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MATERIAL
SAFETY
DATA SHEET

No. 154

PRODUCT NAME Tungsten Hexafluoride	CAS # 7783-82-6
TRADE NAME AND SYNONYMS Tungsten hexafluonide (D.O.T.)	DOT I.D. No.: UN 2196
CHEMICAL NAME AND SYNONYMS Tungsten Hexafluoride	DOT Hazard Class: Division 2.3
	Formula WF ₆
ISSUE DATES AND REVISIONS Revised January 1995	Chemical Family: Metal Flouride

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT

TWA = None listed. Hydrogen fluoride (hydrolysis product) Ceiling limit (as F) = 3 Molar PPM. OSHA 1993 8 Hr. TWA for HF (as F) = 3 Molar PPM.

SYMPTOMS OF EXPOSURE

Corrosive and irritating to the upper and lower respiratory tracts, skin and eyes. It hydrolyzes very rapidly yielding hydrofluoric acid so that skin burns and mucosal irritation are like that from exposure to that acid. Symptoms include lacrymation, cough, labored breathing and excessive salivary and sputum formation. Excessive irritation of the lungs causes acute pneumonitis and pulmonary edema which could be fatal. Hydrofluoric acid dermal burns exhibit severe pain, redness, possible swelling and early necrosis.

TOXICOLOGICAL PROPERTIES

Tungsten hexafluoride is irritating and corrosive to all living tissues. Toxic level exposure to dermal tissue causes hydrofluoric acid burns and skin lesions resulting in necrosis and eventual scarring. Burns are progressive while any residual active fluorides remain. Chemical pneumonitis and pulmonary edema result from exposure to the lower respiratory tract and deep lung. Residual pulmonary malfunction might also occur. Burns of the eye result in lesions and possible loss of vision. Extended low level systemic absorption of fluorides may cause fluorosis, an abnormal calcification pattern of the skeletal system.

RECOMMENDED FIRST AID TREATMENT

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO TUNGSTEN HEXAFLUORIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Inhalation: Conscious persons should be assisted to an uncontaminated area and breathe fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given assisted respiration and supplemental oxygen. Keep the victim warm and quiet. Assure that mucous or vomited material does not obstruct the airway by use of positional drainage. Delayed pulmonary edema may occur. Keep patient under medical observation for at least 24 hours.

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Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.

Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Tungsten hexafluoride reacts violently with water to produce hydrofluoric acid and tungsten oxyfluorides.

PHYSICAL DATA

BOILING POINT 62.71°F (17.06°C)	LIQUID DENSITY AT BOILING POINT 214.1 lb/ft ³ (3430 kg/m ³)
VAPOR PRESSURE @ 70°F (21.1°C) = 16.7 psia (115kPa)	GAS DENSITY AT 70°F, 1 atm .793 lb/ft ³ (12.7 kg/m ³)
SOLUBILITY IN WATER Hydrolyzes violently	FREEZING POINT 36.1°F (2.3°C)
EVAPORATION RATE Unknown	SPECIFIC GRAVITY (AIR=1) @ 70°F (21.1°C) = 10.6
APPEARANCE AND ODOR Liquid is light yellow; vapor is colorless and odorless	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) N/A	AUTO IGNITION TEMPERATURE N/A	FLAMMABLE LIMITS % BY VOLUME (See Page 4) N/A
EXTINGUISHING MEDIA Nonflammable liquid and vapor		ELECTRICAL CLASSIFICATION
SPECIAL FIRE FIGHTING PROCEDURES If containers are involved in a fire, safely relocate or keep cool with water spray.		
UNUSUAL FIRE AND EXPLOSION HAZARDS None		

REACTIVITY DATA

STABILITY Unstable		CONDITIONS TO AVOID None
Stable	X	
INCOMPATIBILITY (Materials to avoid) Water as vapor or liquid		
HAZARDOUS DECOMPOSITION PRODUCTS Hydrofluoric acid and tungsten oxyfluorides when hydrolyzed		
HAZARDOUS POLYMERIZATION May Occur		CONDITIONS TO AVOID None
Will Not Occur	X	

SPILL OR LEAK PROCEDURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

WASTE DISPOSAL METHOD

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

Tungsten Hexafluoride

TOXICOLOGICAL PROPERTIES: (Continued)

Tungsten hexafluoride is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.

Persons in ill health where such illness would be aggravated by exposure to tungsten hexafluoride should not be allowed to work with or handle this product.

RECOMMENDED FIRST AID TREATMENT: (Continued)

Eye Contact: PERSONS WITH POTENTIAL EXPOSURE TO TUNGSTEN HEXAFLUORIDE SHOULD NOT WEAR CONTACT LENSES.

Flush contaminated eye(s) with copious quantities of water. Part eyelids with fingers to assure complete flushing. Continue for minimum of 30 minutes.

Skin Contact: Flush affected area with copious quantities of water. Remove affected clothing as rapidly as possible. Dermal burns may be treated with a calcium gluconate gel or slurry in water or glycerine. This compound binds the active fluorides in an insoluble form, limits burn extension and relieves pain.

SPECIAL PRECAUTIONS

OTHER RECOMMENDATIONS OR PRECAUTIONS: (Continued)

Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

Reporting under SARA, Title II', Section 313 not required.

SPECIAL PRECAUTIONS

OTHER RECOMMENDATIONS OR PRECAUTIONS: (CONTINUED)

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Reporting under SARA, Title III, Section 313 not required.

NFPA 704 No. for tungsten hexafluoride = 4 0 2 ~~W~~