

WAR DEPARTMENT  
CORPS OF ENGINEERS  
OFFICE OF THE DISTRICT ENGINEER  
MANHATTAN DISTRICT  
OAK RIDGE, TENNESSEE

ADDRESS REPLY TO:  
DISTRICT ENGINEER  
MANHATTAN DISTRICT  
CORPS OF ENGINEERS  
P. O. BOX "E"  
OAK RIDGE, TENNESSEE

REFER TO FILE NO. EHMJ-1

7117.420

RHTG # 100,021  
BOX # 603

7 November 1946.

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Subject: Limitations of M5-11-7 Combat Mask Used in Production Operations.

MEMORANDUM to Medical Division, Manhattan District, Oak Ridge, Tennessee.

1. Specific information with reference to the degree of protection afforded by the M5-11-7 gas mask against respiratory hazards incidental to production activities encountered at K-25 has been requested by the Carbide and Carbon Chemicals Corporation. It is stated that this "information is essential in determining rules to be followed in the use of the Combat Mask." Specifically, the information requested is as follows:

REPOSITORY OAK RIDGE OPERATIONS  
RHTG CLASSIFIED  
COLLECTION DESIGN 1944-1947  
RMA, B-204 E114-4 VAULT  
BOX NO. RMA-259  
FOLDER

- 1) Uranium hexafluoride and its hydrolysis products, uranium oxyfluoride and hydrogen fluoride:
  - a) What methods are available for determining the degree of saturation of canisters with hexafluoride or its hydrolysis products?
  - b) For what lengths of time will the mask give protection in air containing hexafluoride and its hydrolysis products in concentrations of one, ten, and one hundred and one thousand milligrams per cubic meter?
  - c) What effect will the presence of extremely dry air have on the above?
- 2) Fluorine:
  - a) What is the highest concentration of fluorine in air against which the mask will protect for approximately five minutes and how does this concentration relate to one maximum concentration to which a person could be exposed for an equal time without suffering skin burns?
  - b) For what lengths of time will the mask give protection in air containing fluorine to the extent of three, ten, fifty, one hundred and two hundred parts per million?

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This document is classified as Restricted Data as defined in the Atomic Energy Act of 1946 and is controlled under the provisions of Executive Order 12958 and the Atomic Energy Act of 1954.

Classification Changed to UNCLASSIFIED  
By Authority of DAR-1  
Classification Authority  
By M. R. THESEN, ANALYSIS CORP. 1/11/94  
Date

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THIS DOCUMENT CONTAINS  
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Subject: Limitations of M5-11-7 Combat Mask Used in Production Operations.

3) Hydrogen fluoride:

- a) For what lengths of time will the mask give protection in atmospheres containing ten, one hundred, two hundred, five hundred, and one thousand parts per million of hydrogen fluoride?

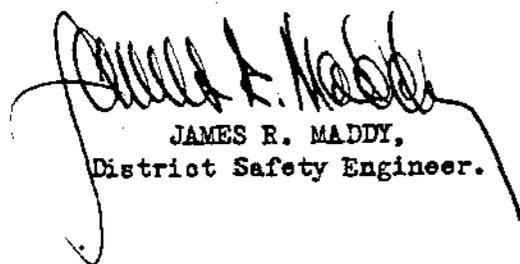
4) Fluorine analogs:

- a) What degree of protection will the mask give against the fluorine analogs of phosgene that are generated by the pyrolysis of fluorocarbons in welding or burning operations?

It is also requested that in the event this data is not available, the procedures for canister testing be supplied to assist the contractor's laboratories in making the required tests.

2. It is suggested that the present practice and recommendations with reference to the use of gas masks for personal protection in plant operations be reviewed and restated, insofar as the subject gases are concerned. It is possible that improvements may have been made during the past year which will make available gas masks better adapted to industrial practice than is the M5-11-7 Combat Mask, which was designed for combat service.

3. Since the present supply of masks on hand is low and the contractor will soon find it necessary to order, it is suggested that arrangements be made to secure the desired information at an early date.

  
JAMES R. MADDY,  
District Safety Engineer.

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CORPS OF ENGINEERS  
P. O. BOX "E"  
OAK RIDGE, TENNESSEE

REFER TO FILE NO. EIDM-1

710 420

7 November 1946.

RHTG # 100,020  
BOX # 603

Series 2

Subject: Limitations of M5-11-7 Combat Mask Used in Production Operations.

MEMORANDUM to Medical Division, Manhattan District, Oak Ridge, Tennessee.

1. Specific information with reference to the degree of protection afforded by the M5-11-7 gas mask against respiratory hazards incidental to production activities encountered at K-25 has been requested by the Carbide and Carbon Chemicals Corporation. It is stated that this "information is essential in determining rules to be followed in the use of the Combat Mask." Specifically, the information requested is as follows:

1) Uranium hexafluoride and its hydrolysis products, uranium oxyfluoride and hydrogen fluoride:

a) What methods are available for determining the degree of saturation of canisters with hexafluoride or its hydrolysis products?

b) For what lengths of time will the mask give protection in air containing hexafluoride and its hydrolysis products in concentrations of one, ten, and one hundred and one thousand milligrams per cubic meter?

c) What effect will the presence of extremely dry air have on the above?

2) Fluorine:

a) What is the highest concentration of fluorine in air against which the mask will protect for approximately five minutes and how does this concentration relate to one maximum concentration to which a person could be exposed for an equal time without suffering skin burns?

b) For what lengths of time will the mask give protection in air containing fluorine to the extent of three, ten, fifty, one hundred and two hundred parts per million?

REPOSITORY Oak Ridge Operations

COLLECTION RHTG Classified  
1944-1994

Records Holding Area, Bldg 2714-H Vault

BOX No. RHA-209

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This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure subject to Administrative and Criminal Sanctions.

Classification Changed to UNCLASSIFIED

By Authority of DAR

Classification Authority

By M.R. THESEN ANALYSIS CORP 11/94

Date

J.M.M.  
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