



Central Pollution Control Board

Ministry of Environment & Forests, Govt of India, Parivesh Bhawan, East Arjun Nagar, Delhi - 110032

MATERIAL SAFETY DATA SHEETS

728

Uranium hexafluoride

1. CHEMICAL IDENTITY

Chemical Name : Uranium hexafluoride

Chemical Classification: Radioactive

Trade Name :

Synonyms: Uranium fluoride, Uranyl fluoride

Formula : UF₆

CAS No: 7783-81-5

UN No: 2978

Regulated Identification

Shipping Name :

Hazchem Code :

Codes / Label : Class 7, Radioactive

Hazardous Waste ID No :

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 Uranium hexafluoride	7783-81-5	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: 56.5 deg C sublimation point

Physical State: Solid

Appearance: A colourless volatile radioactive crystalline solid.

Melting Pt °C: 64.5 deg C at 2 atm

Vapour Pressure @ 35°C mmHg: 115 mm Hg at 25 deg C

Odour:

Vapour Density(Air =1): 12

Solubility in water at 30°C g/100ml: 174 g/L (25 deg C)

Others: Soluble in liq chlorine, bromine, carbon tetrachloride, chloroform, and sym tetrachloroethane. It is a radioactive material.

Specific Gravity (Water =1): 5.09 at 20.7 deg C

pH :

3. FIRE / EXPLOSION HAZARD DATA

Flammability : No

LEL:

Flash Point °C in OC:

TDG Flammability:

UEL:

Flash Point °C in CC:

Autoignition Temperature °C :

Explosion sensitivity to impact:

Explosion sensitivity to static Electricity:

Hazardous Combustion Products : Toxic gases and vapors (such as hydrofluoric acid) may be released in a fire involving soluble uranium compound.

Hazardous Polymerization :

Combustible Liquid:

Explosive Material:

Corrosive Material

Flammable Material:

Oxidiser :

Others:

Pyrophoric Material:

Organic Peroxide :

4. REACTIVITY DATA

Chemical Stability : Volatile crystals.

Incompatibility with other material : React vigorously with aromatic hydrocarbons (benzene, toluene, xylenes), undergoes a violent reaction with water or alcohols (methanol, ethanol) Reacts with most metals.

Reactivity : Reacts vigorously with water, forming mainly uranyl fluoride and hydrofluoric acid. Interaction with benzene, toluene, or xylene is very vigorous, with separation of carbon, and violent with ethanol or water.

Hazardous Reaction Products :

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, skin, eyes, ingestion

Effects of Exposure / Symptoms:

Dyspnea, bronchospasm (with abnormal pfts and hypoxia), chemical pneumonitis, pulmonary edema (can be hemorrhagic), tracheobronchitis, upper airway obstruction, chemical burns (larynx, trachea, bronchi) and ards may occur following inhalation. Prenatal ionizing radiation exposure may cause congenital anomalies, mental retardation, and an increased incidence of seizures.

Emergency Treatment :

Inhalation: Do not delay care and transport of a seriously injured person. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Skin: Remove all exposed clothing and jewelry taking necessary precautions. Irrigate exposed areas promptly with copious amounts of water for at least 30 minutes. Wash the skin, including hair and nails, vigorously; do repeated soap washings.

Eyes: Immediately flush with running water for at least 20 minutes. See Inhalation.

Ingestion: See inhalation. Follow the steps for inhalation.

LD50 (oral-rat) mg/kg:		STEL:	0.6 mg/m3
LC50 (rat) mg/kg:	26,098 mg/m3	Odour Threshold:	
Permissible Exposure Limit:		TLV (ACGIH) :	0.2 mg/m3

NFPA Hazard	Health	Flammability	Reactivity	Special
Signals				

6. PREVENTIVE MEASURES

Personal Protective Equipment : Wear appropriate protective gloves, clothing and goggles.

Handling : All chemicals should be considered hazardous. Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle this chemical or its container. Handling should occur in a chemical fume hood.

Storage : Keep in a cool, dry, dark location in a tightly sealed container or cylinder. Keep away from incompatible materials, ignition sources and untrained individuals. Secure and label area. Protect containers/cylinders from physical damage.

Precautions :

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media : Use foam, dry chemical, or carbon dioxide.

Special Procedure : If large quantities of combustibles are involved, use water in flooding quantities as spray and fog. Use water spray to knock-down vapors. Cool all affected containers with flooding quantities of

water.

Unusual Hazards : Bare filled cylinders, identified with UN2978 as part of the marking, may rupture in heat of engulfing fire; bare empty (except for residue) cylinders will not rupture in fires.

EXPOSURE: First Aid Measures:

Inhalation: Do not delay care and transport of a seriously injured person. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Skin: Remove all exposed clothing and jewelry taking necessary precautions. Irrigate exposed areas promptly with copious amounts of water for at least 30 minutes. Wash the skin, including hair and nails, vigorously; do repeated soap washings.

Eyes: Immediately flush with running water for at least 20 minutes. See Inhalation.

Ingestion: See inhalation. Follow the steps for inhalation.

Antidotes / Dosages:

SPILLS :

Steps To Be Taken : Do not use water on material itself. Use water spray to knock-down vapors. Do not apply water to point of leak in tank car or container. Keep material out of water sources and sewers.

Waste Disposal Method:

8. ADDITIONAL INFORMATION / REFERENCES

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM :	Contact person
MAILING ADDRESS :	in Emergency :
TELEPHONE / TELEX NOS :	Local Bodies involved :
TELEGRAPHIC ADDRESS :	Standard Packing :
OTHERS :	Trem Card Details / Ref :

10. DISCLAIMER

Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer/ seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. The Government makes no warranties expressed or implied in the respect of the adequacy of this document for any particular purpose.

End of document

Total No. of Pages: 3