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AD NUMBER: ADB954958

LIMITATION CHANGES

TO:

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Distribution authorized to DoD only; Administrative/Operational Use; 1 Sep 1923. Other requests shall be referred to Commander, Chemical Systems Laboratory, Attn: DRDAR-CLJ-R, Aberdeen Proving Ground, MD 21010.

AUTHORITY

ECBC memo dtd 12 Dec 2017



DEPARTMENT OF THE ARMY
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
EDGEWOOD CHEMICAL BIOLOGICAL CENTER
5183 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MD 21010-5424

REPLY TO
ATTENTION OF

RDCB-DSR-S

DEC 12 2017

MEMORANDUM THRU Director, Edgewood Chemical Biological Center, (RDCB-D/ *ELM*
Dr. Eric L. Moore), 5183 Blackhawk Road, Aberdeen Proving Ground, MD 21010-5424

FOR Defense Technical Information Center (DTIC), 8725 John J. Kingman Road, Ft. Belvoir,
VA 22060

SUBJECT: Internal Request for Change in Distribution

1. This action is in response to an Edgewood Chemical Biological Center (ECBC) internal request for a Change in Distribution for the below listed documents, which are currently authorized for release to DoD Components Only:

a. ADB954958 - Report No. EAMRD 17; Project No., A3.2-3; Toxicity of Chlorine on Dogs- 10 minute exposure; Authors: G. C. Armstrong, W. A. Eldridge, J. A. Baldwin, dated 1 September 1923.

b. ADB958296 – Report No. EACD 328; Project No. C-4; Important Constants of Fourteen Common Chemical Warfare Agents; Author: C. H. Beebe; dated 1 December 1924.

c. ADB955268 – Report No. EATR 351; Project No. A 10.4; Chlorine. Median Lethal Concentration for Mice; Authors: S. D. Silver, F. P. McGrath; dated 9 May 1942.

d. ADB955266 – Report No. EATR 373; Project No. A 10.4; Chlorine. Median Lethal Concentration for Mice; Authors: S. D. Silver, F. P. McGrath, R. L. Ferguson; dated 17 July 1942.

2. The above listed documents have been reviewed by subject matter experts within ECBC and have been deemed suitable for the change in distribution to read "Approved for Public Release; Distribution Unlimited".

3. The point of contact is the undersigned at (410) 436-1999, ronald.l.stafford.civ@mail.mil.

for Adam Staff
RONALD L. STAFFORD
Security Manager

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AD B 954958

WAR DEPARTMENT.
CHEMICAL WARFARE SERVICE
EDGEWOOD ARSENAL, EDGEWOOD, MD.
COLONEL C. W. EXTON, COMMANDING.

Lieut. Col. E. B. Vedder, M.C.
Chief, Medical Research Division.

1st Lieut. H. A. Kuhn, C.W.S.
Chief, Dept. of Toxicology.

REPORT NO. E.A.M.R.D. 17, Copy 1.
PROJECT NO. A3.2-3

SUBJECT: Toxicity of Chlorine on
Dogs 10 Minute Exposure.

BY: G.C. Armstrong,
W.A. Eldridge,
J.A. Baldwin.

DATE: September 1, 1923.

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DECLASSIFIED-EOB Directive No. 5200.9

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TOXICITY OF CHLORINE ON DOGS
10 MINUTE EXPOSURE.

by

G. C. Armstrong

W. L. Eldridge

J. A. Baldwin

Distribution limited to DOD only. Other requests for this document must be referred to
Commander, Chemical Systems Laboratory, Attn: DRDAR-CLJ-R, Aberdeen Proving Ground,
MD 21010

September 1, 1923.



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ABSTRACT

The minimum lethal concentration is defined as the lowest concentration of gas in a gas-air mixture which produces a majority of deaths within forty-eight hours.

TOXICITY:

<u>LENGTH OF EXPOSURE</u>	<u>MINIMUM LETHAL CONC. IN MGM/L</u>	<u>NUMBER OF DOGS USED</u>
10 min	5.58	34

TOXICITY OF CHLORINE ON DOGS

INTRODUCTION.

The object of this work was to determine the minimum lethal concentration for dogs by inhalation, exposed to a gas air mixture for a 10 minute exposure.

MATERIAL.

Material was furnished by the Chemical Division of Edgewood Arsenal, Md.

DESCRIPTION OF APPARATUS.

May be found in report on phosgene by E.A. MRD. #15.

METHOD of ANALYSIS.

At each exposure a 5 liter sample of the gas was collected in potassium iodide solution and titrated with standard sodium thio sulphate solution using starch as an indicator, thus giving the actual concentration of chlorine in the gas-air mixture to which the animal was exposed.

DATA.

10 minute chlorine

<u>DOG #</u>	<u>CONCENTRATION</u>	<u>DATE</u>
1290	4.33	R
1292	4.40	R
1291	4.47	R
1289	4.66	R
1302	4.96	R
1300	5.06	70 hrs
1301	5.17	R
1303	5.32	R
1320	5.43	R
1316	5.50	R
1297	5.58	16 hrs
1298	5.58	16 hrs
1317	5.76	36 hrs
1284	5.77	12 hrs
1283	6.10	22 hrs
1182	6.16	2 hrs
1097	6.35	18 hrs
1286	6.40	20 hrs
1285	6.50	36 hrs
1099	6.57	R
1180	6.83	R
1100	6.83	R
1130	6.94	10 hrs
1138	6.94	11 hrs
1139	7.31	24 hrs
1098	7.31	R
1181	7.4	3 hrs
1128	7.68	8 hrs
1091	7.87	7 hrs
1094	8.42	R
1096	9.21	7 hrs
1129	9.21	7 hrs
1126	9.32	49 hrs
1093	9.95	2 hrs

In this table "R" indicates that the dog did not die within ten days and was considered recovered. The number of hours give the length of time elapsing between time of gassing and time of death.

The lethal concentration for an exposure of ten minutes was placed at 5.58 milligrams per liter. This concentration was taken because 17 out of 22 dogs gassed at higher concentrations died and because all dogs gassed at lower concentrations survived over 48 hours.

Submitted by:

Supervised by:

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Approved by:

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Chief, Control Section.

Edward B. Vedder
Edward B. Vedder,
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Chief, Medical Research Division.

TOXICITY OF CHLORINE ON
DOGS. 10 MINUTE EXPOSURE.

work begun: May 21, 1923
work completed: August 24, 1923.