



**ORIGINAL**  
**UNITED STATES MARINE CORPS**  
MARINE CORPS AIR STATION  
BEAUFORT, SOUTH CAROLINA 29904-5001

ASO 6260.3D  
MED  
14 JAN 2003

AIR STATION ORDER 6260.3D

From: Commanding Officer  
To: Distribution List

Subj: HEALTH HAZARDS OF HALOGENATED HYDROCARBONS

Ref: (a) MCO 5100.8

Encl: (1) Table of Common Industrial Halogenated Hydrocarbons

1. Purpose. To provide information concerning the hazardous properties of halogenated hydrocarbons and promulgate general precautions necessary for the health of personnel using these materials, in accordance with reference (a).

2. Cancellation. ASO 6260.3C.

3. Information

a. Definition. Halogenated hydrocarbons are compounds of carbon and hydrogen, in which one or more of the hydrogen atoms have been replaced by the halogens, chlorine, bromine, fluorine or iodine. They are normally used in gaseous or liquid form as solvents, refrigerants, fumigants, insecticides, paint removers, dry cleaning fluids, propellants in pressurized containers, or as components of formulations used in industrial type operations listed in enclosure (1).

b. Health Hazards. All halogenated hydrocarbons are hazardous to health in some degree if inhaled, swallowed or absorbed through the skin. Individual material hazards are shown in enclosure (1).

c. Emergency Procedures. In case of fire in areas containing these solvents and their vapors there is the danger of greatly increased solvent vaporization as well as toxic decomposition of the products stated above. Personnel entering the area should be equipped with self-contained breathing apparatus. Personnel overcome by these materials should be removed promptly from exposure and thoroughly decontaminated to ensure all surface contamination is removed, which can be accomplished by disrobing and water flushing.

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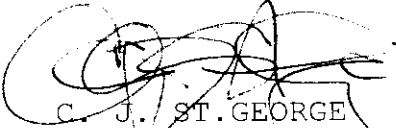
First aid procedures, including artificial respiration or CPR if appropriate, should be commenced immediately. Oxygen should be administered if available and the patient should be kept warm. Medical attention must be obtained without delay, calling the Medical Officer's attention to the material involved. Precautions must be taken by the rescue personnel to protect themselves from exposure.

d. Precautions. All users of halogenated hydrocarbons should be thoroughly trained in the proper use and precautions set forth in the specific Material Safety Data Sheet (MSDS) for each product. Provisions set forth in reference (a) must also be followed regarding personal protective equipment (PPE) and respirators. Further questions may be directed to the Naval Hospital Industrial Hygienist.

e. Welding. Welding operations produce high amounts of ultraviolet light, which may react with halogenated hydrocarbons forming toxic by-products such as hydrogen chloride gas, phosgene gas and chlorine gas. All precautions must be taken to ensure welding operations are not performed in the vicinity of halogenated hydrocarbons, and ensure all surfaces to be welded are cleaned and free of chemical contaminants.

4. Action. Commanding Officers, Department Heads and Officers in Charge shall advise the Medical Officer of any halogenated hydrocarbon material held by Air Station or tenant activities and of all processes utilizing these materials. Enclosure (1) contains a listing of common industrial halogenated hydrocarbons.

5. Concurrence. The Commanding Officer, Marine Aircraft Group 31 concurs with this Order insofar as it pertains to Fleet Marine Force units stationed aboard Marine Corps Air Station Beaufort.

  
C. J. ST. GEORGE  
Executive Officer

DISTRIBUTION: A2

ASO 6260.3C  
15 NOV 02

TABLE OF COMMON INDUSTRIAL HALOGENATED HYDROCARBONS

COMMON NAME	PHYSICAL STATE AT ORDINARY TEMPERATURES	INDUSTRIAL USES	TOXICITY		EXPOSURE ROUTE
			ACUTE (SHORT TERM, HIGH EXP)	CHRONIC (LONG TERM, LOW EXP)	
Carbon tetrachloride	Liquid	Solvent (use prohibited in Navy)	Dizziness, nausea, possible liver and kidney damage	Significant liver damage, ACGIH Suspect Carcinogen	Inhalation, Skin
Chlorinated diphenyls	Liquid	Lubricants, plastic insulation for electrical wire	Acute liver damage (vapors) acneform dermatitis	Acneform dermatitis	Skin
Chlorinated naphthalenes	Solid (Waxy)	Lubricants, plastic insulation for electrical wire	Severe injury to liver characterized as acute yellow atrophy (vapors)	Liver damage, skin absorption (vapors) acneform lesions	Skin, Inhalation
Chlorinated paints (Epichlorohydrin)	Liquid	Chlorinated rubber paints	Intensely irritating, CNS depressant, kidney damage	Eye, skin irritation burns and blistering (sensitization)	
Chlorobenzene	Liquid	Solvent	Anesthetic effect, central nervous system depressant	Liver, kidney, and lung damage	Skin, Inhalation
Ortho-dichlorobenzene	Liquid	Solvent, fumigant insecticide	Definite organic injury involving liver and kidneys	No apparent injury <u>below</u> the TLV	Skin, Inhalation
Para-dichlorobenzene	Solid	Insecticide, disinfectant	CNS depressant, nose and eye irritation, weakness, dizziness, vomiting, loss of weight, lung, liver kidney injury	Eye and nose irritation but no apparent injury	Skin, Inhalation
Ethylene dibromide (dibromoethane)	Liquid	Fumigant, gasoline antiknock compound fire extinguisher	Lung congestion, tissue irritation, CNS depressant, lung, liver and kidney injury	Possible liver, lung and kidney changes, ACGIH Suspect	Inhalation, Skin
Ethylene dichloride (Dichloroethane)	Liquid	Fumigant, solvent	Central nervous system depressant, liver and kidney change, cyanosis	Skin absorption is significant, liver kidney, adrenal damage, NCI Suspect Carcinogen	Inhalation, Skin
Freons (Freon 113)	Gases, (also liquids)	Refrigerants, aerosol can propellants	Levels greater than 1000 ppm can cause nonspecific central nervous system effects such as dizziness, headache, or impaired psychomotor skills. At higher levels cardiac sensitization may occur. Use only in well ventilated areas or with personal protective equipment. Refer to EPA Regulations regarding release of Freons into the atmosphere.		Inhalation

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Fungicides (Pentachlorophenol)	Solids	Applied to wood products to prevent destruction from fungus and insects	Acute irritation of the skin; upper respiratory tract and eyes. Violent coughing, sneezing, and intoxication	Significant absorption through skin, liver damage and skin irritation	Skin
Insecticides, (DDT, Lindane, Dieldrin,	Liquids & Solids	Agricultural insecticides (applied as liquid spray or dust)	Severe CNS response, tremors, convulsion, and death	Effects on CNS, cellular changes in liver	Inhalation,
Methyl bromide	Gas	Fumigant	Lung irritant, congestion and/or delayed CNS depressant, headaches, nausea and vomiting	Severe nervous system effects, some liver and kidney changes, NCI Suspect Carcinogen	Skin, Inhalation
Methyl chloride	Gas	Refrigerant, aerosol propellant, solvent	Dizziness, delayed CNS depressant, blurred vision, incoordination, nausea, vomiting	CNS effects, liver and kidney changes, NCI Suspect Carcinogen	Skin, Inhalation
Methyl chloroform (1,1,1 trichloroethane)	Liquid	Degreasing solvent	Intoxication, some dermatitis	Little or no physiological effects	Inhalation, Skin
Methylene chloride (Dichloromethane)	Liquid	Paint remover, plastic solvent	Narcosis, loss of equilibrium	Slight skin and eye irritation, ACGIH Suspect Carcinogen	Inhalation, Skin
Teflon (Fluorinated plastic)	Solid	Bearings, wire coatings	At least one identified component of Teflon decomposition is extremely toxic. Vapors from heated Teflon (above 750 F) should be inhaled.		Inhalation
Tetrabromoethane (acetylene tetrabromide)	Liquid	Gauge fluid, solvent	Narcosis, coma, general CNS depressant, liver and kidney injury	Lung irritation, kidney and liver changes	Inhalation
1,1,2,2 Tetrachloroethane (acetylene tetrachloride)	Liquid	Solvent, M-4 DANC-A CW decontamination neutralization chemical	Respiratory irritation and pulmonary damage, liver and kidney damage. Most toxic chlorinated hydrocarbon	Significant skin absorption, liver damage, Carcinogen	Skin, Inhalation

Enclosure (1)