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Document Title		TOXICITY OF O-SEC-BUTYLPHENOL, DINITRO-O-SEC-BUTYLPHENOL, AND AMMONIUM SALT OF DINITRO-O-SEC-BUTYLPHENOL WITH COVER LETTER DATED 05/10/94 (SANITIZED)	
Chemical Category		O-SEC-BUTYLPHENOL (89-72-5)	

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May 10, 1994

The Dow Chemical Company
Midland, Michigan 48674

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Environmental Protection Agency
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**ATTENTION: 8(D) HEALTH AND SAFETY REPORTING RULE (REPORTING) -
(NOTIFICATION) DOCKET OPTS-82041**

Dear Sir or Madam:

As required by 40 CFR 716 as amended, we herewith submit copies of reports which meet the requirements of the referenced rule as Health and Safety Studies. As noted in the statement enclosed with the reports, some contain Confidential Business Information.

The reports are separated into two categories for your convenience:

Package 1: Reports which contain no Confidential Business Information and reports from which Confidential Business Information has been deleted (i.e., the "Public File copies").

Package 2: Reports which contain no Confidential Business Information and reports in which Dow Confidential Business Information is identified (i.e., the "EPA copies").

The Dow report identification number (e.g., D0006067) has been placed on the first page of each report submitted. Please refer to this number in any correspondence regarding this submission. Some of these reports may be voluntarily submitted because we are either not sure of Dow's status as a manufacture or processor of the listed chemical; or we are not sure whether the report is a Health/Safety Study as defined in the rule.

An index to the copies of studies submitted is enclosed. It lists the Dow identification number and title of each report submitted. No studies of these chemicals are in progress, nor are we aware of any studies of which we lack copies.

Very truly yours,

Robert L. Hagerman
Research Associate
Environmental & Health Regulatory Affairs
517/636-6855

Enclosures

cja

INDEX TO HEALTH AND SAFETY STUDIES,
FOR SUBMISSION OF
94/05/10 (EFFECTIVE DATE OF RULE)
DOW ITEM

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000059881	HYDRAZINE, PHENYL-, MONOHYDROCHLORIDE	TOXICITY OF PHENYLHYDRAZINE AND PHENYLHYDRAZINE HYDROCHLORIDE
000074964	ETHANE, BROMO	VAPOR TOXICITY OF ETHYL BROMIDE AND HEALTH HAZARDS ASSOCIATED WITH ITS HANDLING AND USE
000075150	CARBON DISULFIDE	IN VITRO MICROBIOLOGICAL MUTAGENICITY STUDIES OF DOW CHEMICAL COMPANY COMPOUNDS
000077781	DIMETHYL SULFATE	COMMENTS UPON PROPOSED SAFETY ORDER #1
000084662	1,2-BENZENEDICARBOXYLIC ACID, DIETHYL ESTER	RESULTS OF SKIN ABSORPTION TESTS ON CARBON DISULFIDE
000089725	O-SEC-BUTYLPHENOL	THE SKIN IRRITATING ACTION OF DIMETHYLSULFATE
000099718	P-SEC BUTYL PHENOL	RESULTS OF SKIN IRRITATION TESTS ON DIETHYL PHTHALATE
000100005	P-NITROCHLOROBENZENE	TOXICOLOGY AND HYGIENE O-SEC-BUTYLPHENOL
000100447	BENZYL CHLORIDE	THE TOXIC PROPERTIES OF O-SEC-BUTYLPHENOL COMPARED WITH PHENOL AND P-TERT-BUTYLPHENOL AND THE HAZARDS PRESENTED BY...
000100630	PHENYLHYDRAZINE	TOXICOLOGICAL PROPERTIES AND INDUSTRIAL HANDLING HAZARDS OF SEC-BUTYL PHENOL CONTAINING 25% P-SEC BUTYL PHENOL AND 75%
000108907	BENZENE, CHLORO-	AMMONIUM SALT OF DINITRO-O-SEC-BUTYL PHENOL AND 75% TOXICITY OF O-SEC-BUTYL PHENOL, DINITRO-O-SEC-BUTYL PHENOL, AND THE AMMONIUM SALT OF DINITRO-O-SEC-BUTYL PHENOL
000109999	TETRAHYDROFURAN	SKIN IRRITATION OF SEC-BUTYLPHENOL
000122394	DIPHENYLAMINE	TOXICOLOGICAL PROPERTIES AND INDUSTRIAL HANDLING HAZARDS OF SEC-BUTYL PHENOL CONTAINING 25% P-SEC BUTYL PHENOL AND 75%
		TOXICITY OF O-SEC-BUTYL PHENOL, DINITRO-O-SEC-BUTYL PHENOL, AND THE AMMONIUM SALT OF DINITRO-O-SEC-BUTYL PHENOL
		THE TOXICITY OF P-NITROCHLOROBENZENE
		ACUTE INHALATION TOXICITY OF VAPORS OF VINYL BENZYL CHLORIDE AND BENZYL CHLORIDE
		RESULTS OF EYE IRRITATION TESTS ON PHENYLHYDRAZINE
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		TOXICITY OF PHENYLHYDRAZINE AND PHENYLHYDRAZINE HYDROCHLORIDE
		THE CONCENTRATION OF UREA IN THE BLOOD OF MEN WORKING IN THE CHLOROBENZENE PLANT
		TOXICITY OF MONOCHLOROBENZENE
		TOXICOLOGY AND HYGIENE MONOCHLOROBENZENE
		RESULTS OF RANGE FINDING TOXICOLOGICAL TESTS ON TETRAHYDROFURAN
		RESULTS OF 90-DAY DIETARY FEEDING OF DIPHENYLAMINE TO RATS
		TOXICITY OF MATERIALS FROM THE DIPHENYLAMINE PROCESS
		SURVEY OF LABORATORY AND LITERATURE DATA ON THE TOXICITY OF DIPHENYL-AMINE

INDEX TO REVISIONS OF THE RULES
FOR SUBMISSION OF
94/05/10 (EFFECTIVE DATE OF RULE)
DOW ITEM

1994
05

DOCUMENT TITLE

DOW NUMBER	CHEMICAL NAME	DOW ITEM	DOCUMENT TITLE
000150765	P-METHOXYPHENOL	D0000049	TOXICITY OF MATERIALS FROM THE DIPHENYLAMINE PROCESS
000540590	1,2-DICHLOROETHYLENE	D0000037	RESULTS OF RANGE FINDING TOXICOLOGICAL TESTS ON P-METHOXY PHENOL (HYDRO-QUINONE METHYL ETHER)
000768525	N-ISOPROPYLANILINE	D0000044	RESULTS OF RANGE FINDING TOXICOLOGICAL TESTS ON 1,2-DICHLOROETHYLENE, MIXED ISOMERS
025013154	BENZENE, ETHENYLMETHYL-	D0000036	THE TOXICITY OF 1,2-DICHLOROETHYLENE AS DETERMINED BY REPEATED EXPOSURES ON LABORATORY ANIMALS
		D0000066	TOXICOLOGICAL PROPERTIES AND INDUSTRIAL HANDLING HAZARDS OF N-ISOPROPYLANILINE
		D0000040	SUMMARY OF RESULTS OF TOXICOLOGICAL STUDIES ON VINYL TOLUENE
		D0000041	RESULTS OF TOXICOLOGICAL TESTS ON VINYL TOLUENE
		D0000065	ANALYSIS OF VINYL TOLUENE IN THE AQUATIC ENVIRONMENT

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D0006035

THE DOW CHEMICAL COMPANY

File Financial Info
Chg.
Rec'd 12-14-43
Fin'd 2-28-44
Work by Financial Information

Subject TOXICITY OF o-SEC-BUTYL PHENOL, DINITRO-o-SEC-BUTYL PHENOL, AND THE AMMONIUM SALT OF DINITRO-o-SEC-BUTYL PHENOL

Financial Information

To Semi-Plant Lab.
(J. W. Britton,
R. C. Dasser.

Check

Personal Information

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4-14-44
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SUMMARY AND CONCLUSIONS

(1) ortho-Sec-butyl phenol has a low acute oral toxicity, is slowly absorbed through the skin, and is markedly irritating to the skin, causing denaturation of the exposed areas quite rapidly.

The chief hazard associated with the handling of this material is local tissue destruction resulting directly from contact. Particular care must be taken to prevent skin and eye contact. In case contact occurs, the exposed area must immediately be flooded with water and thoroughly cleansed with soap and water. Failure to do this immediately will be likely to result in a serious burn. In this respect phenol and o-sec-butyl phenol are very similar, but with respect to absorption through the skin, phenol is the more hazardous as it is more toxic and more readily absorbed.

(2) Dinitro-o-sec-butyl phenol has a high acute oral toxicity, is readily absorbed through the intact skin, is not particularly irritating to the skin, and is a metabolic stimulant.

86740008205

Biochemical Research Laboratory
THE DOW CHEMICAL COMPANY

Ena
File Financial Information
Chg.
Rec'd 12-14-43
Fin'd 2-24-44
Work By

Subject

THE TOXICITY OF ORTHO-SEC-BUTYL PHENOL.

Personal Information

Personal Information

To File Report

Check

Rept. By

Material

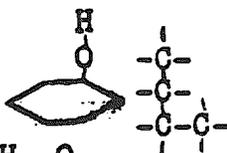
Personal Information

Name--o-sec. butyl phenol

Financial Information

Formula--

Structural--



Empirical-- $C_{10}H_{14}O$

M. P.--13-14°C.

Source--267 Bldg. R. C. Dossier.

Reference--Drum #7 Proj. 1091 12-13-43

Stability--Stable.

Constituents--Chiefly ortho, but there may be some of the para isomer present. Sample represents plant production material.

Solubility--water-- <0.1%

oils--Sol.

95% Ethanol--Sol.

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THE DOW CHEMICAL COMPANY

Problem

What are the handling hazards relative to the manufacture and use of this material?

Acute Oral Toxicity

Aliquots of an olive oil solution of o-sec. butyl phenol were emulsified in 5-10% gum arabic solution and fed to cavies by means of a stomach tube. The material was found to be low in acute oral toxicity, the 100% survival dose being 0.6 g/kg and the 100% lethal dose being 2.4 g/kg. These figures

indicate that the ingestion of toxic quantities of this material would not be apt to occur.

Acute Toxic Absorption

Absorption of o-sec. butyl phenol through the intact skin can take place. Tests in which aliquotes of an alcoholic solution were applied to the clipped bellies of cavies restrained on animal boards showed the 100% survival dose to be 1.5 g/kg and the 100% lethal dose to be 3.0 g/kg. While it does not seem likely that lethal quantities of the material would be absorbed except under severe conditions, the possibility that such absorption could take place is quite real.

Skin Irritation

O-sec. butyl phenol is a markedly corrosive material when in contact with the skin. Tests conducted on rabbits showed that when the undiluted material was in contact with the skin for a period of over one minute, denaturation of the exposed skin resulted.

Repeated exposure of the rabbits skin to a 10% solution of the o-sec. butyl phenol in butyl carbitol acetate resulted in only a slight scaliness indicating that the irritating properties of the material may be greatly reduced by dilution. Such exposure caused a slight weight loss in the test animal indicating that some absorption through the skin was taking place.

Summary and Conclusions

Ortho-sec. butyl phenol is low in acute oral toxicity, is slowly absorbed through the skin, and is markedly irritating to the skin rapidly causing denaturation of exposed areas. Dilute solutions do not seem to be particularly irritating.

We believe that the chief hazard associated with the handling of o-sec. butyl phenol lies in its corrosiveness to the skin. Particular care must be taken to prevent skin and eye contact. If contact occurs, the exposed area should be immediately flushed with water or a serious burn will be apt to occur.

We have no information concerning the chronic toxicity of this material.

BIOCHEMICAL RESEARCH LABORATORY

Financial Information

Material: (o-sec. butyl phenol)

ACUTE ORAL TOXICITY

Financial Information

Animals Cavies

Dose (gm/kilo)	Number of animals that died	Number of animals that survived
0.1	0	1
0.2	0	1
0.4	0	1
0.6	0	5
1.0	1	1
2.0	1	1
2.4	5	0
3.0	4	0

BIOCHEMICAL RESEARCH LABORATORY

Financial Information

Material: (o-sec. butyl phenol)

ABSORPTION
ACUTE ~~ORAL~~ TOXICITY

Financial Information

Animals Cavies

Dose (gm/kilo)	Number of animals that died	Number of animals that survived
0.2	0	1
0.6	0	1
1.0	0	1
1.5	0	5
2.0	1	1
2.4	1	1
3.0	5	0

THE DOW CHEMICAL COMPANY
MIDLAND MICHIGAN

DATA SHEET OF PROPERTIES, HEALTH HAZARDS, AND PRECAUTIONS
FOR SAFE HANDLING OF MATERIALS

MOLECULAR FORMULA $C_{10}H_{14}O$		NAME o-Sec. Butyl Phenol		Financial Information
MOLECULAR WEIGHT 150.22	INDUSTRIAL HYGIENE STANDARD	SYNONYMS Phenol: o-sec. butyl		

STRUCTURAL FORMULA - OR COMPOSITION

Crude from catalyst run

O-sec. butyl phenol 75% Process Information

p-sec-butyl phenol 25%

PHYSICAL AND CHEMICAL PROPERTIES	BOILING POINT °C	EXPLOSIVE LIMITS' (% VOL. IN AIR)	FLASH POINT °F	IGNITION TEMP. °C	MELTING POINT °C	VAPOR PRESS. mmHg. 25°C.	
	CORROSIVENESS (To Common Metals)			PHYSICAL STATE Liquid	COLOR Brown		
	CHEMICAL REACTIVITY				ODOR (Include Concentration in Air) None		
	STABILITY (To pH Change, Heat, Light)						

TYPE OF CONTACT		CLASSIFICATION OF TOXIC PROPERTIES	
TOXIC PROPERTIES	EYE	<input checked="" type="checkbox"/> MAY CAUSE NO RESPONSE OR NO MORE THAN VERY SLIGHT TO SLIGHT TRANSITORY PAIN AND/OR SLIGHT TRANSIENT CORNEAL INJURY AND/OR IRRITATION OF THE EYELIDS.	<input type="checkbox"/> MAY CAUSE SOME PERMANENT LOSS OF VISION (THIS INCLUDES DAMAGE TO CORNEA OR INTERNAL INJURY WHICH IS INCOMPLETELY HEALED IN ONE WEEK.)
		<input type="checkbox"/> MAY CAUSE SUFFICIENT INJURY TO THE EYE TO RESULT IN LOSS OF TIME FROM WORK. (THIS INCLUDES DAMAGE TO THE CORNEA WHICH HEALS OR NEARLY HEALS IN A WEEK AND/OR CONSIDERABLE CONJUNCTIVAL IRRITATION WITH EDEMA.)	<input type="checkbox"/> VAPOR EXPOSURE MAY CAUSE SEVERE PAIN, LACRYMATION OR SERIOUS INJURY TO THE EYES.
TOXIC PROPERTIES	SKIN	<input type="checkbox"/> SINGLE PROLONGED EXPOSURE (HOURS) CAUSES NO EFFECT. SEVERAL REPEATED PROLONGED EXPOSURES MAY OR MAY NOT CAUSE THE DEVELOPMENT OF SOME SLIGHT IRRITATION.	<input type="checkbox"/> SINGLE SHORT EXPOSURE (MINUTES) MAY CAUSE CONSIDERABLE IRRITATION AND/OR SINGLE PROLONGED OR FREQUENTLY REPEATED SHORT EXPOSURES CAUSE A BURN AND/OR MAY CAUSE SYSTEMIC INJURY, EVEN DEATH.
		<input checked="" type="checkbox"/> SINGLE PROLONGED EXPOSURE MAY CAUSE SOME REDDENING OF THE SKIN. REPEATED PROLONGED CONTACTS MAY CAUSE APPRECIABLE IRRITATION, POSSIBLY A MILD BURN AND/OR MAY CAUSE APPRECIABLE SYSTEMIC INJURY DUE TO ABSORPTION.	<input type="checkbox"/> AN EXPOSURE RAPIDLY CAUSES SEVERE BURNS AND/OR SERIOUS SYSTEMIC INJURY, EVEN DEATH.
TOXIC PROPERTIES	DUST OR MIST	<input type="checkbox"/> NO SYSTEMIC INJURY EXPECTED. NO IRRITATION TO NOSE AND THROAT IN DUSTY OR MISTY ATMOSPHERES.	<input type="checkbox"/> DUSTY OR MISTY ATMOSPHERE PAINFUL TO NOSE AND THROAT (INTOLERABLE TO MOST PEOPLE) AND/OR EXPOSURE MAY CAUSE SERIOUS SYSTEMIC INJURY, EVEN DEATH.
		<input type="checkbox"/> THROAT AND NOSE IRRITATION IN A DUSTY OR MISTY ATMOSPHERE IS PAINFUL BUT NOT INTOLERABLE AND/OR PROLONGED OR REPEATED EXPOSURES MAY CAUSE SYSTEMIC INJURY.	<input type="checkbox"/> SHORT EXPOSURE (MINUTES) MAY CAUSE DEATH OR SERIOUS SYSTEMIC INJURY.
TOXIC PROPERTIES	VAPOR <small>Tested at room temperature unless otherwise indicated.</small>	<input type="checkbox"/> EXPOSURES DO NOT CAUSE ANY EFFECTS OTHER THAN SOME VERY SLIGHT IRRITATION OR PAIN TO THE EYES OR RESPIRATORY PASSAGES AT THE MOST.	<input type="checkbox"/> EXPOSURES MAY CAUSE EXTREME DROWSINESS, AND/OR SERIOUS SYSTEMIC INJURY, AND/OR MAY CAUSE INTOLERABLE IRRITATION TO THE RESPIRATORY PASSAGES.
		<input checked="" type="checkbox"/> SINGLE EXPOSURES EXCEEDING 1/2 HOUR, OR FREQUENTLY REPEATED EXPOSURES OF SHORTER DURATION, MAY CAUSE SLIGHT ANESTHESIA AND/OR SLIGHT SYSTEMIC INJURY, AND/OR CAUSE APPRECIABLE, BUT NOT INTOLERABLE, IRRITATION OF RESPIRATORY PASSAGES. (1)	<input type="checkbox"/> SHORT EXPOSURES MAY CAUSE UNCONCIOUSNESS, AND/OR SERIOUS SYSTEMIC INJURY, INCLUDING DEATH.
TOXIC PROPERTIES	INGESTION	<input type="checkbox"/> AMOUNTS WHICH MAY BE SWALLOWED INCIDENTAL TO INDUSTRIAL HANDLING WILL NOT CAUSE INJURY. HOWEVER, IF SUBSTANTIAL QUANTITIES SHOULD BE SWALLOWED, MORE OR LESS SERIOUS EFFECTS MAY OCCUR.	<input type="checkbox"/> AMOUNTS WHICH MAY BE SWALLOWED INCIDENTAL TO INDUSTRIAL HANDLING AND USE MAY CAUSE SERIOUS INJURY.
		<input checked="" type="checkbox"/> AMOUNTS WHICH MAY BE SWALLOWED INCIDENTAL TO INDUSTRIAL HANDLING WILL NOT CAUSE INJURY. HOWEVER, IF SUBSTANTIAL QUANTITIES SHOULD BE SWALLOWED, MORE OR LESS SERIOUS EFFECTS MAY OCCUR.	<input type="checkbox"/> AMOUNTS WHICH MAY BE SWALLOWED INCIDENTAL TO INDUSTRIAL HANDLING AND USE MAY CAUSE SERIOUS INJURY.

COMMENTS

(1) Rats experienced tremors 18 minutes after being placed in chamber.

Process Information

This material was made by new process using catalyst. Process may be replacement for present process using Ferric chloride and HCl a catalyst. as

O-sec. butyl phenol

DEGREES OF EXPOSURE RELATED TO TYPES OF OPERATION		PRECAUTIONS (SEE CODE BELOW)				
		EYES	SKIN	INHALATION*		INGESTION
				DUST OR MIST	VAPOR	
I NO CONTACT	CHARACTERIZED BY REMOTE OPERATION WITH EQUIPMENT ISOLATED FROM THE WORK AREA. THE PERSONS ENTERING ISOLATED AREAS WILL REQUIRE THE PERSONAL PROTECTION OUTLINED FOR IV BELOW.	A	A		A	A
II MINOR CONTACT	CHARACTERIZED BY CLOSED SYSTEMS WITH EQUIPMENT VENTED OUTSIDE THE WORK AREA; INSTRUMENT CONTROL; MECHANICAL HANDLING OF MATERIALS IN BULK. EXAMPLES ARE: CONTINUOUS REACTORS, STILLS AND FILTERS; ENCLOSED CONVEYORS; VENTILATED PACKAGING.	A	A		A	A
III OCCASIONAL DAILY CONTACT	CHARACTERIZED BY MANUAL HANDLING OF MATERIALS IN PACKAGES SUCH AS BAGS, DRUMS AND FIBERPAKS. VENTILATION MAY BE PROVIDED FOR SPECIFIC JOBS. MANY BATCH OPERATIONS FALL INTO THIS CATEGORY.	B	B		C	A
IV GROSS CONTACT LIKELY	CHARACTERIZED BY HAND OPERATION. EXAMPLES ARE: EMERGENCY REPAIRS, CLEANING EQUIPMENT, CLEANING FILTERS, TAKING CARE OF SPILLS, PACKAGING VOLATILE OR DUSTY MATERIALS WITHOUT VENTILATION, WHEELING AND TRAY DRYING.	B	C		C	A

EYE CONTACT	A NO EYE PROTECTION NEEDED.	D USE CHEMICAL WORKERS GOGGLES.	
	B USE SAFETY GLASSES WITHOUT SIDE SHIELDS.	E USE GAS TIGHT GOGGLES OR A FULL FACE GAS MASK.	
	C USE SAFETY GLASSES WITH SIDE SHIELDS.		
SKIN** CONTACT	A A BATH AND CLEAN CLOTHES ONCE PER WEEK ALONG WITH THE USUAL WASHING AT MEALTIMES SHOULD BE ADEQUATE PRECAUTIONS. GROSSLY CONTAMINATED CLOTHING AND SHOES MUST BE REMOVED NOT LATER THAN THE END OF THE WORK PERIOD AND MUST BE THOROUGHLY CLEANED BEFORE RE-USE.	D CLOTHING SHOULD BE CHANGED AND SKIN WASHED PROMPTLY UPON ANY DETECTABLE CONTACT. EACH USE WILL REQUIRE SPECIAL CONSIDERATION TO DETERMINE SUITABLE PROTECTIVE DEVICES AND STANDARDS OF PERSONAL CLEANLINESS.	
	B REQUIRE SHOWER AT THE END OF THE WORK PERIOD AND CLEAN CLOTHING FROM THE SKIN OUT AT THE START OF EACH WORK DAY.	E IMPERVIOUS CLOTHING SUCH AS RUBBER BOOTS, RUBBER APRONS, AND RUBBER GLOVES WILL BE REQUIRED. SPECIFIC ITEMS WILL BE DICTATED AS REQUIRED BY CIRCUMSTANCE.	
	C		
INHALATION	DUST OR MIST	A NO RESPIRATORY PROTECTION. NO PROTECTION REQUIRED FOR EXPOSURE OF THIRTY MIN. DURATION OR LESS TO OBVIOUSLY DUSTY ATMOSPHERES. EXPOSURES OF LONGER DURATION WILL REQUIRE THE USE OF A DUST RESPIRATOR BEARING THE APPROVAL OF THE U.S. BUREAU OF MINES FOR THE USE WITH TOXIC DUSTS.	D ANY EXPOSURE TO OBVIOUSLY DUSTY ATMOSPHERES WILL REQUIRE A DUST RESPIRATOR BEARING THE APPROVAL OF THE U.S. BUREAU OF MINES FOR USE WITH TOXIC DUSTS. E ANY EXPOSURE TO DUSTY ATMOSPHERES WILL REQUIRE THE USE OF AN AIR-LINE RESPIRATOR, BLOWER MASK, OR CHEMOX MASK.
	VAPOR	A NO PRECAUTIONS NECESSARY. B NO PRECAUTIONS NECESSARY FOR SINGLE EXPOSURES OF LESS THAN 1/2 HOUR. LONGER SINGLE EXPOSURES, OR FREQUENTLY REPEATED EXPOSURES WILL REQUIRE A GAS MASK OR RESPIRATOR EQUIPPED WITH APPROPRIATE CANISTER.	C NO PRECAUTIONS NECESSARY FOR SINGLE EXPOSURES OF NO MORE THAN TEN MINUTES. LONGER EXPOSURES EITHER SINGLE OR REPEATED, WILL REQUIRE GAS MASK OR RESPIRATOR EQUIPPED WITH APPROPRIATE CANISTER. D GAS MASK WITH APPROPRIATE CANISTER REQUIRED AT ALL TIMES. E EVACUATE AREA AT ONCE AND ENTER ONLY WITH AIRLINE RESPIRATOR, BLOWER MASK OR CHEMOX MASK.
INGESTION	A NO UNUSUAL PROCEDURES REQUIRED.	E FOOD AND TOBACCO SHOULD NOT BE PRESENT IN THE WORK AREA. HANDS AND FACE SHOULD BE WASHED BEFORE SMOKING AND EATING.	

COMMENTS

**GOOD PRACTICE REQUIRES THAT GROSS AMOUNTS OF ANY CHEMICAL BE REMOVED FROM THE SKIN AS SOON AS IS PRACTICAL

*SUITABLE GAS MASK CANISTER

Organic Vapor

SIGNED _____

CHECKED _____

DATE

2/6/68

DATE

5/27/68



CERTIFICATE OF AUTHENTICITY

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