE: MRC-DA-263 12/70
FLASH POINT, OPEN CUP(CENTIGRADE) = 56.0 REFERENCE: MRC-DA-263 12/70
MELTING POINT DEPRESSION(DEG. C./MOLE) = -103.000 REFERENCE: MRC-DA-263 DEC 70 APROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201(1933)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3122 418.69 391.08 37.91

DIFFUSION COEF. = .002 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,40,23(1944) VISCOSITY OF VAPOR = 0.06-03 CENTIPoise

END OF COMPOUND EA 4923 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 4923 AT 40.0 DEGREES CENTIGRADE  
COMMON NAME:  FORMULA WEIGHT:  122.1  GENERAL REFERENCE: MRC-DA-263 DEC 70

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A =  7.30642, B = 1710.85, C = 212.8 DETERMINED OVER THE  TEMPERATURE RANGE 45.0 TO 174.0 DEG. CENT.  REFERENCE: MRC-DA-263&88343 P50 COMB.EQU  
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:  
VAPOR PRESSURE(TORR)= 538.0  
ESTIMATED BOILING POINT(CENT.)= 173.8  
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 12.0  
VOLATILITY(MG/METER CUBED)= .22+05  VOLATILITY(MILLIMOLE/ METER CUBED)= .18+03  
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****  
DENSITY(G/ML)= .9585 WAS CALculated FROM THE EQUATION: DENSITY= .9937  - .00088 *TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70  
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A = -90640, B = -148.99, C = 112.8 DETERMINED OVER THE TEMPERATURE RANGE .5 TO 50.0 DEG. CENT.  REFERENCE:MRC-DA-263 12/70  
WERE USED TO CALCULATE THE VISCOSITY  
VISCOSITY(CENTISTOKES )= 1.171

THE EQUATION: SURFACE TENSION(DYNES/CM)=  36.7171 - .1146 *TEMP.(C.)  
DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 65.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70  
WERE USED TO CALCULATE THE SURFACE TENSION 32.1 DYNES/CM  
MELTING POINT (DEG. CENT.) = -103.0  REFERENCE: MRC-DA-263 12/70 APPROXIMATE  
REFRACTIVE INDEX(D) = 1.5242 WAS CALCULATED FROM THE EQUATION:  
REFRACTIVE INDEX(D)= 1.5434  - .00048*TEMPERATURE(C.)  DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 60.0 DEG. CENT.  REFERENCE: MRC-DA-263 12/70  
FLASH POINT, OPEN CUP(CENTIGRADE)= 56.0  }{$\text{REFERENCE: MRC-DA-263 12/70}$  
MELTING POINT DEPRESSION(DEG. C./MOLE)= -103.000  REFERENCE: MRC-DA-263 12/70 APPROX

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  
ZHURN. FIZ KHIM. 37. 201(1963).  

DENSITY TEMPERATURE VOLUME PRESSURE  
GM/CC DEG C CC/MOLE ATM.  
.1122 418.69 391.08 37.91

DIFFUSION COEF. = .069 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE  
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)  
VISCOSITY OF VAPOR = 6.43-03 CENTIPOISE

END OF COMPOUND EA 4923 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 219.2
GENERAL REFERENCE: ARCSL-TR-77001

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 10.75150, B = 3658.20, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .12-04
ESTIMATED BOILING POINT(CENT.) = 191.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.7
VOLATILITY(MG/METER CUBED) = .17-00 VOLATILITY(MILLIMOLE/METER CUBED) = .79-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0670 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0350 + .00080 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -3.10540, B =-1153.22, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001 WERE USED TO CALCULATE THE VISCOSITY

Viscosity(Centistokes) = 69.324

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37, 201(1983)

DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3171 499.98 691.18 23.97

DIFFUSION COEF. = .023 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHYS. CHEM,48,23(1944) VISCOSITY OF VAPOR = 3.85-03 CENTIPOISE

END OF COMPOUND EA 5265 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT -20.0 DEGREES CENTIGRADE


***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 10.75150, B= 3658.20, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= 20.0-03
ESTIMATED BOILING POINT(DEC.)= 191.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 16.7
VOLATILITY(MG/METER CUBED)= .28+01 VOLATILITY(MILLIMOLE/METER CUBED)= .13-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(GL/ML)= 1.0510 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0352 - .00080 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= -3.10540, B= -1153.22, C= 273.2 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 28.189

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG. C CC/MOLE ATM.
.3171 499.88 691.18 23.97

DIFFUSION COEF. = .028 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY. CHEM.48.23(1944) VISCOSITY OF VAPOR = 4.25-03 CENTIPoise

END OF COMPOUND EA 5265 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT -0 DEGREES CENTIGRADE

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 44X): A* = 10.75150, B* = 3659.20, C* = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .23-02
ESTIMATED BOILING POINT(CENT.) = 191.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.7
VOLATILITY(MG/METER CUBED) = .29-02 VOLATILITY(MILLIGRAM/METER CUBED) = 13+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.0350 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0350 - 00080 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 13.078
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV ZHURN. FIZ KHIK. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
.3171 495.08 691.18 23.97

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ. J.PHY.CHEM,48,23(1944) VISCOSITY OF VAPOR = 4.66-03 CENTIPoise

END OF COMPOUND EA 5265 AT -0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT 20.0 DEGREES CENTIGRADE


***** WARNING:  SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A= 10.75150,  B= 3658.20,  C= 273.2 DETERMINED OVER THE
TEMPERATURE  = 20.0 TO 30.0 DEG. CENT.  REFERENCE:  ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .10 - 01
ESTIMATED BOILING POINT(CENT.) = 191.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.7
VOLATILITY(MG/METER CUBED) = .22 x 03  VOLATILITY(MILLIMOLE/ METER CUBED) = .10 + 01
DENSITY(G/ML) = 1.0190 WAS CALCULATED FROM THE EQUATION:  DENSITY = 1.0350 - .00080 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE  25.0 TO  45.0 DEG. CENT.  REFERENCE:  ARCSL-TR-77001

***** WARNING:  THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491):  A= -3.10540,  B= -1153.22,  C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE  25.0 TO  45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTOKES) = 6.137

***** WARNING:  THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC  DEG C  CC/MILOSE  ATM.
.3171  499.08  691.18  23.97

DIFFUSION COEF. = .009 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.,  J.PHY.CHEM 48, 25(1944)

VISCOITY OF VAPOR = 5.07 - 03 CENTIPOISE

END OF COMPOUND EA 5265 AT  20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT 25.0 DEGREES C. **RAGE

COMMON NAME:  
FORMULA WEIGHT: 219.2  GENERAL REFERENCE: ARCSL-TR-77001

*** WARNING: SINCE THERE IS NO MEETING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE.***

THE FOLLOWING ANTOINE CONSTANTS: (EATR 4491): A = 10.75150, B = 3658.20, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

- VAPOR PRESSURE (TOPR) = 0.33-01
- ESTIMATED BOILING POINT (CENT.) = 191.6
- HEAT OF VAPORIZATION (KCAL/MOLE) = 16.7
- VISCOSITY (MG/METER CUBED) = 16-01

DENSITY (G/MIL) = 1.0150 WAS CALCULATED FROM THE EQUATION: DENSITY = 4.0350 + 0.0080C * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS: (EATR 4491): A = -3.10546, B = 1153.22, C = 272.2 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 5.788

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  
ZHURN. FIZ. KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GM/CCL DEG C CC/MOLE ATM.
317.1 499.88 691.18 23.97

DIFFUSION COEF. = .040 CM. SQ./SEC CALCULATED FOR VAPOOR IN AIR

THE VISCOITY OF THE VAPOOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQN., J. PHYS. CHEM. 48, 23 (1944)  VISCOSITY OF VAPOOR = 5.17-03 CENTISTOKES

END OF COMPOUND EA 5265 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5265 AT 40.0 DEGREES CENT:GRADE


***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT

BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4431): A = 10.75150, B = 3658.20, C = 273.2 DETERMINED OVER THE

TEMPERATURE RANGE 20.0 TO 30.0 DEG. CENT. REFERENCE: ARCS-L-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)* = .12+00

ESTIMATED BOILING POINT(CEENT.) = 191.6

HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.7

VOLATILITY(MG/METER CUBED) = .13+04

VOLATILITY(MILLINOLE/METER CUBED) = .60+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(ML/ML) = 1.0030 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0350 - .00080 *TEMP.(C.) DETERMINED OVER THE

TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCS-L-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -3.10540, B = 1153.22, C = 273.2 DETERMINED OVER THE

TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE:ARCS-L-TR-77001

WERE USED TO CALCULATE THE VISCOITY

VISCOITY(CENTISTOKES) = 3.776

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE

G/M.CC DEG.C CC/ATM. ATM.

.3171 499.88 691.18 23.97

DIFFUSION COEF. = .044 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE

MODIFIED SUTHERLANDS EQ,. J.PHYS.CHEM.48.2 (1944) VISCOSITY OF VAPOR = 5.48-03 CENTISOSE
SUMMARY OF PROPERTIES OF EA 5365 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 198.2  GENERAL REFERENCE: EC-TR-76058

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.89720, B = 27711.90, C = 253.0 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 146.0 DEG. CENT.  REFERENCE: EC-TR-76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .44-04
ESTIMATED BOILING POINT(CENT.) = 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.2
VOLATILITY(MG/METER CUBED) = .60+00 VOLATILITY(MILLIMOLE/ METER CUBED) = .30-02

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.2147 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1755 -.0098 X TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: NBS484 SUPERCOOLED SOLIDS LIQ

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GM/CC DEG C CC/MOLE ATM.
.3051 453.36 542.84 26.68

DIFFUSION COEF. = .027 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM,48,23(1944)  VISCOSITY OF VAPOR = 4.50-03 CENTIPOISE

END OF COMPOUND EA 5365 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5365 AT -30.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 198.2 GENERAL REFERENCE: EC-TR-76058

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EAIR 4491): A= 8.66720, B= 2778.90, C= 253.0 DETERMINED OVER THE TEMPERATURE RANGE 30.0 TO 145.0 DEG. CENT. REFERENCE: EC-TR-76058

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(Torr)= .58-03
ESTIMATED BOILING POINT(CENT.)= 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 15.0
VOLATILITY(MG/METER CUBED)= .73+01 VOLATILITY(MILLIMOLE/ METER CUBED)= .37-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)= 1.1951 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1755+.00098 * TEMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NBS484 SUSPENDED SOLIDS LIQ

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ. KHIM. 37, 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE GM/CC DEG C CC/MOLE ATM.
.3651 453.36 542.94 28.68

DIFFUSION COEF. = .033 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 48,23(1944) VISCOSITY OF VAPOR = 4.97-03 CENTIPoise
SUMMARY OF PROPERTIES OF EA 5365 AT .0 DEGREES C. (

COMMON NAME: stubborn compound
FORMULA: .C

SHAKE MELTING POINT: 230-230.5 C.
SHAKE Boiling Point: 240-240.5 C.
SHAKE Boiling Point: 250-250.5 C.

DENSITY: 1.1755 was calculated from the equation:

DENSITY = 0.0090 + 0.009 (C.)

Volatility: 

VAPOR PRESSURE (mm of Hg) = 2.25 + 0.92

ESTIMATE OF VAPOR PRESSURE (MM OF Hg) = 2.25 + 0.92

VAPOR PRESSURE (MOLE PER CUBED): 14.8

VOLATILITY (MOLE PER CUBED): 14.8

The following critical properties were estimated using the method of filippov.

DENSITY = 1.1755 was calculated from the equation:

DENSITY = 0.0090 + 0.009 (C.)

The viscosity of the vapor was estimated using the modified sutherland's eqn. (j. phys. chem., 48, 231, 1943).

END OF COMPOUND EA 5365 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5365 AT 20.0 DEGREES CENTIGRADE

COMMOM NAME: FORMULA WEIGHT: 198.2 GENERAL REFERENCE: EC-TR-76058

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPEROOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTONINE CONSTANTS (EATR 4491): A = 8.66720, B = 2778.90, C = 253.0 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 145.3 DEG. CENT. REFERENCE: EC-TR-76058

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = .32-01
ESTIMATED BOILING POINT (CENT.) = 225.6
HEAT OF VAPORIZATION (KCAL/MOLE) = 14.6
VOLATILITY (MG/METER CUBED) = .35+03 VOLATILITY (MILLIMOLE/METER CUBED) = .19+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY (G/ML) = 1.1559 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1755 - .00098 * TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 40.0 DEG. CENT. REFERENCE: HB8484 SUSPENDED SOLIDS LIQ

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
GH/CC DEG C CC/MOLE ATM.
.3651 453.36 542.84 28.68

DIFFUSION COEF. = .046 CM./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J. PHY. CHEM. 48, 23 (1944) VISCOSITY OF VAPOR = 5.91-03 CENTIPOISE

END OF COMPOUND EA 5365 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5365 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 198.2
GENERAL REFERENCE: EC-TR-76058

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 44391): A = 8.69720, B = 2776.80, C = 253.0 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 146.0 DEG. CENT. REFERENCE: EC-TR-76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOOR PRESSURE(TORR) = 49.01
ESTIMATED BOILING POINT(CENT.) = 225.0
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.6
VOLATILITY(MG/METER CUBED) = 0.33+03
VOLATILITY(MILLIMOLE/METER CUBED) = 0.27+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) = 1.1510 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.1755 - 0.0098 (TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NB0494 SUPENDED SOLIDS LIQ

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/CC DEG C CC/MOLE ATM.
5365 453.36 542.84 23.68

DIFFUSION COEF. = 0.048 CM²/SO./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 6.02-03 CENTIFOISE

END OF COMPOUND EA 5365 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5365 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: 
FORMULA WEIGHT: 198.2 GENERAL REFERENCE: EC-TR-76058
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOLDS TO SPECIFIED TEMPERATURE *****
The following Antoine constants(EATR 4k91): A* = 8.66720, B* = 2770.90, C* = 253.0 DETERMINED OVER THE
TEMPERATURE RANGE 30.0 TO 146.0 DEG. CENT. REFERENCE: EC-TR-76058
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .16+00
ESTIMATED BOILING POINT(CE1T.)= 225.6
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.5
VOLATILITY(MG/METER CUBED)= .16+04 VOLATILITY(MILLIMOLE/ METER CUBED)= .82+01
DENSITY(G/ML)= 1.1363 WAS CALCULATED FROM THE EQUATION: DENSITY= 1.1755 - .00098 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: NB9484 SUPENDED SOLIDS LIQ

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. 
ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G4/CC DEG C CC/MOLE ATM.
.3651 453.39 542.84 28.88

DIFFUSION COEF. = .053 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR
THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOR = 5.38-03 CENITPOISE

END OF COMPOUND EA 5365 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5389 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.19050, B = 2118.40, C = 222.5 DETERMINED OVER THE TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WE WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)* 0.3804
ESTIMATED BOILING POINT(TEMP.CENT.) 283.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) 15.8
VOLATILITY(MG/600METER CUBED) .5900 VOLATILITY(MILLIMOLE/METER CUBED) .2602

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML) 1.1262 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0032 - .00090 TOTMP.(C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.36660, B = -74.13, C = 47.9 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WE WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = *********

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -67.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHAN-YOUNG(CEHNTIGRADE) = 138.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.

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DIFFUSION COEF. = .024 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQ., J.PHY.CHEM, 60,231(1944) VISCOSITY OF VAPOR = 4.16-03 CENTIFRAISE

END OF COMPOUND EA 5389 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5389 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 224.3 GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.19050, B = 2110.40, C = 222.5 DETERMINED OVER THE
TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = 0.53-03
ESTIMATED BOILING POINT(CESENT.) = 260.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.1
VOLATILITY(MG/METER CUBED) = 76-01 VOLATILITY(MILLIMOLE/METER CUBED) = 34-01
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

DENSITY(G/ML) = 1.1082 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0902 - .00090 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -36650, B = -74.13, C = 47.9 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY

VISCOITY(CENTISTICKES) = 195.224
**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

MELTING POINT (DEG. CENT.) = -67.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHEN-YOUNG(CECENTIGRADE) = 136.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHIURN. FIZ AKHM. 37. 201(1953)

DENsITY TEMPERATURE VOLUME PRESSURE
G/W/CC DEG C CC/MOLE ATM.
.3389 458.29 653.59 25.45

DIFFUSION COEF. = .029 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.40.23(1944) VISCOSITY OF VAPOR = 4.60-03 CENTIPOISE

END OF COMPOUND EA 5289 A1 -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5380 AT .0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT:  224.3  GENERAL REFERENCE:  ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(549R 4491): A= 7.19050, B= 2118.40, C= 222.5 DETERMINED OVER THE
TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)=  .47+02
ESTIMATED BOILING POINT(CENT.)= 269.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)=  14.6
VOLATILITY(MG/METER CUBED)=  .61+02  VOLATILITY(MILLIMOLE/ METER CUBED)=  .27+00
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

DENSITY(G/ML)=  1.0902 WAS CALCULATED FROM THE EQUATION: DENSITY=  1.0902 - .00090 *TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(549R 4491): A= -36660, B= -74.13, C= 47.9 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCCITY(CENTISTOKES)=  15.173
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

WELTING POINT (DEG. CENT.) = -67.0  REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHAN-YOUNG(CENTIGRADE)=  136.0  REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.  ZHURN. FIZ KHIM. 37. 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
G/MC/CC DEG C CC/MOLE ATM.
.3880 459.20 663.59 23.65

DIFFUSION COEF. = .034 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLINDS EQ.. J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 5.03-03 CENTIPoise

END OF COMPOUND EA 5389 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5389 AT 20.0 DEGREES CENTIGRADE
COMMON NAME:  FORMULA WEIGHT: 224.3  GENERAL REFERENCE: ARCST-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 7.19050, B = 2118.40, C = 222.5 DETERMINED OVER THE
TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT.  REFERENCE: ARCST-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .28-01
ESTIMATED BOILING POINT(CENT.)= 269.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)* = 14.2
VOLATILITY(MG/METER CUBED)= .35+03  VOLATILITY(MILLINOLE/ METER CUBED)= .16+01
DENSITY(G/ML)= 1.0722 WAS CALCULATED FROM THE EQUATION: DENSIT/ = 1.0902 - .00090 *TEMP. (C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE: ARCST-TR-77001

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.36660, B = -74.13, C = 47.9 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT.  REFERENCE:ARCST-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 5.311

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

MELTING POINT (DEG. CENT.) = -67.0  REFERENCE: ARCST-TR-77001
FLASH POINT, MCCUICHAN-YOUNG(CENTIGRADE)= 138.0  REFERENCE:ARCST-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV.
ZHURN. FIZ KHIM. 37. 201(1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/MG/CC DEG C CC/MOLE ATM.
.3380  459.20  665.59  25.65

DIFFUSION COEF. = .040 CM. SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ., J.PHY.CHEM.48,23(1944)  VISCOSITY OF VAPOR = 5.47-03 CENTIPoise

END OF COMPOUND EA 5389 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5389 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: CARTRIDGE
FORMULA WEIGHT: 224.3
GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4481): A = 7.19050, B = 2118.40, C = 222.5 DETERMINED OVER THE
TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR) = .13+01
ESTIMATED BOILING POINT(DEC.) = 269.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.1
VOLATILITY(MG/METER CUBED) = .52+03 VOLATILITY(MILLIMOLE/ METER CUBED) = .23+01
DENSITY(G/ML) = 1.0677 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0902 - .00090 * TEMP.(C.) DETERMINED OVER
THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = -.36660, B = -74.13, C = 47.9 DETERMINED OVER THE
TEMPERATURE RANGE 25.0 TO 65.0 DEG. CENT. REFERENCE: ARCSL-TR-77001
WERE USED TO CALCULATE THE VISCOSITY
VISCOSITY(CENTISTOKES) = 4.470
MELTING POINT (DEG. CENT.) = -67.0 REFERENCE: ARCSL-TR-77001
FLASH POINT, MCCUTCHEAN-YOUNG(CENTIGRADE) = 136.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHURN. FIZ KHIM. 37, 201(1963)
DENSITY TEMPERATURE VOLUME PRESSURE
GV/CC DEG C CC/MOLE ATN.
.3380 459.20 663.59 23.65

DIFFUSION COEF. = .041 CM.SQ./SEC CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOUR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE
MODIFIED SUTHERLANDS EQ.. J.PHY.CHEM.48,23(1944) VISCOSITY OF VAPOUR = 5.59-03 CENTIPOISE

END OF COMPOUND EA 5389 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5389 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 224.3

GENERAL REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 7.19050, B = 2118.40, C = 222.5 DETERMINED OVER THE TEMPERATURE RANGE 3.0 TO 64.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (Torr) = 1.13 x 10^{-2}

ESTIMATED BOILING POINT (CENT.) = 269.1

HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.0

VOLATILITY (MG/METER CUBED) = 1.3 x 10^{-4}

VISCOSITY (WILLIAMSON METER CUBED) = 1.67 x 10^{-4}

DENSITY (G/ML) = 1.0542 WAS CALCULATED FROM THE EQUATION: DENSITY = 1.0902 - 0.00090 \times TEMP. (C.) DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

THE FOLLOWING ANTOINE CONSTANTS (EATR 4461): A = -36060, B = -74.13, C = 47.9 DETERMINED OVER THE TEMPERATURE RANGE 25.0 TO 45.0 DEG. CENT. REFERENCE: ARCSL-TR-77001

WERE USED TO CALCULATE THE VISCOSITY

VISCOSITY (CENTISTOKES) = 2.998

MELTING POINT (DEG. CENT.) = -67.0 REFERENCE: ARCSL-TR-77001

FLASH POINT, MCCONNELL-YOUNG (CENTIGRADE) = 136.0 REFERENCE: ARCSL-TR-77001

THE FOLLOWING CRITICAL PROPERTIES WERE ESTIMATED USING THE METHOD OF FILIPPOV. ZHMUR. EZ. KHM. 37, 32 (1963)

DENSITY TEMPERATURE VOLUME PRESSURE
G/MCC DEG C CC/KOLE ATM.
1.3380 459.20 683.59 20.65

DIFFUSION COEF. = 0.246 CM.50./SEC. CALCULATED FOR VAPOR IN AIR

THE VISCOSITY OF THE VAPOR WAS ESTIMATED USING THE ABOVE CRITICAL PROPERTIES AND THE MODIFIED SUTHERLANDS EQN. J. PH. CHEM. 402 (1944)

VISCOSITY OF VAPOR = 5.90 x 10^{-3} CENTIPoise

END OF COMPOUND EA 5389 AT 40.0 DEGREES C.

PAGE NUMBER B-342
SUMMARY OF PROPERTIES OF EA 5403 AT -40.0 DEGREES CENTIGRADE
COMMON NAME: ... FORMULA WEIGHT: 212.5 ... GENERAL REFERENCE: EATR-4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.86792, B = 2946.07, C = 269.7 DETERMINED OVER THE TEMPERATURE RANGE 0.0 TO 150.0 DEG. CENT. REFERENCE: FATR-4710,B CORRECTED NO943
WE WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)* ... .12-03
ESTIMATED BOILING POINT(CENT.)* 220.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 12.0
VOLATILITY(MG/METER CUBED)* ... .17+01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5403 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5403 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 212.2
GENERAL REFERENCE: EATR-4710

***** WARNING: Since there is no melting point for this compound, calculation of values below data range may not
be valid unless liquid supercools to specified temperature *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.08792, B = 2946.07, C = 269.7 determined over the
TEMPERATURE RANGE - 00.0 TO 150.0 DEG. CENT. REFERENCES: EATR-4710, B CORRECTED N89343
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .12-02
ESTIMATED BOILING POINT (CENT.) = 220.7
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.8
VOLATILITY (MG/METER CUBED) = .17+02 VOLATILITY (MILLIMOLE/METER CUBED) = .79-01

***** WARNING: The above values are extrapolated out of the data temperature range *****

END OF COMPOUND EA 5403 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5403 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 212.2 GENERAL REFERENCE: EATR-4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.08792, B= 2946.07, C= 269.7 DETERMINED OVER THE TEMPERATURE RANGE 00.0 TO 150.0 DEG. CENT. REFERENCE: EATR-4710, B CORRECTED NB1343

WAS USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)* = .92-02
ESTIMATED BOILING POINT(CENT.)* = 220.7
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 13.8
VOLATILITY(MG/METER CUBED)* = 1.11-03 VOLATILITY(MILLIMOLE/ METER CUBED)= .54-00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****
SUMMARY OF PROPERTIES OF EA 5403 AT 20.0 DEGREES CENTIGRADE
COMMON NAME: G 2002  
FORMULA WEIGHT: 212.2  
GENERAL REFERENCE: EATR-4710
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.06792, B= 2946.07, C= 269.7 DETERMINED OVER THE
TEMPERATURE RANGE 60.0 TO 150.0 DEG. CENT.  REFERENCE: EATR-4710, B CORRECTED NBB343
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE(TORR)= .52-01
ESTIMATED BOILING POINT(CENT.)= 220.7
HEAT OF VAPORIZATION(KILOGRAMS/ MOLE)= 13.6
VOLATILITY(MG/METER CUBED)= .01+03  VOLATILITY(MILLIMOLE/ METER CUBED)= .29+01
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5403 AT 20.0 DEGREES C.  

PAGE NUMBER B-316
SUMMARY OF PROPERTIES OF EA 5403 AT 25.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT: 212.2  GENERAL REFERENCE: EATR-4710

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.90792, B = 2946.07, C = 269.7 DETERMINED OVER THE TEMPERATURE RANGE 60.0 TO 150.0 DEG. CENT.  REFERENCE: EATR-4710, B CORRECTED NBS#43

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .78-01
ESTIMATED BOILING POINT (CENT.) = 220.7
HEAT OF VAPORIZATION (KILocalORIES/MOLE) = 13.8
VOLATILITY (MG/METER CUBED) = .69+03  VOLATILITY (MILLIMOLE/ METER CUBED) = .42+01

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE

END OF COMPOUND EA 5403 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5403 AT 40.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 212.2 GENERAL REFERENCE: EATR-4710
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****
THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.88792, B = 2940.07, C = 269.7 DETERMINED OVER THE
TEMPERATURE RANGE 60.0 TO 150.0 DEG. CENT. REFERENCE: EATR-4710, B CORRECTED, NB9343
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:
VAPOR PRESSURE (TORR) = .24+00
ESTIMATED BOILING POINT (CENT.) = 220.7
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 13.8
VOLATILITY (MG/METER CUBED) = .26+04 VOLATILITY (MILLIMOLE/METER CUBED) = .12+02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5403 AT 40.0 DEGREES C.

PAGE NUMBER B-318
SUMMARY OF PROPERTIES OF EA 5414 AT -40.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 212.2

GENERAL REFERENCE: EATR-4710

WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4710): A = 9.70600, B = 3320.35, C = 262.4 DETERMINED OVER THE TEMPERATURE RANGE 60.0 TO 155.0 DEG. CENT. REFERENCE: EATR 4710

USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 59-05
ESTIMATED BOILING POINT(CENT.) = 224.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 15.7
VOLATILITY(KG/HECTOLITERS) = .07-01 VOLATILITY(MILIMOLE/ METER CUBED) = .41-03

WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5414 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5414 AT -20.0 DEGREES CENTIGRADE

COMMON NAME:  
FORMULA WEIGHT: 212.2 
GENERAL REFERENCE: EATR-4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS: A= 9.70800, B= 3320.3, C= 262.4 DETERMINED OVER THE TEMPERATURE RANGE 80.0 TO 155.0 DEG. CENT. REFERENCE: EATR 4710

WHERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = 1.9E-03
ESTIMATED BOILING POINT(CENT.) = 224.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.4
VOLATILITY(CC/METER CUBED) = 1.14x10^1

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5414 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5414 AT .0 DEGREES CENT. GRADE

COMMON NAME: FORMULA WEIGHT: 212.2  GENERAL REFERENCE: EATR-4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.70800, B = 3320.35, C = 262.4 DETERMINED OVER THE
TEMPERATURE RANGE 85.0 TO 165.0 DEG. CENT. REFERENCE: EATR 4710

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .11-02
ESTIMATED BOILING POINT(CENT.) = 224.1
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 16.4
VOLATILITY(MG/METER CUBED) = .14+02 VOLATILITY(MILLIMOLE/ METER CUBED) = .69-01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5414 AT .0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5414 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: 
FORMULA WEIGHT: 212.2 
GENERAL REFERENCE: EATR-4710

**WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE.****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4431): A* 8.70609, B* 3320.55, C* 262.4 DETERMINED OVER THE TEMPERATURE RANGE 80.0 TO 155.0 DEG. CENT. REFERENCE: EATR 4710

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (TORR) = .14 - 01
ESTIMATED BOILING POINT (CENT.) = 224.1
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 16.3
VOLATILITY (MG/METER CUBED) = .16 + 03

VOLATILITY (MILLIMOLE/ METER CUBED) = .70 + 00

**** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE.****
SUMMARY OF PROPERTIES OF EA 5414 AT 40.0 DEGREES CENTIGRADE

COMMON NAME: 
FORMULA WEIGHT: 212.2 
GENERAL REFERENCE: EATN-4710

***** WARNING: SINCE THERE IS NO VAPOR PRESSURE FOR THIS COMPOUND, THE CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SURFACE TEMPERATURE *****

THE FOLLOWING ANTONIO CONSTANTS (EATN 445): A = 9.70600, B = 3320.35, C = 262.4 DETERMINED OVER THE
TEMPERATURE RANGE 80.0 TO 155.0 DEG. CENT. REFERENCE: EATN 4710

WAVE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

ESTIMATED BOILING POINT = 224.1
HEAT OF VAPORIZATION (KiloCalories/Mole) = 16.3
VOLATILITY (mg/Meter Cubed) = 2.58 x 10^4
VOLATILITY (Milligrams/Meter Cubed) = 27 x 10^1

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5414 AT 40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5408 AT -40.0 DEGREES CENTIGRADE

COMMON NAME:
FORMULA WEIGHT: 236.2
GENERAL REFERENCE: EATR 4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE MADE UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.46292, B= 3226.38, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 120.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= .12-05
ESTIMATED BOILING POINT(CENT.)*= 304.8
HEAT OF Vaporization(KILOCALORIES/MOLE)= 14.7
VOLATILITY(M3/METER CUBED)= .68-01 VOLATILITY(MILLIMOLE/ METER CUBED)= .29-03

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5408 AT -40.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5488 AT -20.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 236.2
GENERAL REFERENCE: EATR 4719
***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 9.4625; B = 3220.38; C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .52-04
ESTIMATED BOILING POINT(CENT.) = 304.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.7
VOLATILITY(MG/METER CUBED) = .78-00 VOLATILITY(MILLIMOLE/ METER CUBED) = .33-02
***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5488 AT -20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5488 AT .0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 233.2

GENERAL REFERENCE: EATR 4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS (EATR 4491): A = 8.46292, B = 3226.38, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE: 130.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE (GRR) = .45 - 03
ESTIMATED BOILING POINT (CENT.) = 304.8
HEAT OF VAPORIZATION (KCALORIES/MOLE) = 14.7
VOLATILITY (MICRON/METER CUBED) = 52.01
VOLATILITY (MILLIMOLE/METER CUBED) = 28 - 01

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5488 AT .0 DEGREES C

PAGE NUMBER B-327
SUMMARY OF PROPERTIES OF EA 5488 AT 20.0 DEGREES CENTIGRADE

COMMON NAME: FORMULA WEIGHT: 236.2

GENERAL REFERENCE: EATR 4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE ******

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.46292, B = 3226.38, C = 273.2 DETERMINED OVER THE TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710

WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .29-02
ESTIMATED BOILING POINT(CENT.) = 304.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.7
VOLATILITY(MG/METER CUBED) = .37-02 VOLATILITY(MILLIMOLE/METER CUBED) = .16-00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE ******

END OF COMPOUND EA 5488 AT 20.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5488 AT 25.0 DEGREES CENTIGRADE
COMMON NAME: FORMULA WEIGHT: 236.2
GENERAL REFERENCE: EATR 4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A = 8.86292, B = 322.538, C = 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT. REFERENCE: EATR 4710
WERE USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR) = .44+02
ESTIMATED BOILING POINT(CENT.) = 304.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE) = 14.7
VOLATILITY(MG/METER CUBED) = .56+02
VOLATILITY(MILLIMOLE/ METER CUBED) = .24+00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5488 AT 25.0 DEGREES C.
SUMMARY OF PROPERTIES OF EA 5488 AT 40.0 DEGREES CENTIGRADE

COMMON NAME:  FORMULA WEIGHT:  236.2  GENERAL REFERENCE: EATR 4710

***** WARNING: SINCE THERE IS NO MELTING POINT FOR THIS COMPOUND, CALCULATION OF VALUES BELOW DATA RANGE MAY NOT
BE VALID UNLESS LIQUID SUPERCOOLS TO SPECIFIED TEMPERATURE *****

THE FOLLOWING ANTOINE CONSTANTS(EATR 4491): A= 8.46292, B= 3222.36, C= 273.2 DETERMINED OVER THE
TEMPERATURE RANGE 130.0 TO 215.0 DEG. CENT.  REFERENCE: EATR 4710

USED TO CALCULATE THE FOLLOWING FOUR PROPERTIES:

VAPOR PRESSURE(TORR)= 5.14x01
ESTIMATED BOILING POINT(CENT.)= 304.8
HEAT OF VAPORIZATION(KILOCALORIES/MOLE)= 14.7
VOLATILITY(MG/METER CUBED)= .17x03  VOLATILITY(MILLIMOLE/ METER CUBED)= .74x00

***** WARNING: THE ABOVE VALUES ARE EXTRAPOLATED OUT OF THE DATA TEMPERATURE RANGE *****

END OF COMPOUND EA 5488 AT 40.0 DEGREES C.
APPENDIX C

USE OF THE ANTOINE EQUATION TO FIT VAPOR PRESSURE DATA (U)
USE OF THE ANTOINE EQUATION TO FIT VAPOR PRESSURE DATA

Vapor pressure data plays an important role in the development of defense against chemical agents; some areas where vapor pressure plays a critical role are listed in Table C-1.

Table C-1. (U) Areas in Which Vapor Pressures Play a Critical Role in Chemical Defense

| Chemical decontamination activity coefficients of kinetic equations |
| Dissemination |
| Munition design |
| Doctrine studies |
| Jet exhaust decontamination |
| Percutaneous toxicity |
| Fabric penetration by vapor transfer |
| Inhalation toxicity |
| Persistency and threat calculations |

The Antoine equation is defined as follows:

\[
\log_{10} P = \frac{A-B}{(t+C)}
\]

where \( P \) = vapor pressure,
\( t \) = temperature in centigrade, and
\( A, B, \) and \( C \) = constants.

A & B are constants that vary widely for different compounds. C is a constant that does not vary greatly from compound to compound and is frequently close to 230.

A recent data compilation questions the use of the Antoine equation which is used extensively in this report. In reference 2, it is stated that the Antoine equation fits the data well "but gives unrealistically high values at higher temperatures." No justification for this opinion is provided.
Table C-2 lists the reasons why the Antoine equation has been chosen for correlating and extrapolating vapor pressure data. Some problems dealing with fitting data to the Antoine equation do occur with the current computer program; see Table C-3. However, studies are being conducted on these problems and preliminary results have been reported by Celmins.

Table C-2. (U) Advantages of Using the Antoine Equation for Extrapolations

1. Numerous comparisons with other equations have been reported in published literature.

2. The Antoine equation:
   - accurately fits the data of hundreds of compounds over a wide range of temperatures.
   - is close to the Clausius-Clapeyron equation.
   - has only three parameters.
   - contains no polynomials.

Table C-3. (U) Problems in Using the Antoine Equation

1. Current computer program\textsuperscript{3} gives an estimate of the quality of fit, but does not give an estimate of error of specific vapor pressures.

2. While the program fits the data very well, there are some logical problems in the routine (not in the Antoine equation) that might reduce the quality of extrapolations.

3. Antoine equation extrapolations close to the critical point tend to be low.

The Antoine equation was chosen for use at CSL after a careful study of the literature and in-house testing of many equations. A number of physical chemists participated in the decision. A more recent study tends to confirm the correctness of this decision. Trump\textsuperscript{5} states, "In each case the Antoine equation gave a closer fit... and was therefore the preferred correlating equation. The Chebyshev equation produced deviations about twice as large."

The consensus\textsuperscript{6} in the chemical literature is that the Antoine equation gives good fits at low temperatures; but, the extrapolations up to a reduced temperature of 0.75 with the Antoine equation result in low values. Therefore, equations 1 and 2 (reference 2) which give even lower values cannot provide superior extrapolations as reported. The errors introduced from the use of such equations are quite large. Figure C-1 shows
that equation 1 (reference 2) does not pass through any of the data points and that equation 2 passes through only the top two points, an insufficient number for the extrapolation of a curving line. Equation 2 actually goes through a maximum vapor pressure at the highest temperatures.

Figure C-1. (U) Comparison of Antoine Equation With Other Equations.


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Alexandria, VA 22314

**Director**
Defense Intelligence Agency
ATTN: DB-4GI
Washington, DC 20301

**Commander**
USASED, USAISCOM
ATTN: IAFM-SED-111
Fort Meade, MD 20755

**DEPARTMENT OF THE ARMY**

HQDA (DAMA-NCC)
WASH DC 20310

**UNCLASSIFIED**
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Commander
US Army Environmental Hygiene Agency
ATTN: HSHB-0 (B. Donovan)
Aberdeen Proving Ground, MD 21010

US ARMY MATERIAL DEVELOPMENT AND READINESS COMMAND

Commander
HQ, DARCOM
ATTN: DRCEO (BG Robinson)
500 Eisenhower Ave
Alexandria, VA 22333

Commander
USA Material Development and Readiness Command
ATTN: DRCSF-P
500 Eisenhower Ave
Alexandria, VA 22333

Project Manager Smoke/Obscurants
ATTN: DRPM-SMK-S
Aberdeen Proving Ground, MD 21005

Commander
USA Foreign Science & Technology Center
ATTN: DRXST-MT3
220 Seventh St., NE
Charlottesville, VA 22901

Director
USA Material Systems Analysis Activity
ATTN: DRKSY-HP
Aberdeen Proving Ground, MD 21005

Commander
USA Missile Command
Redstone Scientific Information Center
ATTN: DRSMI-RPR (Documents)
Redstone Arsenal, AL 35898

Commander
DARCOM Field Safety Activity
ATTN: DRXOS-C
Charlestown, IN 47111

Commander
USA Natick Research and Development
Laboratories
ATTN: DRDNA-0
ATTN: DRDNA-IC
ATTN: DRDNA-IM
ATTN: DRDNA-ITF (Dr. Roy W. Roth)
Natick, MA 01760

US ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND

Commander
US Army Armament, Munitions and Chemical Command
ATTN: DRCSM-ASN (R)
ATTN: DRCSM-IMR (R)
Rome Island, IL 61299

Commander
USA Dugway Proving Ground
ATTN: Technical Library (Docu Sect)
Dugway, UT 84022

US ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER

Commander
USA Armament Research and Development Center
ATTN: DRSMC-LCA-L (D)
ATTN: DRSMC-LCE-C (D)
ATTN: DRSMC-LCU-CE (D)
ATTN: DRSMC-SCA-T (D)
ATTN: DRSMC-SCM (D)
ATTN: DRSMC-SCP (D)
ATTN: DRSMC-SCL (D)
ATTN: DRSMC-TDC (D) (Dr. D. Gyorog)
ATTN: DRSMC-TSS (D)
ATTN: DRCPM-CAMS-AM (D)
Dover, NJ 07801

USA Armament Research and Development Center
Resident Operations Office
ATTN: DRSMC-TSE-OA (Robert Thresher)
National Space Technology Laboratories
NSIL Station, Mississippi 39529

Commander
AMMCOM
ATTN: DRSMC-QAC-E (A)
Aberdeen Proving Ground, MD 21010

UNCLASSIFIED

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Commanding General
Marine Corps Development and Education Command
ATTN: Fire Power Division, D091
Quantico, VA 22134

DEPARTMENT OF THE AIR FORCE

Department of the Air Force
Headquarters Foreign Technology Division
ATTN: TQT
Wright-Patterson AFB, OH 45433

ASD/AESD
Wright-Patterson AFB, OH 45433

AFAMRL/TS
ATTN: COL Johnson
Wright-Patterson AFB, OH 45433

AFAMRL/HE
ATTN: Dr. Clyde Replogle
Wright-Patterson AFB, OH 45433

AFWAL/FIEEC (Wendell Banks)
ATTN: CPT D. Riediger
Andrews AFB, MD 20334

HQ, AFSC/SDNE
ATTN: J-3TU
Andrews AFB, MD 20334

HQ, AFSC/SGB
ATTN: Kirtland AFB, NM 87117

USAF TAWC/THL
ATTN: HSHA-CDH
Eglin AFB, FL 32542

AFATL/DLV
ATTN: HSHA-IPM
Eglin AFB, FL 32542

AD/XRO
Eglin AFB, FL 32542

USAFSC
ATTN: AD/YQ
ATTN: AD/YQO (MAJ Owens)
Eglin AFB, FL 32542

USAFSAM/VN
Deputy for Chemical Defense
ATTN: Dr. F. Wesley Baumgardner
Brooks AFB, TX 78235

AMD/RDTK
ATTN: LTC T. Klinger
Brooks AFB, TX 78235

AMD/RDSM
Brooks AFB, TX 78235

AMD/ROSX
Brooks AFB, TX 78235

OUTSIDE AGENCIES

Deltelle, Columbus Laboratories
ATTN: TACTEC
505 King Avenue
Columbus, OH 43201

Toxicology Information Center, NH 652
National Research Council
2101 Constitution Ave., NW
Washington, DC 20418

Center for Disease Control
ATTN: Logging Control Officer
Mrs. M. Brocato (W.L. Webb)
Atlanta, GA 30333

Director
Central Intelligence Agency
ATTN: AMR/ORD/DD/S&T
Washington, DC 20505

ADDITIONAL ADDRESSEES

Commandant
Academy of Health Sciences, US Army
ATTN: HSHA-CDH
ATTN: HSHA-IPM
Fort Sam Houston, TX 78234
REQUEST FOR/OR NOTIFICATION OF REGRADING ACTION

For use of this form, see AR 380-5; the proponent agency is OACSI.

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<td>Defense Technical Information Center (DTIC)</td>
<td>Commander, U.S. Army Soldier and Biological Chemical Commander, ATTN: AMSSB-SIS (Mr. McClain)</td>
</tr>
<tr>
<td>8725 John J. Kingman Road, Suite 0944</td>
<td>Blackhawk Road, Aberdeen Proving Ground, MD 21010-5424</td>
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DATE: 28 November 2001
FILE:

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PRINTED OR TYPED NAME AND TITLE OF OFFICER

Marlin Julian
Chief, Edgewood Area Security Team

SIGNATURE

Marlin Julian
REMARKS

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MEMORANDUM THRU Director, Edgewood Chemical Biological Center, (RDCB-D/Dr. Joseph L. Corriveau), 5183 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5424

FOR Defense Technical Information Center (DTIC), 8725 John J. Kingman Road, Ft Belvoir, VA 22060-6218

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1. This action is in response to an Edgewood Chemical Biological Center (ECBC) internal request for a Change in Distribution for the attached listed documents.

2. The listed documents have current distribution statements or classifications which limit their release. ECBC Subject Matter Experts have reviewed the documents and deem them all suitable for the change in distribution to read “Distribution A: Approved for public release; distribution unlimited.”

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Encl

Ronald L. Stafford
Security Manager


