



Halocarbon

PRODUCTS CORPORATION

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8EHQ-94-12970

INIT 04/12/94

CERTIFIED MAIL

REC'D
OFFICE OF POLLUTION
PREVENTION AND TOXICS
94 APR 12 AM 8:51

April 7, 1994

Document Processing Center (TS-790)
Attn: Section 8(e) Coordinator
Office of Toxic Substances
U.S. Environmental Protection Agency
401 "M" Street, S.W.
Washington, D.C. 20460



88940000212

ORIGINAL

SECTION 8(e) NOTICE

Re: 1,1,3,3-Tetrabromo-1,2,2,3-tetrafluoropropane (99%) (CAS 36567-29-0) [Report Name: QC-81]

Dear Sir/Madame:

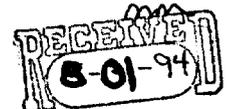
The following notice is submitted to you in accordance with paragraph V, F in the Agreement between Halocarbon Products Corporation (the Company) and the EPA, "Consent Agreement re Docket No. TSCA-90-H-18" with respect to Section 8(e). Since the report shows a substantial risk to animals and the studied substance is used in industry it may be inferred that it poses a substantial risk to health or the environment.

I am the Vice President and Technical Director of the Company. My address is at Company headquarters:

Halocarbon Products Corporation
887 Kinderkamack Road
River Edge, New Jersey 07611
Phone: 201-262-8899

The address of the Company manufacturing site is:

Halocarbon Products Corporation
1100 Dittman Court
North Augusta, South Carolina 29841
Phone: 803-278-3500



13 pgs.

The appended report for the chemical substance 1,1,3,3-Tetrabromo-1,2,2,3-tetrafluoropropane (99%) (CAS 36567-29-0) was prepared by:

Hazelton Laboratories America, Inc.
1330-B Piccard Drive
Rockville, Maryland 20850

We are not aware of any additional information or supporting technical data.

In summary, the data show:

Four of the rats exposed to 2.92 mg/L for 6 hours died during the observation period. Gross necropsies showed possible compound effects in the lungs, liver, kidneys, spleen, adrenals, intestines and testes.

If the information contained herein need not be reported by reason of any of the provisions of the law, regulation or Article VII of EPA Statement of Interpretation and Enforcement Policy; Notification of Substantial Risk dated March 16, 1978 we trust you will inform us of that fact and will treat this notice as a "for your information only" document.

Very truly yours,



Louis L. Ferstandig, Ph.D
Vice President & Technical Director

LLF:bc

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SUMMARY AND CONCLUSION

Rats were exposed for six hours to QC-81 at a concentration consisting of 15% of the concentration at saturation. A total of 10.3 grams of QC-81 was vaporized during the six-hour exposure, while the chamber airflow was 9.8 liters/minute. Therefore, the nominal concentration was 2.92 milligrams of QC-81/liter of air.

Four rats died during the 14-day observation period. The remaining rats were in poor health and did not appear to be recuperating. Gross necropsy findings showed possible compound effects in the lungs, liver, kidneys, spleen, adrenals, intestines, and testes.

Submitted by Neil A. Littlefield
NEIL A. LITTLEFIELD, Ph.D.
Staff Scientist
Inhalation Division

Supervision: Mitterer
Experimental: Nemirow

ljt

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ACUTE INHALATION EXPOSURE - RATS

QC-81

FINAL REPORT

Submitted to

Halocarbon Products Corporation
Hackensack, New Jersey

January 8, 1969

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HAZLETON LABORATORIES, INC.

TRW LIFE SCIENCES CENTER

Sponsor: Halocarbon Products Corporation

Date: January 8, 1969

Material: QC-81

Lot No:

Subject: Acute Inhalation Exposure - Rats
FINAL REPORT

OBJECTIVE

The objective of this study was to evaluate the effects of a six-hour inhalation exposure of rats to the vapors of QC-81 at 15% saturation.

MATERIAL

One small bottle of QC-81 was received from Halocarbon Products Corp. on November 6, 1968. It was a clear colorless liquid with a distinctive odor. For the purposes of this study, it was considered to be free from impurities and used as received.

METHOD

Ten male rats were exposed to the vapors of QC-81 at 15% saturation for six hours. In addition, five male rats were exposed to filtered room air under experimental conditions for six hours and served as a control. The mean body weight of the rats was 192 grams. The exposures were conducted in a 22-liter plexiglas chamber.

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The experimental atmosphere was generated by bubbling nitrogen through the test material in a 100-milliliter round bottom boiling flask. The flask was immersed in a constant temperature water bath maintained at 60° C. The nitrogen, saturated with compound vapor, was then passed through a glass wool trap and a coarse fritted glass disc to remove all aerosol droplets. The temperature of the vapor immediately prior to entry into the chamber was monitored with a thermometer in the inlet tube. The vapor was maintained at ambient temperature.

Chamber airflow was maintained by a positive pressure rotary pump located on the exhaust side of the chamber and monitored with a rotameter. The desired concentration was attained by proper proportioning of compound vapor flow and the chamber airflow.

The nominal concentration of QC-81 in the experimental atmosphere was calculated from the ratio of the weight of compound vaporized to the total chamber airflow (the volume of vapor laden nitrogen plus the volume of make-up air) per unit time.

The effluent chamber atmosphere was passed through a 500-milliliter gas-collecting bottle containing cooled benzene. This sample was sent to Halocarbon Products Corp. for analysis.

The rats were individually housed in a stainless steel mesh cage during exposure. They were observed at frequent intervals for death and signs of irritation. After exposure, the surviving animals were removed from the chamber, group housed, and observed for 14 days for latent toxic effects. Gross necropsies

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were performed on all animals. The trachea, lungs, liver, and kidney, were removed, examined for gross lesions and representative sections preserved in 10% buffered formalin for possible future histopathological examination.

RESULTS

Control Exposure

No signs of irritation were seen in the animals, either during exposure or during the 14-day observation period. Gross necropsy findings (Table No. 1) included red to brown areas of discoloration on the lung surface.

QC-81 Exposure

Nitrogen was bubbled through the test material at the rate of 1.47 liters/minute. Total chamber airflow was 9.8 liters/minute, making the chamber atmosphere of QC-81 at 15% saturation. A total of 10.3 grams of compound were vaporized into the experimental atmosphere during the exposure, resulting in a nominal concentration of 2.92 milligrams/liter of air.

After 20 minutes of exposure, the animals were quiet and were resting on the cage bottom. The eyes were partially closed and glassy in some animals, and completely closed in others. After 30 minutes of exposure the ears were hyperemic. Occasional scratching and preening were observed.

The respiratory movements in all animals were deeper and more pronounced than normal. Respirations were more rapid than normal after 50 minutes of exposure.

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Intermittent, irregular, jerking body movements mastication-like movements, and irregular deep breathing, were noted in one rat after 86 minutes of exposure. Intermittent, irregular, jerking body movements were seen in seven of the animals between 95 to 155 minutes of exposure. The respiration in most of the rats appeared rapid and shallow after 90 minutes of exposure. After 195 minutes of exposure, the respiration appeared deeper, the jerking movements were no longer noted, and the animals were quiet. They reacted only slightly to external stimuli such as tapping on the sides of the chamber. A slight ocular discharge was noted after 255 minutes of exposure. The breathing patterns became deeper as the exposure progressed and continued for the remainder of the six-hour exposure.

All animals appeared completely normal one hour after the termination of exposure. Rapid, deep, irregular respiratory patterns were observed in all of the animals on Day 1 postexposure. Several rats' eyes remained half closed. By Day 6 postexposure, several animals appeared thin and hunchbacked and were less active than the other animals. Two animals succumbed (one on Day 7 and one on Day 8 postexposure). The respiratory pattern in the survivors were short, rapid, and irregular for the duration of the 14-day observation period. In addition, several rats remained thin, and hunchbacked and displayed piloerection for the duration of the observation period. Two rats, one of which was cannibalized, were found dead in their cage on the morning of Day 14.

Gross necropsy findings (Table No. 1) included dark red, mottled green and purple, areas in both lungs, large firm yellow green nodules embedded in the lungs, red to brown areas on the lung surface, and dark red liver, kidneys, and adrenals.

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SUMMARY AND CONCLUSION

Rats were exposed for six hours to QC-81 at a concentration consisting of 15% of the concentration at saturation. A total of 10.3 grams of QC-81 was vaporized during the six-hour exposure, while the chamber airflow was 9.8 liters/minute. Therefore, the nominal concentration was 2.92 milligrams of QC-81/liter of air.

Four rats died during the 14-day observation period. The remaining rats were in poor health and did not appear to be recuperating. Gross necropsy findings showed possible compound effects in the lungs, liver, kidneys, spleen, adrenals, intestines, and testes.

Submitted by



NEIL A. LITTLEFIELD, Ph.D.
Staff Scientist
Inhalation Division

Supervision: Mitterer
Experimental: Nemirow

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Table No. 1 - Continued

	CONTROL					QC-81									
	1	2	3	4	5	1*	2*	3**	4*	5	6	7	8	9	10
GROSS ABNORMALITIES															
Thoracic Cavity:															
Contains thick, jelly-like, red material															
Liver:															
Red to dark purple to black in color															
Kidneys:															
Dark red to black throughout															
Interiors appeared black															
Spleen:															
Light red to black															
Smaller than normal															
Adrenals:															
Dark pink to maroon in color															
Dark purple evenly spaced spots over surface															
Stomach:															
Thick, red to brown fluid contents															
Intestines:															
Thick, yellow-tan to red-brown fluid contents															
Cecum distended with gas															

* Succumbed during 14-day observation period.

** Cannibalized, therefore, no gross necropsy findings.

Table No. 1 - Continued

	CONTROL					QC-81									
	1	2	3	4	5	1*	2*	3**	4*	5	6	7	8	9	10
GROSS ABNORMALITIES															
Testes:															
Raised into abdominal cavity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purple in color	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brain:															
Dark red, jelly-like material on surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Succumbed during 14-day observation period.
 ** Cannibalized, therefore, no gross necropsy findings.



Halocarbon

PRODUCTS CORPORATION

CONTAINS NO CBI

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April 7, 1994

Document Processing Center (TS-790)
Attn: Section 8(e) Coordinator
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

REC'D
OFFICE OF POLLUTION
PREVENTION AND TOXICS
04 APR 19 01 08:52

Re: Consent Order regarding Halocarbon Products Corporation Docket No. TSCA 90-H-18

Dear Sir/Madame:

This submission is made pursuant to the Consent Order referenced above.

Transmitted herewith are reports on the chemicals listed below:

- * Trifluoroacetyl chloride (CAS 354-32-5)
- ** 2-Chloro-1,1,1,4,4,4-hexafluorobutene-2 (CAS 400-44-2)
- ** Asym dibromodifluoroethylene (CAS 430-85-3)
- ** 1,1,1,2-Tetrabromo-2,2,-difluoroethane (CAS 3470-67-5)
- ** 1,3,4,4-Tetrachloro-1,2,3,4-tetrafluoro-1-butene
- ** C₄F₆Br₄ (CAS 375-24-6)
- ** C₄F₄Br₄Cl₂
- ** CFCl₂(CF₂CFBr)_nCl where n is approximately 2 to 5
- ** CFCIBr(CF₂CFBr)_nBr where n is approximately 5 to 10
- ** CFCIBr(CF₂CFBr)_nBr where n is approximately 4 to 8
- ** CFCIBr(CF₂CFBr)_nBr where n is approximately 2 to 5
- ** CFCl₂(CF₂CFBr)_nCl where n is approximately 3 to 6
- ** CFCl₂(CF₂CFBr)_nCl where n is approximately 4 to 8
- ** 1,1,1,4,4,4-Hexafluoro-2-butanone
- ** 2-Hydroxy-1,1,1,4,4,4-hexafluorobutane
- * 1,1,3,3-Tetrabromo-1,2,2,3-tetrafluoropropane (99%) (CAS 36567-29-0)
- ** Mixture of 2,3-dichloro-1,1,1,4,4,4-hexafluoro-2-butene (99.94%) (CAS 374-07-2) & 2-chloro-1,1,1,4,4,4-hexafluoro-2-butene (0.06%) (CAS 400-44-2)
- ** 1,1-Dibromo-1-chloro-2,2,2-trifluoroethane (CAS 754-17-6)
- ** Cl(CF₂CFCl)₂Cl (CAS 423-38-1)

Reports on chemicals designated by a single asterisk (*) are submitted under paragraph V.F.b of said Consent Order.

Reports on chemicals designated by double asterisks (**) are submitted under paragraph V.F.c on a For Your Information Only basis.

I hereby certify on behalf of Halocarbon Products Corporation that the audit required by said Consent Order has been completed and that to the best of my information and belief the reports listed above are the only reports or studies required or questionably required to be submitted to EPA pursuant to said Consent Order.

Very truly yours,
Halocarbon Products Corporation

By Louis L. Ferstándig
Louis L. Ferstándig, Ph.D
Vice President & Technical Director

LLF:bc
Enclosures