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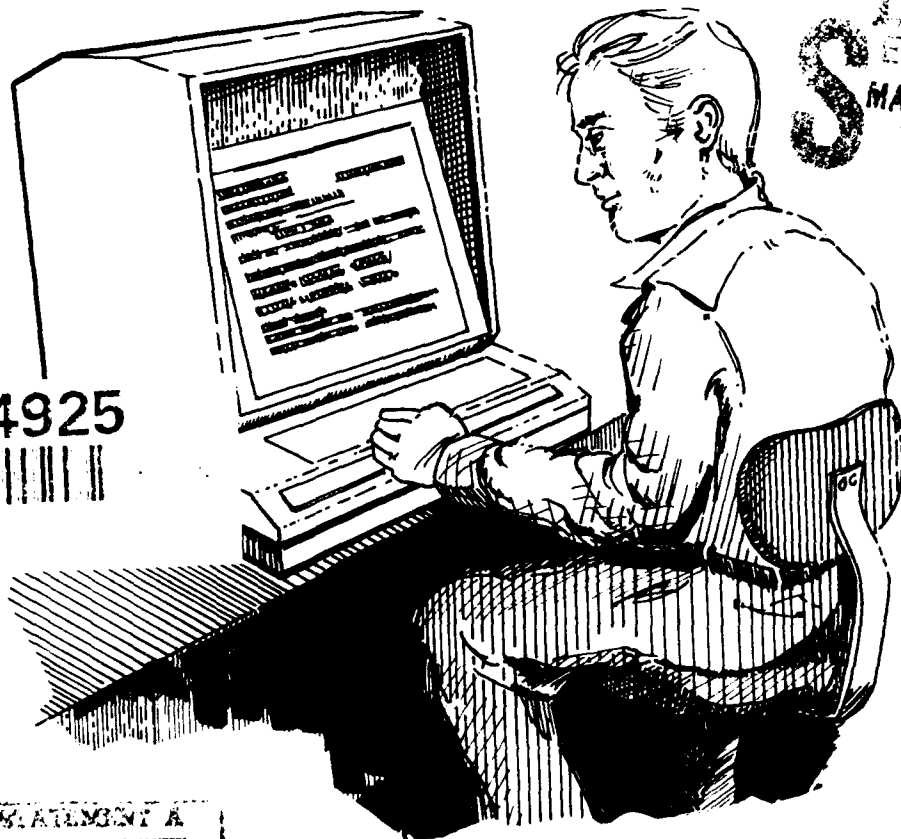


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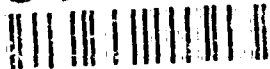


The Hazardous Materials Information System

USERS GUIDE



94-14925



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FORCE MANAGEMENT
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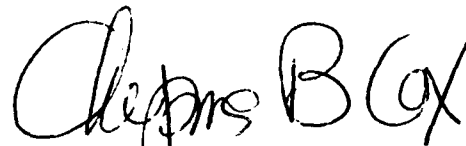
FOREWORD

The DoD Hazardous Materials Information System provides basic technical reference data to assist in the management of hazardous materials so that the risk involved in the performance of various jobs is minimized. The system was established and operates to support our efforts to comply fully with the various laws that apply to safety and health, transportation, and the environment by providing knowledge as to the specific hazards associated with individual items.

The purpose of this guide is to assist users and potential users of the information contained in the system. The guide is intended to help personnel who are trying to locate and utilize data on hazardous materials. It offers suggestions on how the data may be used and provides understanding of the system's capabilities.

There is a wide range of data in the system related to safety, health, storage, packaging, labeling, transportation, precautions for use, and disposal of hazardous items. Care must be taken to seek the assistance of the appropriate specialists in these areas to assure proper use of some of this information. The very fact that the items identified in this system are hazardous dictates the extra degree of caution imposed by the laws which require that such information be readily available to persons working with or near such substances. It should also be noted that the relative degree of hazard can vary considerably between items. Assistance, beyond that provided by this guide, may be sought from the various focal points identified in Appendix A.

This Guide is authorized by DoD Instruction 6050.5, January 25, 1978. Recommendations for additions, deletions, and corrections to this guide should be addressed to Headquarters, Defense Logistics Agency, ATTN: DLA-SC, Cameron Station, Alexandria, Virginia 22304-6100.


Chapman B. Cox

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HAZARDOUS MATERIALS INFORMATION SYSTEM: A USERS' GUIDE

1. INTRODUCTION

WHAT THE HMIS CAN DO FOR YOU

The Hazardous Materials Information System -- HMIS for short -- is a computerized database of information for people working in hazardous materials management. The system provides basic technical information required at all levels to assist in the proper handling, storage, transportation, and disposal of hazardous materials. In addition to providing data to these operating functions, it also provides information to the safety, health, and environmental functions. The system was initially developed for use by the Department of Defense (DoD). The availability of the system to other Federal agencies and the private sector is discussed on pages 2-1 and 2-2.

The HMIS is designed to assist individuals in their employment duties when hazardous materials are involved. The database provides useful information on over 30,000 hazardous records to a variety of people with very different job responsibilities. However, although the HMIS data are a key element in the proper management of hazardous materials, they must be used in conjunction with other resources such as occupational safety and health standards, criteria documents, and other technical guides. For example, a toxic substance such as a pesticide will be identified in the HMIS along with data on health effects in the event of unprotected exposure. But individuals handling and using that pesticide need to use the proper equipment and follow the proper procedures. Selection and fitting of equipment and procedures are accomplished by safety and health personnel after they examine the HMIS data and consider such additional information as ambient conditions during use, policies, procedures, handbooks, and personnel skills.



In the simplest terms, the HMIS can provide information on hazardous materials. The information must be applied in conjunction with other information as part of your decision-making process. This is an important key to proper management of hazardous materials.

Additional background on HMIS and how information gets into the system may be found in Section 6 of this Guide.

Section 2 presents general information on the HMIS publications and how you can obtain them. Section 3 explains how to use the microfiche to locate information in the system. The layout of the microfiche is discussed in Section 4. Major information categories (data elements) of special interest to people working in specific areas are identified in Section 5. Section 6 provides you with a historical perspective on the HMIS and a brief description of how data on hazardous materials get into the system.



- o DoD users should contact their focal points -- identified in Appendix A.
- o Other Federal agency users:
 - A. Active participants in HMIS (i.e., you provide Material Safety Data Sheets (MSDSs) for input into HMIS) should contact their focal points as identified in Appendix A.
 - B. Nonactive participants (i.e., you receive HMIS but do not assist in maintaining the system) can either order direct from the Superintendent of Documents (see private sector users below) or should contact:

Defense Logistics Agency
 ATT: DLA-SCT
 Cameron Station
 Alexandria, VA 22304-6100
 AUTOVON 284-4228
 Commercial (202)274-4228

- o Private sector users should contact:

Superintendent of Documents
 Government Printing Office
 Code D HMIS
 Washington, DC 20402
 Commercial Telephone (202)275-3331

The subscription stock number is 908-005-00000-7. The 1986 subscription rate (for DoD 6050.5-L) is \$35.00 for domestic subscribers; \$43.75 in Canada. The subscription price is subject to change every December. The limited rights publication (DoD 6050.5-LR), which contains proprietary information, is not available through the Government Printing Office.

WHAT TO KEEP, WHAT TO THROW AWAY

Shortly after November, you will receive a new basic set of HMIS microfiche. Properly dispose of all the old HMIS microfiche that you have in your files. Upon receipt of your first cumulative update, place it in the file with your basic package. Since the cumulative update contains complete cross-references, throw away the cross-references in your basic package. Approximately three months later, you will receive the second cumulative update. Throw away all of the first cumulative update (including the cross-references) -- BE SURE TO KEEP THE BASIC PACKAGE! Follow the same process when you

receive the third update. It's now a year later and you receive a new basic package; the microfiche receipt/discard cycle starts again.

Nonactive Federal agencies can become active participants by contacting the Defense Logistics Agency (DLA) at the address listed on page 2-2. Active participants benefit through attendance at regular focal point meetings. These meetings provide a means for discussing HMIS user needs and suggesting changes to the system. Furthermore, active participation means that all of the hazardous materials used by your agency will be input into the HMIS. In short, to become an active participant your agency must be willing to provide information on the materials it uses and to collaborate on changes under consideration to the HMIS system.

3. FINDING THE ITEM IN THE HMIS

When using the HMIS, you should remember that the data in the system reflect only those data provided on products supplied to the Department of Defense. In other words, the HMIS contains data only on hazardous materials used by the Government. Keep in mind that the HMIS is a growing system. Just because an item is not listed in the system does not mean that it's not hazardous. If you suspect a nonlisted item is hazardous, you should contact your focal point listed in Appendix A. If you do not have a focal point, you should contact the DLA at the address on page 2-2 under "B. Nonactive participants."

WHEN YOU KNOW THE STOCK NUMBER

To unlock information from the HMIS, you need the right key. In most cases, the 13-digit National Stock Number (NSN) is that key. For some items listed in the HMIS there are one or more letters in the stock number field. This is for items assigned a Local Stock Number (LSN) or an Activity Control Number (ACN). For example, 8010-00-N00-0928 is a LSN for an item entered into the HMIS by the Navy. (See Appendix B for definition of LSN.)

An NSN consists of two parts: the Federal Supply Class (FSC) and the National Item Identification Number (NIIN). The first four digits of a stock number make up the FSC -- a supply cataloging code under which similar items are grouped. In the example used in the previous paragraph, 8010 is the FSC. The Federal Cataloging System's Cataloging Handbook H 2-1 (SB 708-21) defines Federal Supply Class 8010 as consisting of paints, dopes, varnishes, and related products. The last nine characters of the stock number make up the NIIN. The NIIN is the unique portion of the stock number assigned to an item. The NIIN is illustrated below:

8010	-	00-110-4498
FSC		NIIN

Suppose you need to identify any hazardous components in an item with an NSN of 6850-00-292-9780. Since the items in the HMIS are arranged according to the last nine characters of a stock number, ignore the first four digits. You will search the microfiche for the number 00-292-9780.

DOD 6050.5-LR U.S. GOVT										5910-00-198-9757										NOV 8444									
USE ONLY BASIC																													
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First go to your cumulative update and look at the information line at the top of each microfiche. Locate the section containing the stock numbers. Those stock numbers refer to the first item on that microfiche sheet. Look through the cumulative update until you find the sheet that has the closest number to but less than 00-292-9780. That microfiche sheet may contain the



RDR 6850+5-L	8010-00-286-7744	AUG 84	24																																				
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RDR 6850+5-L	5950-00-295-7504	AUG 84	25																																				
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Find the correct microfiche sheet.

information you need. The lower right-hand corner of the microfiche sheet contains an index of all the numbers on the sheet. Place the microfiche sheet in the reader and refer to the index. You will see that 00-292-9780 is not listed. Therefore, it is not in the cumulative update and you must search the basic package for the information required.

5330-00-264-7048.....A	1	6810-00-264-8997.....A	5
5333-00-264-7061.....B	1	6810-00-264-8997.....B	5
5330-00-264-7061.....C	1	6810-00-264-8997.....C	5
5910-00-264-7574.....D	1	6810-00-264-8999.....D	5

Microfiche Index.

When repeating the above procedure with the basic package, you will see that the item you are searching for -- NSN 6850-00-292-9780--contains 37 percent xylene. More than one entry for your stock number may exist. This is because there is a separate entry for each vendor who supplies the item to the Department of Defense. Since vendor formulations may vary, you should always look at all entries under a stock number to identify the entry in which you are interested.

Why not look in the basic package first? True, there are more items listed in the basic package. However, the cumulative update is more current. That means that if new information on NSN 6850-00-292-9780 was received after publication of the basic package in November, the listing would be changed and included in the next cumulative update. If, for example, the item's proper shipping name was changed, the listing would be corrected. The updated record for NSN 6850-00-292-9780 would then be in your cumulative update. If the NSN does not appear in the cumulative update, then the most current information on the item is in the basic package.

WHEN YOU DON'T KNOW THE STOCK NUMBER

If you don't have the stock number (NSN/LSN) for an item, you may still be able to find it in the HMIS. The last microfiche sheets of both the basic package and the cumulative update contain the cross-reference index. If you have the item's part number, trade name, or other identifier used by the manufacturer (for example, the manufacturer's catalog number), refer to the part number cross-reference.

You will notice that each product in this cross-reference has four columns. If you find the item you are looking for, the second column will indicate the NSN (or LSN), the third column gives you the manufacturer's name, and the last column provides the Federal Supply Code for Manufacturers (FSCM).

DOD 6050.5 PART NR XREF	MAY 84 1
Empty grid for data entry	

GLO21-1	N13	PART NR CROSS-REFERENCE LIST	DATE 84122	PAGE NO 0462
PART NUMBER	N S N	MANUFACTURERS	FSCM	
A 725-402, PRIMER COATING, TT-P-636D	8010-00-161-5718	ENMAR	09869	
A 725A	5960-00-114-4672	RAYTNEON CO.	49956	
A 72501-002	9150-01-093-8665	HALOCARBON PROD CORP	07644	
A 7252-239 TYPE II	6850-00-015-0325	CHEMICAL COMMODITIES AGENCY	60777	
A 7256	5960-00-896-9116	BOUGHT ACCORDING TO SPEC	81349	

An example from the part number cross-reference.

Data are entered into HMIS cross-references in one of two ways -- alphabetically or numerically. Therefore, simply knowing the part number of an item does not guarantee a simple search to find the stock number you need in the part number cross-reference.

Let's try to find the stock number for a yellow corrosion inhibitor sealant with a part number of 71-Y-1 and manufactured by the Deft Chemical Coatings Company. This item may have been entered alphabetically under "C" for corrosion inhibitor or "S" for sealant; or it may have been entered numerically under 71-Y-1. By searching the part number cross-reference, we locate the listing (entered numerically): 71-Y-1 sealant, yellow, corrosion inhibitor 8030-01-016-5805, Deft Chemical Coatings. Now that the stock number is known, refer to the HMIS cumulative update or basic package to find the product information required.

GLO21 1	N13	PART NR CROSS-REFERENCE LIST	DATE 84122	PAGE NO 0462
PART NUMBER	N S N	MANUFACTURERS	FSCM	
A 707-107, FORMULA 129/63, MIL-P-16189, BLACK	8010-00-753-4945	ENMAR AN AMERON COMPANY	09869	
A 7077	5960-00-688-6706	GENERAL ELECTRIC COMPANY	33173	
A 7077	5960-00-688-6706	GENERAL ELECTRIC COMPANY	33173	
A 7099	5960-00-754-5783	WAGNER ELECTRIC CORP	94988	
A 71-Y-1 SEALANT, YELLOW, CORROSIVE INHIBITOR	8030-01-016-5805	DEFT CHEMICAL COATINGS	33461	
A 71-001-5	6850-00-133-5711	GENERAL AIR, DIV OF ZURN IND	26702	
A 71-04	2320-00-137-0505		04367	

Part number cross-reference showing 71-Y-1.

There are two other cross-references in the HMIS -- the FSCM cross-reference (FSCM XREF) and the specification cross-reference (SPEC XREF).

DOD 6050.5 FSCM XREF										MAY 84 1																																																	
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FSCM and specification cross-references.

The FSCM XREF is a four-column listing of NSNs, Manufacturers, and part numbers indexed according to the FSCM assigned to the manufacturer (column 1).

GLO21-1	J1	FSCM CROSS-REFERENCE LIST	DATE 84122	PAGE NO 0462
FSCM	N S N	MANUFACTURERS	PART NUMBER	
99592	6750-00-151-5649	NRB SINGER, INC.	RINSE, PHOTOGRAPHIC	
99656	8030-00-117-8528	ADHESIVE ENGINEERING COMPANY	CONCRETE 1448 PART B	
99687	5960-00-798-1374	RAYTHEON CO, EQUIPMENT DIV	2729-1069P1	
99696	5960-00-919-9872	GOODYEAR AEROSPACE CORP, ARIZONA DIV	A25A305-025 103	
99696	6750-00-003-3369	GOODYEAR AEROSPACE CORPORATION	PM 98	
99735	6420-00-001-4192	MORTON CHEMICAL COMP. (MFG);CHEM COMM.(DISTR)	AUTOMATIC RED BSF	

Example of the FSCM cross-reference.

The SPEC XREF lists items in the HMIS according to the Government specification the items are manufactured to meet.

There are many items in the Government procurement system that do not have specifications. Many of these items are listed in the SPEC XREF. They are listed in the cross-reference before those items that do have a Government specification.

SPECIFICATION	N S N	MANUFACTURERS	PART NUMBER
	9999-00-N00-0241	CARBOLINE COMPANY	CARBOMASTIC 16 NFP (NFG CODE 0184)
	9999-00-N00-0440	HYSOL DIV, THE DEXTER CORP	AC-4367
	9999-00-N00-0441	HYSOL DIV, THE DEXTER CORP	AC 4368
	9999-00-N00-0445		OAKITE DEFOAMANT
	9999-00-N00-0455	OAKITE PRODUCTS, INC	OAKITE DEFOAMANT
	9999-00-N00-0464	A-R PRODUCTS	541, COASULANT
	9999-00-N00-0481	FE INDUSTRIES	DAYPIASSC-1508
	9999-00-N00-0626	SUN PETROLEUM PRODUCTS COMPANY	CIRCOSOL 4240
	9999-00-N00-0720	DOW CHEMICAL U.S.A.	XPS 43091.00 EXPERIMENTAL IMBIBER BEADS
	9999-00-N00-0728	W. R. GRACE & CO	POLYCEL 1
	9999-00-N00-0729	W. R. GRACE & CO	POLYCEL 1
(CIC) A-A-1543	8520-00-270-0065	CONTINENTAL CHEM CORP	BORAX
A-A-S	7930-00-281-4731	PAUL CO PRODUCTS INC.	DISHWASING COMP. HAND-CID A-A-5
A-A-1376	7930-00-093-4909	CONTINENTAL CHEM CORP.	DETERGENT GENERAL PURPOSE
A-A-19	6850-00-637-6742	BRANITE PRODUCTS, INC	A-A19A SCALE REMOVING COMPOUND

Some items do not have specifications.

When attempting to locate an item by Federal specification number, search the alphabetical listing under both "Fed. Spec." and "Federal Specification." For example, an item manufactured to meet Federal Specification VV-G-1690 may be listed alphabetically in the cross-reference as either "Fed. Spec. VV-G-1690," or "Federal Specification VV-G-1690," or VV-G-1690.

SPECIFICATION	N S N	MANUFACTURERS	PART NUMBER
VV-G-001690	9130-00-148-7102	BOUGHT ACCORDING TO SPEC	W-G-001690
VV-G-109	9130-00-221-0679	BOUGHT ACCORDING TO SPECIFICATION	VV-G-109, GASOLINE, UNLEADED
VV-G-109	9130-00-240-8209	BOUGHT ACCORDING TO SPECIFICATION	VV-G-1690, GASOLINE, AUTOMOTIVE, LEADED, UNLEADED
VV-G-1690	9130-00-264-4539	BOUGHT ACCORDING TO SPECIFICATION	VV-G-1690, GASOLINE, AUTOMOTIVE, LEADED, UNLEADED
VV-G-1690	9130-00-264-6215	BOUGHT ACCORDING TO SPECIFICATION	VV-G-1690, GASOLINE, AUTOMOTIVE, LEADED, UNLEADED
VV-G-1690	9130-00-264-6216	BOUGHT ACCORDING TO SPECIFICATION	VV-G-1690, GASOLINE, AUTOMOTIVE, LEADED, UNLEADED

"Fed. Spec. VV-G-1690" in SPEC XREF.

A fourth cross-reference--sorted by manufacturer's name--became available with the February 1986 cumulative update of the microfiche. This cross-reference is a four-column alphabetized list of manufacturers and suppliers, FSCMs, part numbers, and stock numbers. Figure 3-1 is a sample of the format for this cross-reference.

MANUFACTURERS NAME	FSCM	PART NUMBER	NSN
HANDMAN INCORPORATED	96900	DPR 242	8040-00-N00-0636
HANDY & HARMAN	73977	SIL-FDS(AWS-B CUP-5)	3439-00-262-4182
HANLON CHEM. CO., INC.	17351	VIBRA-CLEAN	8520-00-926-5065
HANLON CHEM. CO., INC.	17351	VIBRA-CLEAN	8520-00-782-2183
HANLON CHEM. CO., INC.	17351	VIBRA-CLEAN	8520-00-965-2109
HANOVER PROCESSING COMPANY	32444	HC-433, VV-L 800A	9150-00-276-2389
HARBISON WALKER REFRACTORIES	73064	ANCHOR DASH MIX 248 CN	9350-00-574-2871

Figure 3-1. Sample format for the manufacturer's name cross-reference.

Entries into the four cross-references are also possible with or without spaces and dashes. For example, MIL SPEC MIL-E-9500 may be entered in any of three ways: MIL SPEC MIL-E-9500, MIL-E-9500, or MILE9500.

A potential problem exists between the letter "O" and the number "0." If, for example, you need to know the identity of part number OC-265 manufactured by J.T. Baker Chemical Company, you may need to use some imagination in using the cross-reference. The item may be listed either alphabetically beginning with the letter "O" or it may be listed numerically under the digit "0." Likewise, the dash may or may not be input. Thus, J.T. Baker Chemical Company's OC-265 may be listed in any one of six ways: alphabetically under OC-265, OC 265, or OC265, or numerically under 0C-265, 0C 265, or 0C265.

WHEN AN ITEM IS NOT IN HMIS

You search HMIS and find your item of interest is not in HMIS. Can you assume that the item of interest is nonhazardous? No, you cannot. As was written earlier, the HMIS is a growing database. Some items in the supply system have not yet been entered into HMIS. Therefore, to be sure about the particular item you are searching for, check with your focal point (see Appendix A). Your focal point should be able to help you identify any hazards associated with the item in question or suggest other avenues you might explore in your search for information.

4. MICROFICHE FORMAT

INFORMATION AVAILABLE

There are three general types of data in HMIS -- safety and health data, transportation data, and disposal data. The information is organized under eight major sections:

- o Hazardous Item
- o Hazardous Components
- o Transportation Data
- o Additional Data
- o Health and Physical Property Data
- o Safety, Storage, Handling, and Fire Fighting Procedures
- o Spill and Leak Procedures
- o Disposal Information*

Figure 4-1 is a copy of an empty HMIS microfiche record. A completed HMIS microfiche record is found in Appendix E.

HMIS MICROFICHE FORMAT

When looking at Figure 4-1 you should notice that each major category is surrounded by asterisks (*). For example:

* * * * * HAZARDOUS COMPONENTS * * * * *

RADIOACTIVITY	FORM	TR GP	NRG LIC NUMBER	CHEMICAL NAME	CHEMICAL FAMILY	FORMULA
NA	NA	NA	NA	NA	ALKALI	NA
* * * * * HAZARDOUS COMPONENTS * * * * *						
NIOSH NO				CHEMICAL NAME	PCT	TLV
1T2 00000				POTASSIUM HYDROXIDE	30	2MG CUM
WR4905000				SODIUM HYDROXIDE	10	2MG CUM
VZ4050000				SODIUM CARBONATE	10	UNKNOWN
VZ2275000				SODIUM METABORATE	10	UNKNOWN
BX01875000				AMMONIA	20	25PPM
* * * * * TRANSPORTATION DATA * * * * *						

Empty HMIS record showing Hazardous Components major heading.

*See "HMIS Disposal Publication" on page 4-5 of this guide for a copy of an empty microfiche record for disposal information.

MSN	FSCM	MGR	PP IND	PM IND	PART NUMBER/TRADE NAME	ACT CD	DATE	PAGE NR
*** HAZARDOUS ITEM ***								
PROPRIETARY	MANUFACTURER	***** GENERAL INFORMATION *****				SPECIFICATION		MAG/WIL GAUSS
ITEM NAME	UI	UI CONTAINER QTY	TYPE OF CONT	NRT UNIT WT	LTD QTY-DOT	EXEMPTION NO		
RELATED LOCAL STOCK NO								
RADIOACTIVITY	FORM	NRC LIC NUMBER	CHEMICAL NAME	CHEMICAL FAMILY	FORMULA			
WIOSH NO	CHEMICAL NAME	***** HAZARDOUS COMPONENTS *****				TLV		
***** TRANSPORTATION DATA *****								
DOT SHIPPING NAME:	LABEL:		MODE:	ID NO:				WQ:
CLASS:	FOR INDIVIDUAL AIRLINE CARRIER EXCEPTIONS REFER TO TARIFF 6-D/CIRCULAR 6-D							
IMO SHIPPING NAME:	UN NO:	UN CLASS:	SUBSIDIARY RISK LABEL:			COMP GP:		
IMDG PAGE NO:								
IATA SHIPPING NAME:								
CLASS OR DIV:	SUBSIDIARY RISK CLASS:		LABEL:			UN OR ID NO:		
APR 71-4 SHIPPING NAME:	LABEL:		ID NO:	MPAC:				
CLASS:	***** TECHNICAL ENTRY FOR N.O.S. SHIPPING NAME *****							
***** ADDITIONAL DATA *****								

Figure 4-1. Layout of HMIS microfiche record.

N S N	 HEALTH AND PHYSICAL PROPERTY DATA										ACT CD	DATE	PAGE NR
BOILING POINT	VAP DEN/AIR - 1/	SOL IN H2O	FLASH POINT	VAP PRESS/MM HG/70 F/	TLV MIXTURE	STORAGE CODE								
APPEARANCE AND ODOR	LEL/PCT/	UEL/PCT/	SP GR	PCT VOLT BY VOL	EVAP RATE PER REFERENCE	NET PROP WT AMMO	NET EXP WT							
EFFECTS OF OVEREXPOSURE							MATERIALS TO AVOID							
STABLE	CONDITIONS TO AVOID			CONDITIONS TO AVOID			AUTO IGN			TEMP	VISCOSITY	CG AMMO CD		
HAZ POLYMERIZATION OCCUR	HAZARDOUS DECOMPOSITION PRODUCTS													
<p>. . . . SAFETY STORAGE HANDLING AND FIRE FIGHTING PROCEDURES</p> <p>EXTINGUISHING MEDIA</p> <p>UNUSUAL FIRE / EXPLOSION HAZARDS</p> <p>EMERGENCY FIRST AID PROCEDURES</p> <p>PROTECTIVE GLOVES</p>														
<p>TYPE OF RESPIRATORY PROTECTION</p> <p>VENTILATION</p>														
EYE PROTECTION	OTHER PROTECTIVE EQUIPMENT			HANDLING / STORAGE PRECAUTIONS										
<p>. . . . SPILL AND LEAK PROCEDURES</p>														
SPILL AND LEAK CONTROL														
WASTE ELIMINATION														
OTHER PRECAUTIONS														
SUPPLEMENTAL DATA														

DOD 6050.5-L

Figure 4-1. Layout of HMIS microfiche record (continued).

As you examined Figure 4-1, you probably noticed that each major heading contains several subheadings calling for specific information.

```

      * * * * * TRANSPORTATION DATA * * * * *
DOT SHIPPING NAME:
CLASS:          LABEL:          MODE:          ID NO:          RC:
IMO SHIPPING NAME:
IMDG PAGE NO:   UN NO:          UN CLASS:      SUB RISK LAB:      COM GP:
IATA SHIPPING NAME:
CLASS OR DIV:   SUBSIDIARY RISK CLASS:  LABEL:          UN OR ID NO:

```

Empty HMIS record showing data element subheadings.

These secondary headings are called data elements. Each HMIS record has the potential for containing more than 100 data elements. All of these elements are defined in Appendix B. The location of each data element is included as part of the Appendix B definitions.

The HMIS user should be aware that the database is still growing. Every day additional items of hazardous materials are being added to the database by the focal points listed in Appendix A. Significant efforts are made to acquire and develop data on items recently inventoried as well as items previously identified. In some data fields (e.g., transportation), the dynamics of regulatory changes and new technical data on chemicals makes change and update a continuing process. Given this continuous update process, the user must keep two thoughts in mind when using the HMIS database.

First, the HMIS has a limited number of data elements that must contain an entry (mandatory data elements). This is because the data required to merely identify an item as hazardous are minimal. Also, very few HMIS data elements would apply to every item in the system. An example is a license-exempt quantity of radioactive material that only presents a cause for precaution when large quantities of the item are stored together. Therefore, a number of data elements might be blank.

Second, by allowing space for future entries, all available information (even if only minimal data are entered) can be placed in the system as it becomes known. By providing at least some information on the items in the database, HMIS users have a starting point and can pursue additional information about an item of interest if needed.

Let's stop here and review what we've said so far.

- o The information on the HMIS microfiche is organized under major headings set off by asterisks.
- o The specific information you need to do your job can be found under subheadings called data elements.
- o The specific information you require may be incomplete and thus require additional research.

HMIS DISPOSAL PUBLICATION

Disposal data are contained in the second and newest HMIS publication (DoD 6050.5-L-1). This publication repeats some of the general information in the other two publications (e.g., NSN/LSN, Part Number Indicator, Part Number/Trade Name). The information also includes a reference to the number of records in the HMIS that correspond to the particular stock number, an indication of whether the Defense Reutilization and Marketing Office (DRMO) accepts accountability for the item, whether the DRMO will provide disposal assistance service, and whether an environmental impact statement or environmental assessment is available for the item. More specific information relating to disposal activities, including instruction sheets describing various disposal procedures, is also included in the publication. The microfiche layout showing the information contained in the publication is illustrated in Figure 4-2.

```

*****DISPOSAL FILE BASIC PUBLICATION*****
NSN      FSCN      ENTRIES      FP IND      PM IND      PART NUMBER/TRADE NAME      ACT CD      DATE      PAGE NO
PROPRIETARY      MANUFACTURER      ITEM NAME      UI      UI CONTAINER QTY

*****DRMS DISPOSAL CYCLE INFORMATION*****
*****DRMS DISPOSAL CYCLE INFORMATION*****
*****DRMS DISPOSAL CYCLE BYPASS
NEW CONDITION      USED CONDITION

ACCOUNTABILITY ACCEPTED BY DRMO:
DRMO DISPOSAL ASSISTANCE:
EIS/EA AVAILABLE:

REUTILIZATION:
TRANSFER:
SALES:

*****SAFETY PROCEDURES*****
*****SAFETY PROCEDURES*****

HANDLING STORAGE PRECAUTIONS      MATERIALS TO AVOID      STORAGE CODE

SPILL/LEAK CONTROL      SUPPLEMENTAL DATA

*****EPA HAZARDOUS WASTE CLASSIFICATIONS - NEW AND USED CONDITION*****
*****EPA HAZARDOUS WASTE CLASSIFICATIONS - NEW AND USED CONDITION*****

HW CODE      HW NAME      HW CHARACTERISTICS      ACUTE
(NEW)      (NEW)      (NEW)

(USED)      (USED)      (USED)

DOD 6050.5-1.-1

```

Figure 4-2. Layout of HMIS Disposal File.

NSN	ACT CD	DATE	PAGE NO
<p>*****HAZARDOUS COMPONENTS***** *****HAZARDOUS COMPONENTS***** *****HAZARDOUS COMPONENTS*****</p>			
NIOSH NO			PCT
CHEMICAL NAME			
<p>*****DISPOSAL GUIDELINES***** *****DISPOSAL GUIDELINES***** *****DISPOSAL GUIDELINES*****</p>			
<p>***DISPOSAL METHODS - SMALL QUANTITIES***</p>			
<p>***DISPOSAL METHODS - LARGE QUANTITIES***</p>			
<p>***DISPOSAL RESTRICTIONS***</p>			
<p>*****HAZARDOUS WASTE MANIFEST DATA***** *****HAZARDOUS WASTE MANIFEST DATA***** *****HAZARDOUS WASTE MANIFEST DATA*****</p>			
DOT PROPER SHIPPING NAME:	DOT LABEL:	UN/NA NO:	RQ:
DOT HAZARD CLASS:			EPA WASTE LABEL:
WASTE SHIPPING NAME:			
<p>DDO 6050.5-L-1</p>			

Figure 4-2. Layout of HMIS Disposal File (continued).

5. DATA ELEMENTS OF SPECIAL INTEREST TO YOU

As stated earlier, the HMIS is designed to help people working in a large number of different jobs. It is unlikely that you (or anyone else) will ever need all of the information on one microfiche record. For example, packaging and transportation people may need the information in the transportation section of the microfiche. Much of the other HMIS data are not needed by these people for routine work performance.



A survey of HMIS users with different job functions was used to identify data elements of particular value to them. The survey identified several data elements that were used in most instances. These data elements are:

- | | |
|------------------------------|--------------------------|
| o National Stock Number | o Part Number/Trade Name |
| o Part Number Indicator | o Manufacturer |
| o Emergency Telephone Number | o Item Name |

The remainder of this section identifies major job categories (functional areas) that have a need for selected information in HMIS and how people working in those areas can use that information. Also identified are the data elements most often used by people working in those functional areas (see Appendix B for definitions of the data elements). You should find the functional area heading

that best describes your job responsibilities. That section will identify the data elements that you will probably use most often in your work duties.

FUNCTIONAL AREA: DISPOSAL OPERATIONS

The workers in this functional area are usually concerned with receiving, storing, handling, transporting, and disposing of excess material and items identified as waste.



The HMIS has placed a major emphasis on providing valuable information to disposal operation personnel. The HMIS can help you identify an unknown item and its properties. By knowing the item's properties personnel can make decisions relating to:

- o Safe storage prior to disposal;
- o Recommended personal protective equipment;
- o Precautions to take in containing material leaking from a damaged container;
- o The reutilization, transfer, donation, and sales disposal cycle for the item;
- o Acceptable disposal methods for small and large quantities of specific materials;
- o Uniform Hazardous Waste Manifest information;
- o Defense Reutilization and Marketing Office accountability acceptance; and
- o Restrictions regarding the transportation or disposal of items as wastes.

The disposal publication is the most recent one added to the system. In addition to augmenting some of the information in the other two publications, this new publication provides guidance in handling the material as a used product or as waste. This file assists you in the preparation of Uniform Hazardous Waste Manifests (see Figure 5-1), provides guidance in processing material through the Defense Reutilization and Marketing Service (DRMS) disposal cycle, and provides disposal guidelines for small and large generators.

The data elements most useful to people working in disposal operations include:

- | | |
|--|--|
| o Storage Code | o Flash Point |
| o Type of Container | o Other Protective Equipment |
| o Percentage of Hazardous Ingredients | o NIOSH No. (National Institute for Occupational Safety and Health Number) |
| o Chemical Name (Hazardous) | o Effects of Overexposure |
| o Threshold Limit Value | o Materials to Avoid |
| o DOT Class | o Emergency First Aid Procedures |
| o Mode Indicator | o Protective Gloves |
| o Reportable Quantity | o Eye Protection |
| o DOT Label | o DOT Shipping Name |
| o ID Number | o Waste Elimination |
| o Spill and Leak Control | o Original Unit of Issue |
| o Other Precautions | o DRMO Disposal Assistance Service |
| o Accountability Acceptance by DRMO | |
| o EPA Hazardous Waste Code - New Condition | o EPA Hazardous Waste Code - Used/Contaminated Condition |
| o EPA Hazardous Waste Characteristic - New Condition | o EPA Hazardous Waste Characteristic - Used/Contaminated Condition |
| o EPA Acute Hazard | o Disposal Cycle - RTD Bypass |
| o Disposal Cycle - Sales Bypass | o Disposal Method - Small Quantities |
| o Disposal Restrictions | o Disposal Method - Large Quantities |

Please print or type. (Form designed for use on elite (12 pitch) typewriter)

Form Approved: OMB No. 2050-0039 Expires 4-1-84

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law	
3. Generator's Name and Mailing Address				A. State Manifest Document Number		
4. Generator's Phone ()				B. State Generator's ID		
5. Transporter 1 Company Name		6. US EPA ID Number		C. State Transporter's ID		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		
9. Designated Facility Name and Site Address		10. US EPA ID Number		E. State Transporter's ID		
				F. Transporter's Phone		
				G. State Facility's ID		
				H. Facility's Phone		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers	13. Total Quantity	14. Unit Wt/Vol
				No.	Type	
a.						
b.						
c.						
d.						
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.						
Printed/Typed Name				Signature		Date Month Day Year
17. Transporter 1 Acknowledgement of Receipt of Materials						Date
Printed/Typed Name				Signature		Month Day Year
18. Transporter 2 Acknowledgement or Receipt of Materials						Date
Printed/Typed Name				Signature		Month Day Year
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.						
Printed/Typed Name				Signature		Date Month Day Year

EPA Form 8700-22 (3-84)

Figure 5-1. Uniform Hazardous Waste Manifest.

- o DOT Proper Shipping Name (waste) o UN/NA Number
- o Supplemental Disposal
File Data

How can the HMIS help you fill out a Uniform Hazardous Waste Manifest? Suppose you have several 5-pound bottles of contaminated technical grade barium cyanide (NSN 6810-00-241-8420) that must be transported as a hazardous waste. The disposal publication contains the required information. If you look at Section 11 of the manifest (refer to Figure 5-1) you will see that you need the DOT Proper Shipping Name, Hazard Class, and ID Number for the item. You look up NSN 6810-00-241-8420 and find the following information:

DOT Proper Shipping Name:
Waste Barium Cyanide, Solid

DOT Hazard Class:
Poison B

DOT Label: Poison B

Reportable Quantity: No

In addition, the publication tells you the EPA Hazardous Waste Number (P013)--optional information for the manifest. The EPA Hazardous Waste number is also required when preparing annual or biennial State and EPA reports of disposal actions.

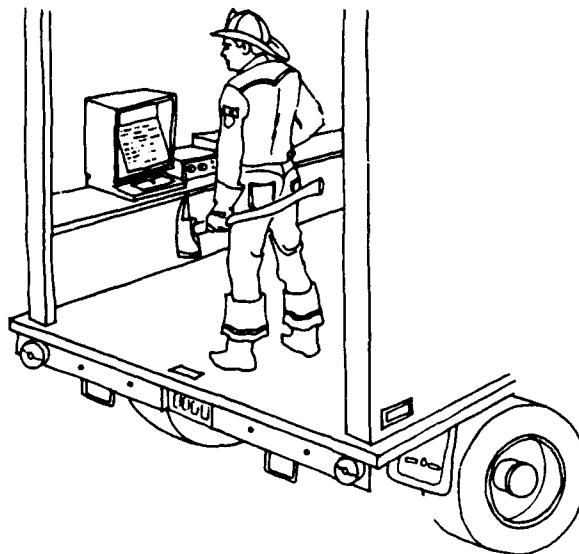
The disposal publication helps in other ways. It indicates to both the DRMO operator and the user of the item (e.g., barium cyanide) that the DRMO will accept accountability and provide disposal assistance service.

The HMIS provides you with some safety information, too. The disposal publication warns against touching spilled barium cyanide (under Spill and Leak Control). The HMIS basic publication tells you not to store the item near acids.

FUNCTIONAL AREA: EMERGENCY RESPONSE

Emergency response personnel include fire fighters, spill teams, and emergency medical technicians. Most facilities have trained spill response teams whose members have primary job responsibilities in other functional areas. In the event of a spill or fire, members of the team can be considered as belonging to the emergency response functional area. Often the only information available to response personnel in an emergency situation is the stock number of the item involved, a placard, or a product name. A quick telephone call to the fire department or a portable microfiche reader in the response vehicle provides you with a quick reference to the item and its properties. Once you identify the material you're dealing with, you can take remedial action to protect workers and property.

You may also call ChemTrec (800-424-9300; 483-7616 in Metropolitan Washington, DC) to obtain immediate advice on responding to an emergency situation involving hazardous materials. ChemTrec personnel are available 24 hours per day.



A portable microfiche reader and MIS microfiche can be included on emergency response vehicles.

The data elements that people working in emergency response functions find most helpful include:

- | | |
|--|--|
| o NIOSH No. (National Institute for Occupational Safety and Health Number) | o Storage Code |
| o Appearance and Odor | o Chemical Name (Hazardous Components) |
| o Percent | o Spill and Leak Control |
| o Threshold Limit Value | o Upper Explosive Limit |
| o Item Name | o Hazardous Polymerization |
| o Conditions to Avoid | o Lower Explosive Limit |
| o Reportable Quantity (RQ) | o Hazardous Decomposition Products |
| o ID Number | o Threshold Limit Value Mixture |
| o Extinguishing Media | o Special Fire Fighting Procedures |
| o Emergency First Aid Procedures | o Protective Gloves |
| o Unusual Fire/Explosion Hazards | o Ventilation |
| o Type of Respiratory Protection | o Handling/Storage Precaution |
| o Other Protective Equipment | o Waste Elimination |
| o Eye Protection | |

Besides providing the obvious item identification information to emergency response personnel, the HMIS is useful in providing less obvious information. For example, under hazardous decomposition products, a medical technician may find that an item releases a poisonous gas (like cyanide). In the case of barium cyanide, the emergency first aid procedures include a statement indicating the use of amyl nitrite pearls. In another instance, if a worker had ingested a material containing cyclohexanol, you would be cautioned against inducing vomiting.

The HMIS provides valuable data to emergency response personnel with environmental responsibilities. Data elements like solubility in water and specific gravity provide clues on containing materials either before or after they have reached surface water systems. The unit of issue container quantity can help you determine how much material is involved in a spill. And the "other precautions and supplemental data or waste elimination" sections may indicate that extraordinary efforts should be undertaken to isolate the material from fish and wildlife populations.

If the emergency situation involves broken bottles of barium cyanide, individuals with occupational safety and health responsibilities can check the HMIS Basic publication and find out that full protective clothing and a self-contained breathing apparatus are recommended. Also, by referring to the HMIS fire fighters can find out that toxic fumes can be produced when water or steam comes into contact with barium cyanide.

FUNCTIONAL AREA: ENGINEERING/CONSTRUCTION

Employees in engineering and construction can use the HMIS to assist in the design of new structures, the redesign of existing structures, and



HMIS can be used in design or design evaluation.

related functions. Employees in engineering, design, and construction of hazardous materials handling/storage systems require specific information about the individual items, their properties, and their storage requirements. Information under such data elements as storage codes, flash points, conditions to avoid, and materials to avoid can assist in planning for compatible storage designs. Additionally, some of the information contained in the disposal file can prove valuable in designing new DRMO facilities, retrofitting existing DRMO facilities for receipt of hazardous materials, or designing waste treatment facilities.

Individuals working in the engineering/construction functional area will find the following data elements most useful:

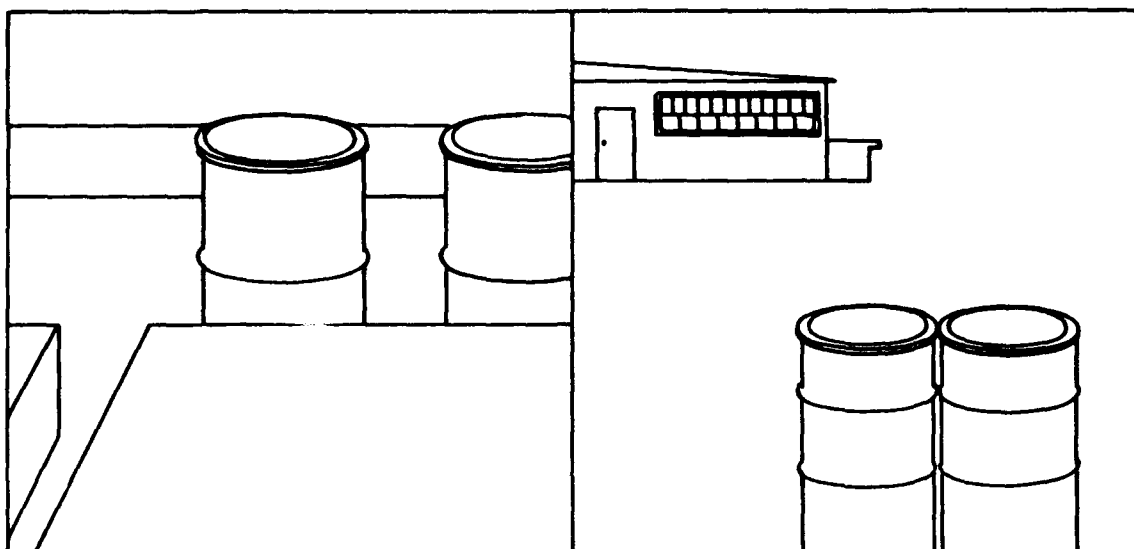
- | | |
|--|--|
| o Type of Container | o Unit of Issue |
| o Chemical Name (Hazardous Components) | o Net Unit Weight |
| | o Chemical Family |
| o Storage Code | o Flash Point |
| o Spill and Leak Control | o Specific Gravity |
| o Formula | o EPA Hazardous Waste Characteristic - New Condition |
| o Disposal Method - Large Quantities | o Disposal Method - Small Quantities |
| o Conditions to Avoid | |
| o EPA Hazardous Waste Characteristic - Used/Contaminated Condition | |

As part of your job, you may be requested to design storage space for hazardous materials. You will need to know things like conditions to avoid and storage compatibility codes so that you don't design space that stores flammables in close proximity to oxidizers. You will find data elements such as unit of issue, type of container, and net unit weight particularly helpful in determining shelving or warehousing requirements. All of those information needs and more can be found in the HMIS.

FUNCTIONAL AREA: ENVIRONMENTAL MONITORING AND CONTROL

Workers assigned to this functional area are concerned with preventing the release of hazardous materials to the environment. A spill response team usually has an employee with job responsibilities in this functional area. Personnel working in this functional area must also interact with employees engaged in activities under other functional areas. Knowledge of the physical and chemical properties (e.g., solubility in water) can help you advise engineers in the design and placement of storage facilities. Some data elements (e.g., solubility in water, conditions to avoid, storage code, disposal restrictions, handling storage precautions) can help in formulating storage recommendations -- for example, should the item be stored in a bermed

area? Many of the data elements contained in the disposal file may assist in resolving questions concerning what constitutes "most conforming storage" requirements.



Knowledge of chemical or physical properties of materials can provide valuable information to workers with environmental responsibilities.

The HMIS can also assist you in your role as a member of or adviser to the spill response team. Again, data elements such as solubility in water, proper disposal methods (e.g., can the effluent from a spill be diverted into the sanitary disposal system?) and reportable quantity (RQ) information will help in the decision-making process.

Employees with environmental monitoring and control responsibilities should find the following data elements most useful:

- | | |
|---|--|
| o Vapor Density | o Chemical Family |
| o Storage Code | o Chemical Name (Hazardous Components) |
| o Solubility in Water | o Evaporation Rate |
| o Conditions to Avoid | o Viscosity |
| o Appearance and Odor | o Percent Volatile |
| o Handling/Storage Precautions | o Spill and Leak Control |
| o Other Precautions | o Disposal Method - Large Quantities |
| o Environmental Impact Statement/
Environmental Assessment
Availability | o Disposal Method - Small Quantities |
| o Disposal Restrictions | |

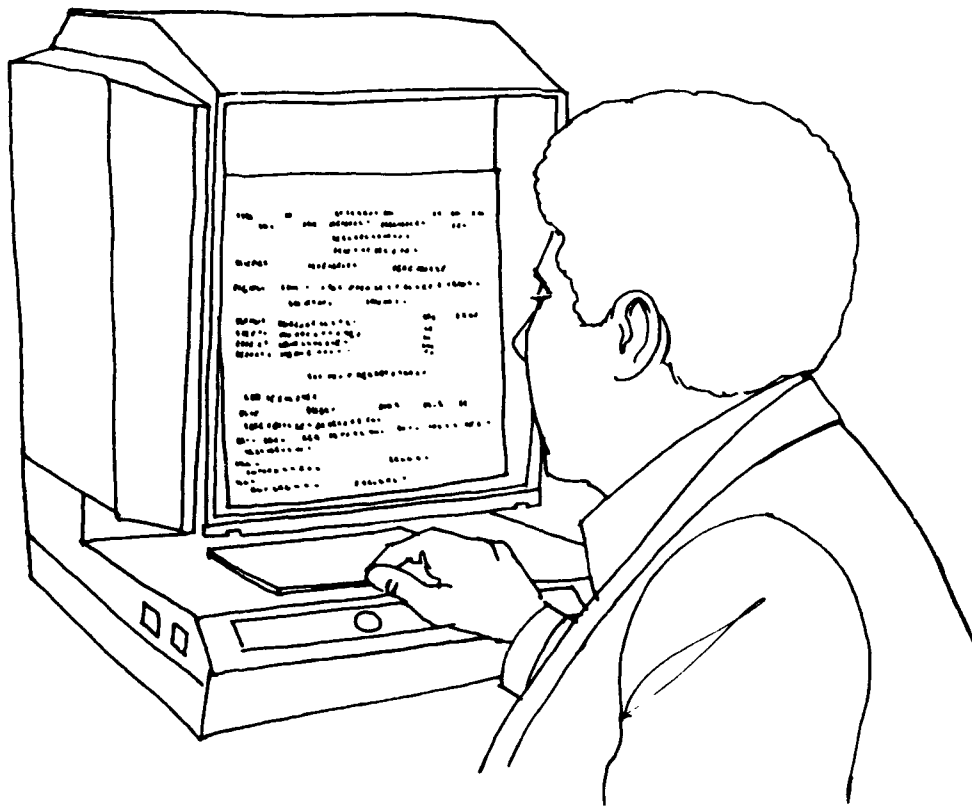
Specifically, the HMIS can help you in responding to questions concerning disposal activities. You may be asked if a particular item can be released into a sanitary sewer system. By knowing the volume of material included and analyzing HMIS data under selected data elements (e.g., chemical name and percentage, solubility in water, evaporation rate per reference, vapor pressure) you should be able to determine if the material should be discharged into a sanitary system, be pretreated prior to discharge, or disposed of in another manner. The disposal publication can also help you by:

- o Summarizing information on acceptable treatment and disposal mechanisms for large and small quantities of the item;
- o Citing technical information on constraints or restrictions to disposal of the item as a waste;
- o Guiding you in contacting the DRMO to learn if they will accept accountability or provide disposal assistance service for the item.

For information on how the HMIS can help you as a member of a spill response team, refer to the emergency response functional area in this Users' Guide.

FUNCTIONAL AREA: OCCUPATIONAL SAFETY AND HEALTH

Individuals assigned to this functional area are primarily trained industrial hygienists, occupational medicine technicians, and safety officers. Again, they are generally represented on a spill response team.



As an occupational safety and health professional, you need to know the physical and chemical properties and toxicity data usually found on MSDSs. The HMIS is a control file of, among other things, material safety data sheets (MSDSs). Data such as the hazardous components and threshold limit values (TLVs) for items in the military supply system can provide you with the information needed to make decisions concerning the recommended respirators, ventilation systems, gloves, eye protection, and other personal protective equipment that workers should wear when handling a specific hazardous material. Additionally, storage codes, flash points, and other physical and chemical data available in the HMIS allow you to advise on proper storage decisions.

Personnel in the occupational safety and health functional area should find the following data elements most useful:

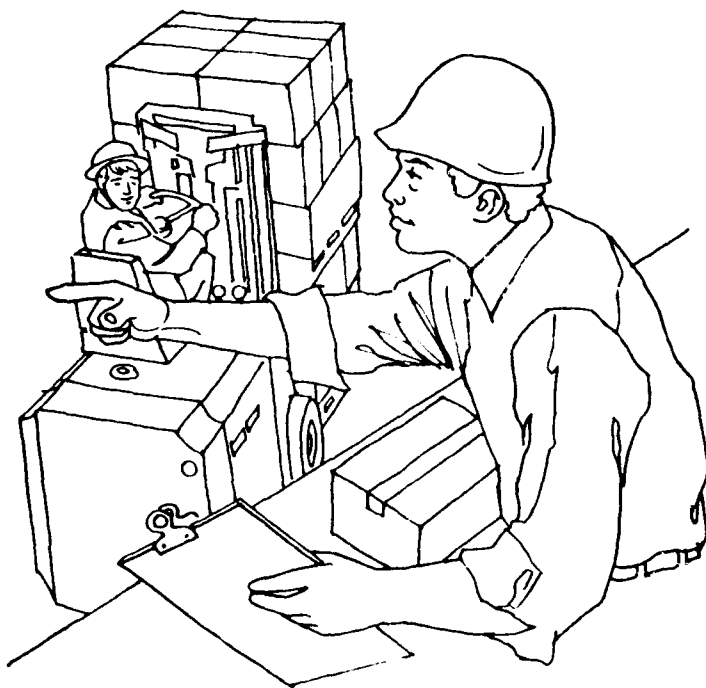
- | | |
|---|---|
| o Chemical Name | o Materials to Avoid |
| o Auto Ignition Temperature | o Hazardous Polymerization |
| o Flash Point | o Conditions to Avoid |
| o NIOSH No. (National Institute of Occupational Safety and Health) Number | o Safety, Storage, Handling, and Fire Fighting Procedures Data Elements |
| o Percent | o TLV Mixture |
| o Threshold Limit Value (TLV) | o Storage Code |
| o Lower Explosive Limit | o Percent |
| o Upper Explosive Limit | o Appearance and Odor |
| o Eye Protection | o Handling/Storage Precautions |
| o Emergency First Aid Procedures | o Protective Gloves |
| o Ventilation | o Type of Respiratory Protection |
| o Other Protective Equipment | o Chemical Name (Hazardous Components) |

Safety and health professionals may use the data in HMIS as a tool when making decisions affecting worker safety. The safety specialist may use data elements such as lower explosive limit, upper explosive limit, flash point, storage code, or other physical characteristics to make decisions on the adequacy of the facility, material handling equipment, and procedures affecting life and property. The industrial hygienist and bioenvironmental engineer may use the list of chemical components and the chemical formula in the HMIS when evaluating the health hazard potentials of hazardous materials as they are used in the workplace. This information is also used to develop a sampling strategy for evaluating workers' exposures to potentially hazardous materials and for recommending solutions to reduce the health hazards. During an emergency spill, the chemical and physical characteristics provided in the HMIS could be vital when advising spill team members on control measures necessary to protect their health and conduct cleanup with minimum risk.

The identification of hazardous components and their TLVs, the vapor pressure of the item, and recommended personal protective equipment are vital data that assist you in making decisions that affect worker safety. For example, on a routine survey of the motor shop on your facility you learn that a new solvent is being used to clean metal parts. Air samples are needed to determine if conditions exceed the permissible exposure level (PEL). You can refer to the HMIS for information on product ingredients and the personal protective equipment recommended by the manufacturer. With this information, you can sample properly to evaluate worker exposure and check to see if the proper personal protective equipment is used. You may also receive a call from the supervisor at a recouplement facility who requests guidance in selecting the proper respiratory protection equipment that personnel should wear when recouplementing a specified item; you can refer to HMIS for information on the product, its hazards and properties. You can then question the supervisor about the conditions under which recouplement will occur, check recommended personal protective equipment listed in HMIS, and use your expertise to provide sound suggestions to assure that proper procedures are followed.

FUNCTIONAL AREA: STORAGE AND HANDLING

The people working in the storage and handling area who are most likely to use HMIS are those with supervisory responsibilities. They are the ones



HMIS can be used to help make decisions on where to safely store hazardous items.

who decide where an item is to be stored. The packers need to know some of the transportation regulations. However, the paperwork that packers receive from the transportation section should contain the information needed to properly prepare an item for shipment.

As a storage supervisor you must decide, on a daily basis, where to store quantities of various hazardous commodities as they arrive. You must be aware of an item's characteristics before you can select the most appropriate storage location. The HMIS is a valuable resource. It provides you with most of the information you need, including storage compatibility codes, flash points, conditions to avoid, and materials to avoid if questions arise concerning proper storage. The data in the HMIS also can provide guidance to storage and handling personnel responsible for assuring adherence to loading compatibility guidelines.

Storage and handling personnel find the following data elements of most value:

- | | |
|--|-----------------------|
| o Unit of Issue | o Flash Point |
| o Type of Container | o Storage Code |
| o Item Name | o Appearance and Odor |
| o Chemical Name (Hazardous Components) | o DOT Class |
| o IATA Class | o IMO Shipping Name |
| o Hazard Class Label(s) | o AFR 71-4 Class |

FUNCTIONAL AREA: TRANSPORTATION

People working in the transportation sector require the information needed to properly prepare and, where required, certify a package (and paperwork) for shipment. Data needed include the proper shipping name, required labels, unit of issue, shipment weight, containers, packing restrictions, and shipping restrictions based on the required mode of transportation. All of this information is available under the "Transportation Data" heading.

- | | |
|------------------------------------|----------------------------|
| o Unit of Issue | o DOT Class |
| o Unit of Issue Container Quantity | o DOT Label(s) |
| o Type of Container | o Mode Indicator |
| o Net Unit Weight | o UN/NA Number |
| o Limited Quantity Indicator | o Reportable Quantity |
| o Exemption Number | o IMO Shipping Name |
| o Chemical Family | o IMDG Page Number |
| o DOT Shipping Name | o United Nations Class |
| | o Subsidiary Risk Label(s) |

- o Ammunition Compatibility Group
- o IATA Shipping Name
- o IATA Class or Division
- o IATA Label(s)
- o AFR 71-4 Shipping Name
- o AFR 71-4 Class
- o AFR 71-4 Label(s)
- o MMAC Indicator
- o Technical Entry for N.O.S. Shipping Name
- o Additional Data
- o Flash Point

How can the HMIS help you do your job? If you work as a transportation classifier, you check the information provided on Material Release Orders (MROs) and fill in the required transportation information. So, if a military facility in Europe orders two 5-gallon cans of acetone, NSN 6810-00-184-4796, you can check HMIS to find the proper IATA Shipping Name (acetone), required labels (flammable liquid), flash point (4F) and the United Nations Number (1090). The HMIS may also tell you that 5-gallon containers of acetone are not permitted on passenger aircraft but can be shipped on cargo aircraft. Likewise, if it is your responsibility to certify shipment of dangerous goods, you need this same information.

AUTOMATIC DATA PROCESSING APPLICATIONS

The HMIS microfiche are generated from computer tapes. These tapes are available to HMIS users who have automatic data processing (ADP) capabilities. The HMIS tapes can be helpful if you have ready access to a computer and terminal or to a minicomputer. The tapes allow for the manipulation of the HMIS data in ways that best serve individual user needs. To find out how you can receive the tapes, contact your focal point (Appendix A).

Few, if any, facilities have a need for information on every item in HMIS. You can use the tapes to create a file of items that your facility uses. You can then create other files that contain just the information you need. For example, an industrial hygienist or bioenvironmental engineer may desire to track certain high-hazard items. Computer programs can be written that allow those individuals to know which shops use the items, how much is used, the names and telephone numbers of supervisory personnel in those shops, and information on any potential exposure problems that may exist.

Personnel records can be combined with HMIS data to help maintain individual exposure records including average daily exposure and overexposure due to inadvertent contact with specific hazardous materials.

Shipboard supply officers or safety personnel can use programs specially designed to maintain up-to-date inventories of selected hazardous materials.

As you can see, ADP applications of the information in HMIS are numerous. Your use of the magnetic tapes is only limited by the hardware you have access to and the programs you are able to write.

6. MORE ABOUT THE HMIS

HMIS HISTORY

Although the HMIS became operational in 1979, its roots can be traced back to the publication of Federal Standard 313B in 1971. That standard requires suppliers to provide health and safety and physical and chemical information on potentially hazardous materials purchased by Federal agencies. The suppliers must provide that information on a Material Safety Data Sheet (MSDS) (see Figure 6-1). In 1978, Department of Defense established policies for the development of the HMIS as the single primary reference database in the Department of Defense for information on hazardous items. The Defense Logistics Agency was assigned development and operating responsibility for the system. The operating system was implemented in March 1979 and is operated at one of the agency's primary level field activities, the Defense General Supply Center (DGSC) in Richmond, Virginia. In part, the system was designed to consolidate other partial and decentralized data sources in the Department of Defense and bring that information into a readily disseminated computerized database. Starting with approximately 2,000 partial records in 1979, the system has been built to over 30,000 comprehensive records on hazardous items in its first six years.

FROM THE SUPPLIER TO HMIS - A GENERAL OVERVIEW

How does the information flow from the manufacturer through HMIS to you? Now let's trace a potentially hazardous item through the system.*

Government contracts require that suppliers of hazardous items provide a special form called a MSDS which should arrive at the receiving facility before the material. The MSDS supplies most of the information on an HMIS record. A logical question then is "How does the information on an MSDS get into the system?"

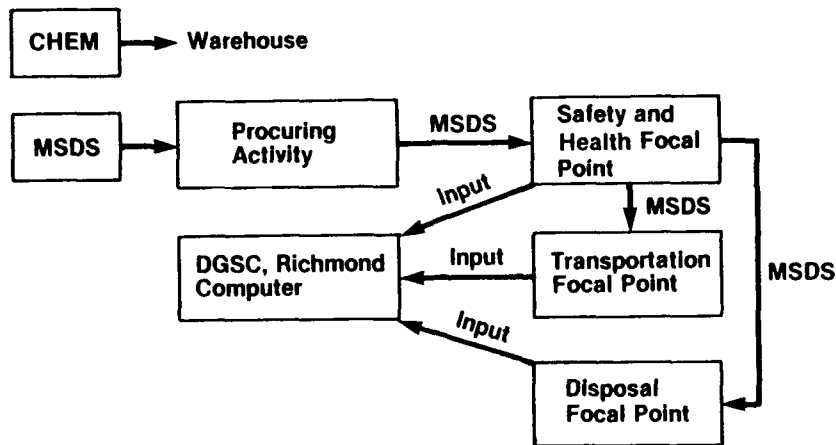
On receipt of an MSDS, a copy is sent to the focal point(s) for the agency that ordered the item. Following the instructions in DoD 6050.5-M, DoD Hazardous Materials Information System Procedures, the health and safety focal point enters the MSDS data into the system. The transportation focal point examines the MSDS and, in some cases, a copy of the shipping papers. Using the appropriate regulations, the transportation focal point completes the "Transportation Data" category for that item and enters the data into the HMIS. The Hazardous Materials Technical Center is the HMIS disposal focal

*Please keep in mind that the "official" procuring process is not of concern here so, in the example, we're not addressing most of the required contracting procedures. You should refer to Federal Acquisition Regulation (FAR) 52.223-3 Hazardous Materials Identification and Material Safety Data and service supplements to the FAR for more information on contractual requirements.

SECTION V - HEALTH HAZARD DATA			
EFFECTS OF ACUTE AND CHRONIC OVEREXPOSURE			
EMERGENCY AND FIRST AID PROCEDURES			
SECTION VI - REACTIVITY DATA			
STABILITY <input type="checkbox"/> UNSTABLE <input type="checkbox"/> STABLE	CONDITIONS TO AVOID (Specify type)		
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
HAZARDOUS POLYMERIZATION <input type="checkbox"/> MAY OCCUR <input type="checkbox"/> WILL NOT OCCUR	CONDITIONS TO AVOID (Polymerization)		
SECTION VII - SPILL OR LEAK PROCEDURES			
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED			
WASTE HANDLING AND DISPOSAL METHOD			
NEUTRALIZING AGENT			
SECTION VIII - OCCUPATIONAL PROTECTIVE MEASURES			
RESPIRATORY PROTECTION (Specify type)			
VENTILATION (Specify type)			
PROTECTIVE GLOVES (Specify type)	EYE PROTECTION (Specify type)	OTHER PERSONAL PROTECTIVE EQUIPMENT (Specify type)	
SECTION IX - SPECIAL PRECAUTIONS			
HANDLING AND STORAGE PRECAUTIONS			
OTHER PRECAUTIONS			
SECTION X - TRANSPORTATION			
APPLICABLE REGULATIONS <input type="checkbox"/> AS CPH <input type="checkbox"/> HMO <input type="checkbox"/> TARIFF 60 <input type="checkbox"/> IATA <input type="checkbox"/> MILITARY AIR (APR 71-7)			
SHIPPING NAME		ID NUMBER	REPORT QTY
HAZARD CLASS		LABELS	
UNIT CONTAINER		DOT SPIC CONTAINER	DOT EXEMPT/DOD CCH
AEROSOL PROPELLANT(S)		NET EXPL BY	

Figure 6-1. Material Safety Data Sheet (continued).

point and enters the required information for the disposal publication into the system.



How information on hazardous materials gets into HMIS.

This process can be further illustrated with an example. The motor shop at Portsmouth Naval Shipyard requisitions a new item -- "Solvent X." The commercial supplier is identified and a contract to purchase the item is issued. The contract specifies the shipping address and directs the supplier to prepare and supply the MSDS in accordance with the procedures in Federal Standard 313. Normally the MSDS will be supplied to the purchasing activity with an additional copy being provided to an HMIS safety and health focal point in the Military Service or Agency that purchased the item. In any case it is up to the purchasing activity to assure that the MSDS is sent, in accordance with established service or agency procedures, to the appropriate HMIS focal point. The focal point assures proper preparation of the data for input into the system. You should note the NSN and specification number (if known) on the MSDS. A list of all HMIS focal points is found in Appendix A.

Now...what happens to these raw data once they have been received from the suppliers? First the HMIS safety and health focal point reviews the MSDS for reasonableness, accuracy, and completeness. Then they prepare that portion of the data for entry into the system. The next step is to have the people responsible for developing the transportation and disposal data develop the information and place it in the system. Be aware that data in the HMIS is used by more than these three functions, but the terms are used for convenience of identifying data groups.

If you take a minute to scan several HMIS microfiche records, you will probably notice that some are almost complete -- others are almost empty. The data in the HMIS is only as good as the information provided to the Government. Most manufacturers of hazardous materials are conscientious and provide good MSDSs for their products. However, some manufacturers supply as little information as possible. In most cases those nearly blank microfiche records are caused by nearly blank MSDSs. Blank entries can also mean something else. They can signify that the data element does not apply for the listed

item. For example, a 15-gallon drum of nitric acid will not have an entry under "Flash Point" (or under any of the other nonapplicable data elements).

IF YOU FIND AN ERROR

Occasionally errors slip into the HMIS. The errors may be the result of improper input -- for example, two digits may have been transposed (e.g., a flash point of 93F Tag Closed Cup was entered rather than 39F Tag Closed Cup).

In other cases, the manufacturer may have made an error when completing the MSDS. In any event, if you notice an error or inconsistency in the data you should notify your appropriate focal point. After contacting the manufacturer, the focal point will make every effort to correct the data in the HMIS. You may notice the corrected data in the forthcoming cumulative update.



If you find an error, contact your focal point.

Likewise, if you have an MSDS for an item not in the HMIS, forward a copy to your focal point (indicate the stock number and contract number on the MSDS). If your agency does not have a focal point, you should contact the Defense Logistics Agency located at the address on page 2-2 of this guide. If necessary, the manufacturer will be contacted to verify the information. The data will then be entered into the system.

If you have any questions concerning the HMIS and its use, please contact your focal point for assistance. Through your efforts and use, the HMIS can become the valuable resource it's meant to be.

Appendix A
HMIS Focal Points

The focal points are:

1. Army

A. Safety and Health: Commander
U.S. Army Environmental Hygiene Agency
ATTN: HSHB-OI-F
Aberdeen Proving Ground, MD 21010-5422
Telephone: AUTOVON 584-3144/3946
Commercial (301)671-3144/3946

B. Transportation: Director
AMC Packaging, Storage,
and Containerization Center
ATTN: SDSTO-TC-T
Tobyhanna, PA 18466-5097
Telephone: AUTOVON 795-7070
Commercial (717) 894-7070

2. Defense Logistics Agency

A. Safety and Health: Commander
Defense General Supply Center
ATTN: DGSC-STH
Richmond, VA 23297-5000
Telephone: AUTOVON 695-3104/4371
Commercial (804) 275-3104/4371

B. Transportation: Same as above.

3. Air Force

A. Safety and Health: USAF Occupational and Environmental
Health Laboratory
ATTN: ECH
Brooks AFB, TX 78235-5501
Telephone: AUTOVON 240-3214
Commercial (512) 536-3214

B. Transportation: Commander
HQ Air Force Logistics
Command
HQ AFLC/DSTP
Wright-Patterson AFB, OH 45433-5999
Telephone: AUTOVON 787-4503
Commercial (513) 257-4503

4. General Services Administration

A. Safety and Health: General Services Administration
Federal Supply Service
ATTN: FCMM Crystal Mall-4, Room 706
Washington, D.C. 20406-0001
Telephone: Commercial (202) 557-0947

B. Transportation: Same as above.

5. Marine Corps

A. Safety and Health: Same as Navy safety and health focal point.

B. Transportation: Same as Navy transportation focal point.

6. Navy

A. Safety and Health: Navy Environmental Health Center
ATTN: HMIS Code 342
Bldg. X 353, Naval Station
Norfolk, VA 23511-6695

Telephone: AUTOVON 564-4657/2699
Commercial (804) 444-4657/2699

B. Transportation: Navy Material Transportation Office
ATTN: Code 025
Bldg-Z 133-5, Naval Station
Norfolk, VA 23511-6691

Telephone: AUTOVON 564-4376
Commercial (804) 444-4376

7. Defense Mapping Agency

A. Safety and Health: Director
Defense Mapping Agency
Building 56, U.S. Naval Observatory
Washington, D.C. 20305-3000

Telephone: AUTOVON 294-1450
Commercial (202) 653-1450

B. Transportation: Same as above.

8. National Security Agency

- A. Safety and Health: Director
National Security Agency
Central Security Service
ATTN: Safety Officer
Ft. George G. Meade, MD 20756-6000

Telephone: AUTOVON 235-6981
Commercial (301) 688-6981
- B. Transportation: Same as above.

9. U.S. Coast Guard

- A. Safety and Health: Commandant (G-CSP)
U.S. Coast Guard
Washington, D.C. 20593-5000

Telephone: Commercial (202) 426-1886
- B. Transportation: Commandant (G-FLP)
U.S. Coast Guard
Washington, D.C. 20593-5000

Telephone: Commercial (202) 426-0962

10. Army/Air Force Exchange Services

- A. Safety and Health: Commander
Army and Air Force Exchange Services
ATTN: SS-H
Dallas, TX 75266-0202

Telephone: AUTOVON 967-3444
Commercial (214) 780-2720

Appendix B

Glossary of Data Elements on HMIS
Microfiche Record and Disposal Publication1. Accountability Acceptance by DRMO

A "Yes" or "No" entry will be used to indicate whether the item is being accepted for accountability by the Defense Reutilization and Marketing Office (DRMO) for processing or whether it belongs to one of eight categories of hazardous materials not accepted by DRMO.

NOTE: Custody of material by DRMO is handled on a local basis supported by the most conforming storage policy criteria.

Location: Disposal publication.

2. ACT CD (Action Code)

A one-letter code indicating an addition (A), change (C), or deletion (D) in the data. "A" appears when new data are added to the file. "C" indicates that some or all data elements have been changed. "D" is used when a focal point determines the item was erroneously entered and does not belong in the HMIS. There must be an entry in this data field.

Location: Microfiche page 1 on identification line and Disposal publication.

3. Additional Data

This section includes unique data (particularly transportation data) that applies to the item. It may also contain "overflow data" that exceeds the space limitations established for another section. You may also find an entry indicating that the item is not regulated for transportation.

Location: Microfiche page 1 last item.

4. AFR 71-4 Shipping Name

The shipping name specified in Table 4-1 of AFR 71-4, TM 38-250, NAVSUP PUB 505, MCO P4030.19D, DLAM 4145.3, Preparation of Hazardous Materials for Military Air Shipment.

Location: Microfiche page 1 under Transportation Data.

5. Appearance and Odor

A description of the physical state of the material and any characteristic odor. For example, a solvent might be described as being a "clear colorless liquid with a ketone odor." You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

6. Auto Ign Temp (Auto Ignition Temperature)

The minimum temperature (expressed in degrees F or degrees C) at which the material will burn or explode in the absence of a spark or flame. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

7. Boiling Point

The temperature in degrees Fahrenheit - F - or degrees centigrade - C - at which the material boils at normal pressure. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

8. CG AMMO CD (Coast Guard Ammunition Code)

A three-position code used to describe and classify military explosives so that they can be stowed aboard ship in a safe and compatible manner (see 46 CFR 146.29-100 for the codes). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

9. Chemical Family

The generic name of the chemical family to which the product belongs (e.g., acid, base, ketone). This data element only applies to products consisting of a single element or compound. You may or may not find an entry under this data element.

Location: Microfiche page 1 under General Information.

10. Chemical Name

The chemical name of the product. It only applies to products consisting of a single element or compound (e.g., oxygen). This data element may also list synonyms for the item.

Location: Microfiche page 1 under General Information and Disposal publication.

11. Chemical Name (Chemical Name of Hazardous Component Ingredient)

The most commonly used names of each hazardous material in the item. You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Components.

12. Class (AFR 71-4)

The hazard class listed in Table 4-1 of AFR 71-4. There are 20 possible AFR 71-4 hazard classes.

Location: Microfiche page 1 under Transportation Data.

13. Class (DOT Class)

The hazard class for the item being shipped. The hazard class is referenced in 49 CFR 172.101. There are 23 possible entries (e.g., flammable liquid, corrosive material, ORM-A).

Location: Microfiche page 1 under Transportation Data and Disposal publication.

14. Class (IATA Shipping)

The hazard class specified in Section IV of the IATA regulations. There are 16 possible IATA hazard classes.

Location: Microfiche page 1 under Transportation Data.

15. COM GP (Ammunition Compatibility Group)

The compatibility group for ammunition as defined for explosives, UN Class 1, in the International Maritime Organization (IMO) regulations and as defined in DOD Standard 6055.9.

Location: Microfiche page 1 under Transportation Data.

16. Conditions to Avoid (Because of Hazardous Polymerization)

Reasonable foreseeable conditions (such as temperature) that may initiate polymerization. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

17. Conditions to Avoid (Because of Instability)

Identifies the conditions that may cause a dangerous reaction (e.g., temperature limits or shock). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

18. Date

The Julian date (year and day number) that the most recent MSDS was reviewed and data were entered into the system. This date does not necessarily indicate how current the information is. There must be an entry under this data element.

Location: Microfiche pages 1 and 2 on identification line and Disposal publication.

19. DOT Shipping Name

The name that the Department of Transportation requires on shipping papers for shipping a regulated item. The required shipping names are referenced in 49 CFR 172.101. Lack of an entry may mean either that the item is not regulated or that no information was provided.

Location: Microfiche page 1 under Transportation Data and Disposal publication.

20. DOT Waste Label

The label specified in 49 CFR 172.101 particular to the National Stock Number (NSN) handled as a waste. If the label for the waste is the same as for the NSN as a hazardous material, this information is also in the data field.

Location: Disposal publication.

21. DOT Waste Shipping Name

Contains the proper shipping name for shipment of hazardous waste under 49 CFR 172 if it differs from the DOT hazardous material shipping name.

Location: Disposal publication.

22. Disposal Cycle Bypass - New Condition

An affirmative/negative/optional entry that indicates whether a material in new condition can bypass the reutilization, transfer, sales, or donation cycle. There must be an entry under this data element.

Location: Disposal publication.

23. Disposal Cycle Bypass - Used Condition

An affirmative/negative/optional entry that indicates whether a used or contaminated material can bypass the reutilization, transfer, sales, or donation cycle. There must be an entry under this data element.

Location: Disposal publication.

24. Disposal Method - Large Quantities

Summarizes and provides reference to the DoD Disposal Manual on acceptable treatment/disposal mechanisms for large quantities of the item. The Disposal Manual contains instruction sheets for each treatment/disposal method.

Location: Disposal publication.

25. Disposal Method - Small Quantities

Summarizes and provides reference to the DoD Disposal Manual on acceptable treatment/disposal mechanisms for small quantities of the item (NSN or LSN). The Disposal Manual contains instruction sheets for each treatment/disposal method. These sheets present specific technical information regarding disposal requirements.

Location: Disposal publication.

26. Disposal Restrictions

Provides technical information on the various constraints or restrictions regarding disposal or transportation of the item (NSN or LSN) as a waste.

Location: Disposal publication.

27. DRMO Disposal Assistance Service

Only a "Yes" or "No" entry indicating those items for which DRMO will provide disposal assistance. An affirmative answer in this data element in conjunction with a negative response in accountability acceptance by DRMO requires additional guidance (in the Supplemental Data element) on the type and extent of assistance which can be expected or the procedures to obtain assistance (e.g., use of a Defense Reutilization and Marketing Service waste service contract).

Location: Disposal publication.

28. Effects of Overexposure

The most common sensations that an individual exposed to the item will feel. This data element also identifies the characteristics/behavior exhibited by the individual. For example, this entry might indicate if the individual will experience nausea, dizziness, euphoria, respiratory distress, or appear drunk. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

29. EIS/EA Availability

Indicates whether an environmental impact statement (EIS) or environmental assessment (EA) has been prepared by DRMS. Additional data are provided, when appropriate, to provide details on topics covered and location.

Location: Disposal publication.

30. Emergency and First Aid Procedures

The first aid procedures (such as flush under running water for 15 minutes) that should be followed when treating an individual who was exposed to the hazardous material. It is recommended that the individual be examined by a physician as soon as possible after exposure. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

31. Emergency Telephone Number

A telephone number that can be called in emergency situations for product safety or disposal information when focal point personnel cannot be reached. You may or may not find an entry under this data element.

Location: Microfiche page 1 under General Information.

32. EPA Acute Hazardous Waste

A "Yes" or "No" entry used to indicate whether the item is declared an acute hazardous waste by 40 CFR 261.

Location: Disposal publication.

33. EPA Hazardous Waste Characteristic - New Condition

The characteristic that caused the waste in new condition to be declared hazardous (i.e., ignitable, corrosive, reactive, EP toxicity, toxic, acute toxic).

Location: Disposal publication.

34. EPA Hazardous Waste Code - New Condition

An alpha-numeric data element provides the EPA Hazardous Waste Number under 40 CFR 261, Subparts C and D, if applicable, for each new item. For each new hazardous item, this code specifies either the compound name, reactivity, or EP toxicity.

Location: Disposal publication.

35. EPA Hazardous Waste Characteristic - Used/Contaminated Condition

The characteristic that caused the waste in a used/contaminated condition to be declared hazardous (i.e., ignitable, corrosive, reactive, EP toxicity, toxic, acute toxic). This condition is based on the original intended use of the item (NSN or LSN).

Location: Disposal publication.

36. EPA Hazardous Waste Code - Used/Contaminated Condition

An alpha-numeric data element that provides the EPA Hazardous Waste Number under 40 CFR 261, Subparts C and D, if applicable, for the used/contaminated condition of the item. This code is based on the original intended use of the item (NSN or LSN) and specifies either the compound name, waste source, or hazardous characteristic (ignitable, corrosive, reactive, or EP toxicity).

Location: Disposal publication.

37. EPA Hazardous Waste Label

A "Yes" or "No" entry used to indicate when an EPA Hazardous Waste Label is required for the item.

Location: Disposal publication.

38. EPA Hazardous Waste Name - New Condition

Identifies the name of the waste from 40 CFR 261. Either a specific compound name or a characteristic may be entered.

Location: Disposal publication.

39. EPA Hazardous Waste Name - Used/Contaminated Condition

Identifies the name of each waste from 40 CFR 261. Either a specific compound name, waste source, or a characteristic may be entered.

Location: Disposal publication.

40. Evaporation Rate per Reference

A ratio of the rate at which the material evaporates when compared to either butyl acetate or diethyl ether. The reference material should be identified (e.g., 6.87 [butyl acetate]). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

41. Exemption No. (DOT Exemption Number)

The number of the exemption granted by the DOT or the number of the certificate of equivalency issued by the Department of Defense. The exemption allows a shipper of a hazardous material to package the material in a nonauthorized container. The shipper must prove to DOT that the proposed container provides levels of safety equivalent to the authorized container. (See 49 CFR 107.101.) You may or may not find an entry under this data element.

Location: Page 1 under Transportation Data.

42. Extinguishing Media

A list of acceptable fire fighting media that can be used on the item if it is burning. For example, materials such as water, water fog, foam, or dry chemical may be specified. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

43. Eye Protection

The recommended type of protective equipment that will shield the eyes from splashes, chipping dust, excessive light, and other hazards to the eyes (e.g., safety goggles, chemical goggles, full-face shield). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

44. Flash Point

The temperature at which the item releases enough vapor to ignite when a spark or flame is applied. The flash point is expressed in degrees F and degrees C. The test method used is identified by the following abbreviations:

TCC = Tag Closed Cup
PMCC = Pensky Martens Closed Cup
SCC = SetaFlash Closed Cup
TOC = Tag Open Cup
COC = Cleveland Open Cup
CC = Closed Cup (Method Not Specified)
OC = Open Cup (Method Not Specified)

You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

45. FP IND (Focal Point Indicator)

A one-letter code that identifies the service or agency responsible for entering the data into the HMIS. The codes are:

A - Army
D - Defense Logistics Agency
E - Hazardous Materials Technical Center
K - Defense Logistics Agency (Special Project)
F - Air Force
G - General Services Administration

M - Marine Corps
N - Navy
P - Defense Mapping Agency
S - National Security Agency
B - Army and Air Force Exchange Services
C - United States Coast Guard

There must be an entry in this data field.

Location: Microfiche page 1 on identification line and Disposal publication.

46. Form

If the item is radioactive, an indication if the radioactive material is in a normal form as defined in 49 CFR 173.389(d) or in special form as defined in 49 CFR 173.389(g). Special form radioactive materials are in "Massive Solid Form" or encapsulated so that if the shipping package breaks there will be little danger of contamination or radiotoxicity. Normal form materials are all those that are not special form. You may or may not find an entry under this data element.

Location: Microfiche page 1 under General Information.

47. Formula

The chemical formula for the item (e.g., KOH). Since the computer cannot print subscripts, an asterisk precedes all subscripts. For example, the formula for sulfuric acid -- H_2SO_4 -- would appear H*2SO*4. You may or may not find an entry under this data element.

Location: Microfiche page 1 under General Information.

48. FSC: (Federal Supply Code for Manufacturers)

A five-position code that identifies the manufacturer or supplier of the item. Two codes, 81348 and 81349, identify the item as "Bought According to Specification." There must be an entry under this data element.

Location: Microfiche page 1 on identification line and Disposal publication.

49. Handling and Storage Precautions

An identification of special precautions that should be taken when handling or storing the material to avoid reaction hazards. For example, if

the item is water reactive, you may be cautioned to keep it away from water or sprinkler systems. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures and Disposal publication.

50. Hazardous Decomposition Products

Hazardous materials that are produced in dangerous amounts if the material is burned, oxidized, or heated (e.g., specific heavy metals released during welding, carbon monoxides, or other poisonous gases) may be identified. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

51. Haz Polymerization Occur (Hazardous Polymerization Occur)

Indicates (by "Yes" or "No" entry) whether a reaction occurs during which polymers are formed at such a rate that large amounts of energy are released. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

52. IATA Shipping Name

The proper shipping name from Section IV of the International Air Transportation Association (IATA) Restricted Articles regulations. A blank entry may indicate that the item is not regulated by IATA.

Location: Microfiche page 1 under Transportation Data.

53. ID No. (Identification Number)

The number that is shown in column 3a of 49 CFR 172.101. This number is used to assist emergency response personnel in identifying hazardous materials. There are two types of identification numbers -- the UN Number (United Nations Number) which is assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods and the NA Number (North America Number), which is assigned by the U.S. Department of Transportation. A hazardous substance will have either a UN number or an NA number, not both. For example, the ID number for Endrin is NA2761. Carbon monoxide has an ID number of UN1016. The data element "ID No." is located under "DOT Shipping Name" and "AFR 71-4 Shipping Name." "UN No." is a data element under "IMO Shipping Name" and "UN or ID No." is referenced under "IATA Shipping Name."

Location: Microfiche page 1 under Transportation Data and Disposal publication.

54. IMDG Page No. (International Maritime Dangerous Goods)

The page number in the International Maritime Dangerous Goods Code on which information concerning the particular chemical is found.

Location: Microfiche page 1 under Transportation Data.

55. IMO Shipping Name

The proper shipping name as found in the International Maritime Organization Regulations.

Location: Microfiche page 1 under Transportation Data.

56. Item Name

The name of the product as recorded in the Federal Cataloging System.

Location: Microfiche page 1 under General Information and Disposal publication.

57. Label (AFR 71-4)

The label specified in Table 4-1 of AFR 71-4.

Location: Microfiche page 1 under Transportation Data.

58. Label (DOT Label)

The label required for the item as specified in 49 CFR 172.101. The label depends upon the package size and the hazard class for the item. For example, a liquid with a flash point below 100°F (37.8°C) is classified as a flammable liquid and must have a flammable liquid label affixed to its package.

Location: Microfiche page 1 under Transportation Data and Disposal publication.

59. Label (IATA Label)

The label specified in Section IV of the IATA regulations.

Location: Microfiche page 1 under Transportation Data.

60. LEL/PCT/ (Lower Explosive Limit)

The lowest concentration (percent by volume in air) at which the gas or vapor will burn or explode if an ignition source is present. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

61. LTD QTY - DOT (Limited Quantity Indicator)

The entry that indicates if the item qualifies for a limited quantity exemption under Department of Transportation regulations.

Location: Microfiche page 1 under Transportation Data.

62. Materials to Avoid (Incompatibility)

Identification of common materials and contaminants with which the item comes into contact that would produce a reaction releasing large amounts of energy and creating hazardous conditions. For example, if the material is an oxidizer, it may be noted that flammable materials should be avoided. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data and Disposal publication.

63. MGR (Item Manager)

The agency or service responsible for maintaining an inventory of the item in the supply system. The entry is coded and comes from the Defense Integrated Data System (DIDS) Cataloging Manual.

Location: Microfiche page 1 under Hazardous Item.

64. MAG/MILGAUSS (Magnetism in Miligauss)

Identifies a material with a magnetic field strength of 0.002 gauss or more at a distance of seven feet, or one with such a mass that it could affect aircraft instruments. Items such as loudspeakers and some electrical motors may contain magnets. You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item.

65. Manufacturer (Manufacturer's Name)

The name of the manufacturer of the product. When an item is purchased from a distributor, the manufacturer's name will appear first followed by the distributor's name in parentheses. There must be an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

66. MMAC (Material Management Aggregation Code)

A code used to associate an NSN or LSN with a particular weapons system or special program.

Location: Microfiche page 1 under Transportation Data.

67. Mode (Mode Indicator)

A one-position symbol (found in column 1 of 49 CFR 172.101) that indicates the mode of shipment under which the item is regulated. The symbols are:

- + Establishes proper shipping name and class regardless of whether or not the item meets the definition of that class (e.g., carbon monoxide).
- A Restricts application of regulations concerning material to transport by air (e.g., thiriam) unless the letter "E" appears with it and the material is a hazardous waste or substance.
- W Restricts application of regulations concerning material to transport by water (e.g., burlap cloth) unless the letter "E" appears with it and the material is a hazardous waste or substance.
- E Material is subject to regulations regardless of mode of transportation or hazard class if it is a hazardous substance under 49 CFR 171.8 (e.g., a one pound package of Endrin).

Location: Microfiche page 1 under Transportation Data.

68. National Stock Number

See NSN.

69. NET EXP WT (Net Explosive Weight)

The total weight of all active explosive Class A and B components of an explosive item. This includes primary explosives, secondary explosives, pyrotechnics, and propellants and is expressed in whole numbers (e.g., 10 kg, 50 lb). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

70. NET PROP WT AMMO (Net Propellant Weight for Ammunition)

The net weight of the propellant ingredient in an explosive. The weight is expressed in whole numbers. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

71. Net Unit WT (Net Unit Weight)

The net weight of the hazardous material in the container (e.g., 12 oz). You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item.

72. NIOSH No. (NIOSH Code)

The number assigned to the chemical in the Registry of Toxic Effects of Chemical Substances (RTECS). The RTECS is published and maintained by the National Institute for Occupational Safety and Health (NIOSH). The NIOSH number is assigned to specific chemicals and is a seven-digit number preceded by two letters (e.g., PA8050000 for methylene chloride). NIOSH numbers do not exist for nonspecific chemicals or mixtures identified by manufacturers on MSDSs. Such materials are assigned numbers by the HMIS personnel in Richmond, Virginia. The numbers corresponding to those materials are composed of two letters preceded by seven digits (e.g., 1000379AS for aliphatic petroleum solvents). You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Components and Disposal publication.

73. NRC Lic Number (NRC License Number)

The number of the license granted by the Nuclear Regulatory Commission (NRC) to the agency that manages the radioactive item. You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item.

74. NSN (National Stock Number)

A 13-digit number (e.g., 5640-00-054-7080) consisting of the Federal Supply Class (FSC) and the National Item Identification Number (NIIN). The first four digits represent the FSC; the last nine represent the NIIN. In some instances, a Local Stock Number (LSN) is in the NSN space. A LSN is recognizable by the presence of a letter in the seventh slot (e.g., 6810-00-N00-0048). There must be an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

75. Number of Entries

An entry that indicates the number of suppliers of the item (by NSN or LSN), as listed in the HMIS database.

Location: Disposal publication.

76. Other Precautions

This section identifies unique additional precautions that should be taken for the item (e.g., hazardous to livestock, fish, and wildlife may apply to items such as pesticides). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Spill and Leak Procedures.

77. Other Protective Equipment

An identification of other recommended safety equipment used to prevent worker exposure to hazardous materials or conditions. Examples include special boots, clothing, or hearing protection. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage and Fire Fighting Procedures.

78. Part Number/Trade Name

The name or number used by the manufacturer to identify the product. It may also be the catalog name or number used by the manufacturer. There must be an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

79. PCT (Percent of Hazardous Component/Ingredient)

The approximate percentage by weight or volume of each hazardous component. If the percentages are by volume, the phrase "ITEM COMPOSITION IS IN PERCENT BY VOLUME" will appear in the supplemental data section. You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Ingredients and Disposal publication.

80. PCT VOLT BY VOL (Percent Volatile by Volume)

The percentage (by volume) of a liquid or solid that evaporates at room temperature -- 68°F (20°C). For example 74.5 percent of the yellow paint

with an NSN of 8010-00-221-2775 will evaporate when stored in an open container at 68°F. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

81. PN IND (Part Number Indicator)

A one-position code used to identify individual items in a kit or items that have been improved by the manufacturer. For example, a 2-part polyurethane kit that may show a letter "A" for the polyol component and the letter "B" for the diisocyanate component. Also, the first time a manufacturer supplies an item, the Part Number Indicator data element should show the letter "A." If subsequent shipments are made under the same stock number and the formulation was changed, a "B" would appear under the data element. There must be an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

82. Proprietary (Proprietary Indicator)

An indication of whether or not the manufacturer considers the data about the product to be a trade secret (29 CFR 1910.1200). Two sets of microfiche are distributed. One set, DoD 6050.5-LR contains data that the manufacturer considers proprietary. The second set, DoD 6050.5-L deletes all of the information under the Hazardous Ingredients, Formula, and Supplemental Data data elements when the manufacturer indicates that supplied data are proprietary. There must be an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

83. Protective Gloves

The types of gloves that will protect personnel from the effects of contact with the hazardous material. Specific glove materials such as natural rubber or PVC may be noted. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage and Fire Fighting Procedures.

84. Radioactivity

The identification of any item that emits ionizing radiation with a specific activity greater than 0.002 microcurie per gram. You may or may not find an entry under this data element.

CI = Curies
MCI = Millicuries
UCI = microcuries

Location: Microfiche page 1 under Hazardous Item.

85. Related Local Stock Number

An entry that identifies a locally purchased item with the same item previously entered by a focal point. For example, an activity purchases SOLVENT ABC and assigns a local stock number that is entered into the HMIS. A second activity purchases the same solvent and enters it under a new local stock number. The first local stock number serves as the "Master" stock number; the second local stock number is entered under the related local stock number data element.

Location: Microfiche page 1 under General Information.

86. RQ (Reportable Quantity - Hazardous Substance)

This section indicates if the item meets the definition of a Hazardous Substance (49 CFR 171.8) and if the outer package quantity is large enough to be considered a Reportable Quantity (e.g., Endrin has an RQ of 1 lb or 0.454 kg).

Location: Microfiche page 1 under Transportation Data and Disposal publication.

87. SOL in H2O (Solubility in Water)

The ability or tendency of the item to dissolve or uniformly blend in distilled water at 68°F (20°C). The following table is applicable:

Negligible	-- Less than 0.1% by weight
Slight	-- 0.1-1% by weight
Moderate	-- 1-10% by weight
Appreciable	-- More than 10% by weight
Complete	-- In all proportions

You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

88. Special Fire Fighting Procedures

This indicates when water is an unsuitable agent and specifies the extinguishing procedures to be used. You may also find some instruction on

personal protective equipment to use. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

89. SP GR (Specific Gravity)

The weight of a volume of the material compared to an equal volume of water at 68°F (20°C). Water has a specific gravity of 1. Materials with a specific gravity greater than 1 will sink in water while a material with a specific gravity less than 1 will float on water. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

90. Specification

The specification or standard that describes the requirements or quality of the material being purchased. Specifications are expressed in five formats:

Military Specification	MIL-X-XXXXX
Military Standards	MIL STD-XXXXX
DoD Specifications	DoD-X-XXXXX
Federal Specification	XX-X-XX
Federal Standard	FED STD XXX

You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item.

91. Spill and Leak Control (Emergency Control)

Identifies emergency actions that should be followed to control a spill or leak of hazardous material. This section contains precautions for the avoidance of breathing vapors or gases, skin contact, and removal of sources of ignition. Special equipment needed and personal protective equipment required are often identified. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Spill and Leak Procedures and Disposal publication.

92. Stable (Stability)

An indication of whether the material is stable or unstable under expected conditions of storage, transportation, use, or misuse. A "Yes" or

"No" is entered. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

93. Storage Code (Storage Compatibility Code)

A code that categorizes the item for storage. It is used to ensure that items that may react with each other are separated by space and/or a firewall. The code indicates the type of hazard associated with the item (e.g, flammable, corrosive, oxidizer). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property data and Disposal publication.

94. Subsidiary Risk Class

The supplementary hazard class that applies to the item under the IATA Dangerous Goods codes.

Location: Microfiche page 1 under Transportation Data.

95. Subsidiary Risk Label

The supplementary hazard label that may be required for the item under the International Maritime Dangerous Goods codes.

Location: Microfiche page 1 under Transportation Data.

96. Supplemental Data

The section of the data sheet that usually identifies hazardous components over and above the five most hazardous components in that particular item. It can also contain information affecting personnel safety and accommodate overflow data from other data fields.

Location: Microfiche page 2 under Spill and Leak Procedures and Disposal publication.

97. Supplemental Disposal File Data

This data element indicates any unique data relevant to disposal of the item and provides additional explanatory data relative to other data elements.

Location: Disposal publication.

98. Technical Entry For N.O.S. Shipping Name

The proper shipping name including the parenthetical expression that contains the specific chemical name(s) required for N.O.S. ("not otherwise specified") items being shipped under international regulations. For example, an item identified as "Flammable Liquid N.O.S." that is comprised primarily of toluene would be found under this data element as "Flammable Liquid N.O.S. (toluene)."

Location: Microfiche page 1 under Transportation Data.

99. TLV for the Mixture

The TLV for the mixture is a value that takes into consideration the TLV of each component, the component's percent concentration in the mixture, and the similarity of each chemical's toxicological effects. The TLV for a mixture should be used only by professional industrial hygienists. A complete discussion of the TLV for a mixture can be found in the latest ACGIH TLV booklet.

Location: Microfiche page 2 under Health and Physical Property Data.

100. TLV (Threshold Limit Value of Individual Ingredients)

The TLV is the time weighted average concentration for a normal 8-hour workday and a 40-hour workweek to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. The listed TLV is based on the best available information established by the American Conference of Governmental Industrial Hygienists (ACGIH) at the time an item is entered into HMIS. Users are to refer to the latest edition of the ACGIH TLV booklet for current TLV information. Users should also understand that the ACGIH TLV may be lower (i.e., more conservative) than OSHA Permissible Exposure Limits (PELs). The TLV is intended to serve as a guide for use by professional industrial hygienists in the control of health hazards, rather than definitive marks between safe and dangerous concentrations. The TLV may also include short-term exposure limit concentrations for certain chemicals. The following abbreviations are used in conjunction with the TLV:

MPPCF = Millions of particles/cubic foot of air
MG/CUM = Milligrams of particulate/cubic meter of air
UG/CUM = Micrograms of particulate/cubic meter of air
PPM = Parts/million parts of air by volume
F/CUM = Fibers/cubic meter of air
F/CC = Fibers/cubic centimeter of air

You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Components.

101. Type of Cont (Type of Container)

The construction material of the container in which the material is supplied (e.g., polyethylene). You may or may not find an entry under this data element.

Location: Microfiche page 1 under Transportation Data.

102. Type of Respiratory Protection

Recommended personal protective equipment that protects the wearer from inhalation of the hazardous material. Recommended respiratory equipment may range from "dust respirator" to "supplied air." You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

103. UEL/PCT/ (Upper Explosive Limit)

The highest concentration (percent by volume in air) at which the gas or vapor will burn or explode if an ignition source is present. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

104. UI Container QTY (Unit of Issue Container Quantity)

Size of the container in which the material is supplied (e.g., 15 gl, 55 q'l, 100 lb). You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

105. UI (Unit of Issue)

The standard container in which the material is supplied (e.g., drum, bottle, kit). You may or may not find an entry under this data element.

Location: Microfiche page 1 under Hazardous Item and Disposal publication.

106. UN Class (United Nations Class)

The UN hazard class assigned to the shipping name as specified in the General Index of International Maritime Organization (IMO).

Location: Microfiche page 1 under Transportation Data.

107. UN No. (United Nations Number)

See ID No.

108. Unusual Fire/Explosion Hazards (Unusual Fire and Explosion Hazards)

Identifies uncommon fire or explosion hazards of the item and the special conditions that may produce them (e.g., there may be an indication that "the vapors are heavier than air"). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

109. Vapor Den/Air=1 (Vapor Density)

The weight of a vapor/gas compared to an equal volume of air. The figure is given for a temperature range of 60-90°F (16-32°C). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

110. Vap Press (Vapor Pressure)

Pressure of a vapor in equilibrium with its solid or liquid form. The number is expressed in millimeters of mercury at 68°F (20°C). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

111. Ventilation

The type of ventilation required that will maintain an atmosphere in which personnel can safely work for eight hours per day (e.g. "adequate ventilation to maintain levels below TLV" is often entered). You may or may not find an entry under this data element.

Location: Microfiche page 2 under Safety Storage Handling and Fire Fighting Procedures.

112. Viscosity

The internal resistance to flow for a liquid. You may or may not find an entry under this data element.

Location: Microfiche page 2 under Health and Physical Property Data.

113. Waste Elimination (Waste Disposal Method)

An acceptable method for disposal of contaminated materials that were used to control the spill or leak. This may indicate proper containerization prior to disposal. You may or may not find an entry under this data element.

Location: Disposal publication.

Appendix C

HMIS Data Elements by Major Category

Page 1 of Microfiche

HAZARDOUS ITEM

- | | |
|---------------------------------------|------------------------------------|
| o Action Code | o Magnetism |
| o Chemical Family | o Manager |
| o Chemical Name | o Manufacturer |
| o Date | o Net Unit Weight |
| o Emergency Telephone Number | o NRC License Number |
| o Exemption Number | o NSN |
| o Focal Point Indicator | o Part Number Indicator |
| o Form | o Part Number/Trade Name |
| o Formula | o Proprietary Indicator |
| o FSCM | o Radioactivity |
| o Item Name | o Related Local Stock Numbers |
| o Limited Quantity -
DOT Indicator | o Specification |
| o Item Name | o Type of Container |
| | o Unit of Issue |
| | o Unit of Issue Container Quantity |

HAZARDOUS COMPONENTS

- | | |
|---|-----------|
| o Chemical Name | o Percent |
| o NIOSH No. (National
Institute for Safety
and Health Number) | o TLV |

TRANSPORTATION DATA

- | | |
|---|--|
| o AFR 71-4 Shipping Name | o MMAC Indicator |
| o Compatibility Group | o Mode Indicator |
| o DOT Shipping Name | o Identification Number |
| o Hazard Class for Each Shipping Mode | o Reported Quantity Indicator |
| o IATA Shipping Name | o Subsidiary Risk Class |
| o IMDG Page Number | o Subsidiary Risk Label |
| o IMO Shipping Name | o Technical Entry for N.O.S. Shipping Name |
| o Labels Required by Each Shipping mode | o United Nations Class |
| | o United Nations Number |

ADDITIONAL DATA

Page 2 of Microfiche

HEALTH AND PHYSICAL PROPERTIES DATA

- | | |
|------------------------------------|---------------------------------|
| o Appearance and Odor | o Lower Explosive Limit |
| o Autoignition Temperature | o Materials to Avoid |
| o Boiling Point | o Net Explosive Weight |
| o Coast Guard Ammunition Code | o Net Propellant Weight |
| o Conditions to Avoid | o Percent Volatile by Volume |
| o Effects of Overexposure | o Solubility in Water |
| o Evaporation Rate per Reference | o Stable |
| o Flash Point | o Storage Code |
| o Hazardous Decomposition Products | o Threshold Limit Value Mixture |
| o Hazardous Polymerization Occur | o Upper Explosive Limit |
| o Conditions to Avoid | o Vapor Density/Air = 1 |
| | o Vapor Pressure/MM Hg at 70°F |
| | o Viscosity |

SAFETY STORAGE HANDLING AND FIRE FIGHTING PROCEDURES

- o Emergency First Aid Procedures
- o Extinguishing Media
- o Eye Protection
- o Handling/Storage Precautions
- o Other Protective Equipment
- o Protective Gloves
- o Special Fire Fighting Procedures
- o Type of Respiratory Protection
- o Unusual Fire/Explosion Hazards
- o Ventilation

SPILL AND LEAK PROCEDURES

- o Other Precautions
- o Spill and Leak Control
- o Supplemental Data
- o Waste Elimination

DISPOSAL PUBLICATION

Data Elements by Major Category

Page 1 of Microfiche

ITEM IDENTIFICATION

- | | |
|-------------------------|------------------------------------|
| o Action Code | o NSN |
| o Date | o Part Number Indicator |
| o Entries | o Part Number/Trade Name |
| o Focal Point Indicator | o Proprietary Indicator |
| o FSCM | o Unit of Issue |
| o Item Name | o Unit of Issue Container Quantity |
| o Manufacturer | |

DRMS DISPOSAL CYCLE INFORMATION

- | | |
|---|--------------------|
| o Accountability Accepted
by DRMO | o EIS/EA Available |
| o DRMO Disposal Assistance | o Reutilization |
| o Disposal Cycle Bypass -
New Condition | o Sales |
| o Disposal Cycle Bypass -
Used Condition | o Transfer |

SAFETY PROCEDURES

- | | |
|--------------------------------|---------------------|
| o Handling Storage Precautions | o Storage Code |
| o Materials to Avoid | o Supplemental Data |
| o Spill/Leak Control | |

EPA HAZARDOUS WASTE CLASSIFICATIONS -
NEW AND USED CONDITION

- | | |
|---|-------------------------------|
| o Acute - New | o Hazardous Waste Code - New |
| o Acute - Used | o Hazardous Waste Code - Used |
| o Hazardous Waste
Characteristics - New | o Hazardous Waste Name - New |
| o Hazardous Waste
Characteristics - Used | o Hazardous Waste Name - Used |

Page 2 of Microfiche

HAZARDOUS COMPONENTS

- | | |
|-----------------|-----------|
| o Chemical Name | o Percent |
| o NIOSH No. | |

DISPOSAL GUIDELINES

- | | |
|--|-------------------------|
| o Disposal Methods - Small
Quantities | o Disposal Restrictions |
| o Disposal Methods - Large
Quantities | |

HAZARDOUS WASTE MANIFEST DATA

- | | |
|----------------------------|---------------------------------------|
| o DOT Hazard Class | o United Nations/North America Number |
| o DOT Label | o Reportable Quantity Indicator |
| o DOT Proper Shipping Name | o Waste Shipping Name |
| o EPA Waste Label | |

Appendix D

Some Acronyms and Abbreviations

ACGIH - American Conference of Governmental Industrial Hygienists
AFR - Air Force Regulation
ANSI - American National Standards Institute
AR - Army Regulation
ASTM - American Society for Testing and Materials
B/L - Bill of Lading
CAB - Civil Aeronautics Board
CFR - Code of Federal Regulations
CMA - Chemical Manufacturers Association
COC - Cleveland Open Cup; a flash point test method
DGSC - Defense General Supply Center (Richmond)
DLA - Defense Logistics Agency
DLAM - Defense Logistics Agency Manual
DLAR - Defense Logistics Agency Regulation
DoD - Department of Defense
DOT - Department of Transportation
DRMO - Defense Reutilization and Marketing Office
DRMR - Defense Reutilization and Marketing Region
DRMS - Defense Reutilization and Marketing Service
EIA - Environmental Impact Assessment
EIS - Environmental Impact Statement
EPA - Environmental Protection Agency
FAA - Federal Aviation Administration
FSC - Federal Supply Classification
FSCM - Federal Supply Code for Manufacturers
GBL - Government Bill of Lading
GSA - General Services Administration
IATA - International Air Transport Association
IDLH - Immediately Dangerous to Life and Health
IMO - International Maritime Organization (replaces IMCO)

LC - Lethal Concentration
 LCL - Less-than-Carload
 LD - Lethal Dose
 LEL - Lower Explosive Limit
 LSN - Local Stock Number (also known as activity control number [ACN])
 LTL - Less-than-Truckload
 M³ - Cubic Meter; or Stere
 mppcf - Million Particles per Cubic Foot
 MSDS - Material Safety Data Sheet
 MW - Multi-wall Container
 NA - Not Applicable
 NIIN - National Item Identification Number
 NIOSH - National Institute for Occupational Safety & Health
 NOS - Not Otherwise Specified
 NRC - Nuclear Regulatory Commission
 NSN - National Stock Number
 ORM - Other Regulated Materials
 OSHA - Occupational Safety and Health Administration
 PCB - Polychlorinated Biphenyls
 PEL - Permissible Exposure Limit
 PIIN - Procurement Instrument Identification Number
 PMCC - Pensky-Martens Closed Cup; a flash point test method
 P/N - Part Number
 ppb - Parts per billion
 ppm - Parts per million
 psi - Pounds per square inch
 PT - Palletized Unit Load
 QPL - Qualified Product List
 RADCOM - Radioactive Commodities
 RAM - Radioactive Material
 RQ - Reportable Quantity
 RTECS - Registry of Toxic Effects of Chemical Substances
 SETA - Setaflash Closed Tester; a flash point test method

TCC - Tag (Tagliabue) Closed Cup; a flash point test method
 TLV - Threshold Limit Value
 UEL - Upper Explosive Limit
 UI - Unit of Issue
 UN - United Nations Number
 UNC - United Nations Class
 USCG - United States Coast Guard

Units of Issue

AM - Ampoule	DR - Drum	PR - Pair
AT - Assortment	DZ - Dozen	PT - Pint
AY - Assembly	EA - Each	PZ - Packet
BA - Ball	FT - Foot	QT - Quart
BD - Bundle	GL - Gallon	RA - Ration
BE - Bale	GP - Group	RL - Reel
BF - Board Foot	GR - Gross	RM - Ream
BG - Bag	HD - Hundred	RO - Roll
BK - Book	HK - Hank	SD - Skid
BL - Barrel	IN - Inch	SE - Set
BO - Bolt	JR - Jar	SF - Square Foot
BR - Bar	KT - Kit	SH - Sheet
BT - Bottle	LB - Pound	SK - Skein
BX - Box	LG - Length	SL - Spool
CA - Cartridge	LI - Liter	SO - Shot
CB - Carboy	MC - Thousand	SP - Strip
CD - Cubic Yard	Cubic Feet	SX - Stick
CE - Cone	ME - Meal	SY - Square Yard
CF - Cubic Foot	MR - Meter	TN - Ton
CK - Cake	MX - Thousand	TO - Troy Ounce
CL - Coil	OT - Outfit	TU - Tube
CN - Can	OZ - Ounce	VI - Vial
CO - Container	PD - Pad	YD - Yard
CY - Cylinder	PG - Package	
CZ - Cubic Meter	PM - Plate	

Appendix E

A Complete HMIS Microfiche Record

NSM	6850 00 125-7368	PSCH	62156	MR	CX	D	PP IND	A	PN IND	A	PART NUMBER/TRADE NAME	SCRUB CLEAN	ACT CD	A	DATE	85132	PAGE NR	1
PROPRIETARY	*** HAZARDOUS ITEM ***																	
NO	A. JOHANSON PRODUCTS INC																	
CLEANING COMPOUND	*** GENERAL INFORMATION ***																	
EMERGENCY TELE NO (212) 555-1718																		
SPECIFICATION MIL C 43616																		
MAG/MIL GAUSS NA																		
LTD QTY DOT																		
EXEMPTION NO																		
NA																		
RELATED LOCAL STOCK NO																		
NA																		
HAZARDOUS COMPONENTS																		
*** HAZARDOUS COMPONENTS ***																		
ALKALI																		
FORMULA																		
NA																		
TLV																		
2MG CUM																		
2MG CUM																		
UNKNOWN																		
UNKNOWN																		
25PPM																		
*** TRANSPORTATION DATA ***																		
DOT SHIPPING NAME: *COMPOUND, CLEANING, LIQUID																		
CLASS: *CORROSIVE MATERIAL																		
LABEL: *CORROSIVE																		
MODE: *N/A																		
ID NO: NA1760																		
RQ: *NO																		
FOR INDIVIDUAL AIRLINE CARRIER EXCEPTIONS REFER TO TARIFF 6-D/CIRCULAR 6-D																		
IMO SHIPPING NAME: CORROSIVE LIQUIDS, N.O.S.																		
UN CLASS: 8																		
UN NO: 1760																		
SUBSIDIARY RISK LABEL: NA																		
ATA SHIPPING NAME: CORROSIVE LIQUIDS, N.O.S.																		
SUBSIDIARY RISK CLASS: NA																		
CLASS OR DIV: CORROSIVE																		
APR 71-4 SHIPPING NAME: *COMPOUND, CLEANING, LIQUID																		
LABEL: *CORROSIVE																		
ID NO: NA 1760																		
UN OR ID NO: 1759																		
HMAC: AB																		
*** TECHNICAL ENTRY FOR N.O.S. SHIPPING NAME ***																		
POTASSIUM HYDROXIDE																		
*** ADDITIONAL DATA ***																		
*** MANUFACTURER VERIFIED THAT SHIPPING NAMES GIVEN ABOVE ARE APPLICABLE ***																		

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BOLLING POINT VAP DEN/AIR=1/ SOL IN H2O FLASH POINT VAP PRESS/MM HG/70 F TLU-MIXTURE STORAGE CODE
*250F *1.1 *COMPLETE *NONE *25 *250PM *B2

APPEARANCE AND ODOR LEL/PCT/ UEL/PCT/ EP GR PCT VOLT BY VOL EVAP RATE PER REFERENCE
*CLEAR, COLORLESS LIQUID, AMMONIA ODOR *1.2156 *20 *0.2 BUTYL ACETATE

EFFECTS OF OVEREXPOSURE NET PROP WT. AMMO NET EXL WT
*IRRITATES SKIN, NASAL PASSAGES, CAUSES BURNS TO SKIN *N/A *N/A

CONDITIONS TO AVOID MATERIALS TO AVOID
*TEMPERATURES ABOVE 150F *ACIDS, OXIDIZERS, FLAMMABLES

HAZ POLYMERIZATION OCCUR AUTO IGN TEMP VISCOSITY CG AMMO CD
*NO *N/A *NONE *N/A

HAZARDOUS DECOMPOSITION PRODUCTS
*N A

EXTINGUISHING MEDIA SPECIAL FIRE FIGHTING PROCEDURES
*WATER, APRON DIOXIDE, DRY CHEMICAL FOAM *USE SELF CONTAINED BREATHING APPARATUS

UNUSUAL FIRE / EXPLOSION HAZARDS PROTECTIVE GLOVES
*NONE *RUBBER

EMERGENCY FIRST AID PROCEDURES
*EYES AND SKIN - FLUSH WITH WATER FOR 15 MINUTES. INGESTION - DO NOT INDUCE VOMITING, CALL DOCTOR IMMEDIATELY. INHALATION - REMOVE TO FRESH AIR
CALL DOCTOR

TYPE OF RESPIRATORY PROTECTION VENTILATION
*SELF CONTAINED BREATHING APPARATUS *LOCAL RECOMMENDED TO MAINTAIN LEVELS BELOW TLV

EYE PROTECTION OTHER PROTECTIVE EQUIPMENT HANDLING / STORAGE PRECAUTIONS
*CHEMICAL GOGGLES *ROOTS, APRON *STORE IN COOL DRY PLACE

SPILL AND LEAK CONTROL
*NEUTRALIZE WITH 5 PERCENT ACETIC ACID, FLUSH WITH WATER, ABSORB IF POSSIBLE

WASTE ELIMINATION
*PLACE ABSORBED MATERIAL IN DOT CONTAINERS SUITABLE FOR SHIPPING CORROSIVE MATERIALS TO DISPOSAL AREA

OTHER PRECAUTIONS SUPPLEMENTAL DATA
*AVOID CONTACT WITH SKIN AND EYES *BALANCE OF PRODUCT IS SOAP AND WATER

A Complete Disposal File Microfiche Record

*** DISPOSAL FILE BASIC PUBLICATION ***

NSN	FSCN	ENTRIES	FP IND	FN IND	PART NUMBER/TRADE NAME	ACT CD	DATE	PAGE NO.
5610-00-699-7617	32613	1	E	A	TAR COAT	A	06132	1
PROPRIETARY	MANUFACTURER				ITEM NAME		UI CONTAINER QTY	
NO	LITTLE JOHN PETROLEUM				ASPHALT ROOF COATING		5GAL	

 DRMS DISPOSAL CYCLE INFORMATION

DRMS DISPOSAL CYCLE BYPASS

NEW CONDITION	USED CONDITION
YES	NO
YES	NO
YES	NO

ACCOUNTABILITY ACCEPTED BY DRMO: YES
 DRMO DISPOSAL ASSISTANCE: YES
 E19/EA AVAILABLE: NO

 SAFETY PROCEDURES

HANDLING STORAGE PRECAUTIONS

STORE AWAY FROM STRONG OXIDIZERS

SPILL/LEAK CONTROL

COVER WITH SAND/ABSORBANT: OVERPACK

MATERIALS TO AVOID

OXIDIZERS

STORAGE CODE

F2

SUPPLEMENTAL DATA

NONE

 EPA HAZARDOUS WASTE CLASSIFICATIONS - NEW AND USED CONDITION

HW CODE (NEW)	HW NAME (NEW)	HW CHARACTERISTICS (NEW)	ACUTE (NEW)
0001	FLAMMABLE LIQUID	IGNITIBLE	NO
(USED)	(USED)	(USED)	(USED)
0001	WASTE FLAMMABLE LIQUID	IGNITIBLE	NO

MSN	ACT CD	DATE	PAGE NO
5610-00-699-7617	A	86132	2
<p>***** ***HAZARDOUS COMPONENTS*** *****</p>			
NIOSH NO	CHEMICAL NAME		
1001292 PD	PETROLEUM DISTILLATES		
	PCT 99%		
<p>***** ***DISPOSAL GUIDELINES*** *****</p>			
<p>*** DISPOSAL METHODS - SMALL QUANTITIES ***</p> <p>DISPOSE IN ACCORDANCE WITH GUIDELINE INCINERATION OF LAB PACKS</p> <p>DISPOSE IN ACCORDANCE WITH GUIDELINE SECURE CHEMICAL LANDFILL: LAB PACKS</p>			
<p>*** DISPOSAL METHODS - LARGE QUANTITIES ***</p> <p>DISPOSE IN ACCORDANCE WITH GUIDELINE INCINERATION OF LAB PACKS</p> <p>DISPOSE IN ACCORDANCE WITH GUIDELINE SECURE CHEMICAL LANDFILL: LAB PACKS</p>			
<p>***** ***DISPOSAL RESTRICTIONS*** *****</p>			
NONE			
<p>***** ***HAZARDOUS WASTE MANIFEST DATA*** *****</p>			
DOT PROPER SHIPPING NAME: FLAMMABLE LIQUID N.O.S.			
DOT HAZARD CLASS: FLAMMABLE LIQUID DOT LABEL: FLAMMABLE UN/NA NO: 1993			
WASTE SHIPPING NAME: WASTE FLAMMABLE LIQUID N.O.S.			
EPA WASTE LABEL: YES			