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

MATERIAL SAFETY DATA SHEETS

605 2,3,7,8 - Tetrachlorodibenzo-p-dioxin

1. CHEMICAL IDENTITY

Chemical Name : 2,3,7,8 - Tetrachlorodibenzo-p-dioxin

Chemical Classification: Toxic **Trade Name :**

Synonyms: 2,3,7,8-Tetrachloro-dibenzo-p-dioxin, Dioxin, Dioxine, TCDD

Formula : C12H4Cl4O2 **CAS No:** 1746-01-6 **UN No:** 2811

Regulated Identification

Shipping Name : Poisonous solid **Hazchem Code :** 2X

Codes / Label : Toxic **Hazardous Waste ID No :** 6

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 2,3,7,8 - Tetrachlorodibenzo-p-dioxin	1746-01-6	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: Decomposes **Physical State:** Solid **Appearance:** White crystals or tan crystalline powder.

Melting Pt °C: 305-306 **Vapour Pressure @ 35°C mmHg:** 1.50X10-9 mm Hg @ 25 deg C **Odour:**

Vapour Density(Air =1): **Solubility in water at 30°C g/100ml:** 2X10-4 mg/L @ 25 deg C **Others:** Soluble in toluene

Specific Gravity (Water =1): **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 : When heated to decomposition, toxic gases (Cl-) are released.

Hazardous Polymerization : Will not occur

Combustible Liquid: No **Explosive Material:** No **Corrosive Material** No

Flammable Material: No **Oxidiser :** No **Others:**

Pyrophoric Material: No **Organic Peroxide :** No

4. REACTIVITY DATA

Chemical Stability : Changes chemically when exposed in isooctane or n-octanol to UV light tetrachlorodibenzo-p-dioxin is stable under ordinary conditions of storage. 2,3,7,8-TCDD is considered relatively stable toward heat, acids,

and alkalies.

Incompatibility with other material : UV light (decomposes)

Reactivity :

Hazardous Reaction Products : 2,3,7,8-tetrachlorodibenzo-p-dioxin begins to decompose at 500 deg C and virtually complete decomposition occurs within 21 seconds at a temp of 800 deg C.

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, Ingestion, Skin and Eyes

Effects of Exposure / Symptoms:

Inhalation : Dyspnea may be noted. Ingestion : Right-upper-quadrant pain, anorexia, nausea and vomiting may be early symptoms. Pancreatitis occurred in one case of industrial exposure. Skin : The initial dermal reaction is extensive inflammation of exposed areas with photosensitivity, followed by development of chloracne. Eye : Inflammation of the eye, irritation and burning may be noted.

Emergency Treatment :

Inhalation: Leave the contaminated area; take deep breaths of fresh air. Call a physician

Skin: Flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.

Eyes: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center.

Ingestion: If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and call a hospital or poison control center. Transport the victim to a hospital.

LD50 (oral-rat) mg/kg: 20 mg/kg	**STEL:**
LC50 (rat) mg/kg:	**Odour Threshold:**
Permissible Exposure Limit:	**TLV (ACGIH) :**

NFPA Hazard Signals	**Health**	**Flammability**	**Reactivity**	**Special**

6. PREVENTIVE MEASURES

Personal Protective Equipment : Impervious clothing, gloves, dust-proof goggles and self-contained breathing apparatus

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 : For workers engaged in the decontamination process after an accident, it is recommended that they wear complete throw away equipment to protect the skin and prevent exposure to dust and vapours from the contaminated materials.

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media :

Special Procedure :

Unusual Hazards :

EXPOSURE: First Aid Measures:

Inhalation: Leave the contaminated area; take deep breaths of fresh air. Call a physician

Skin: Flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.

Eyes: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center.

Ingestion: If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and call a hospital or poison control center. Transport the victim to a hospital.

Antidotes / Dosages:

SPILLS :

Steps To Be Taken : Dampen spilled material with toluene and collect in a container. Wash sutface with detergent and water.

Waste Disposal Method: Seal all wastes for incineration. It should not be disposed of in soil.

8. ADDITIONAL INFORMATION / REFERENCES

It is a by-product of the manufacture of polychlorinaled phenols. It is found at low levels in 2,4,5-trichlorophenol and hexachlorophene. It is also found during various combustion processes. Incineration of chemical wastes, including chlorophenols, chlorinated benzenes and biphenyl ethers may result in the presence of TCDD in flue gases, fly ash and soot particles. It is immobile in contaminated soil and may be retained for years. An industrial accident during the manufacture of 2,4,5-trichlorophenol in Seveso, Italy caused the release of an estimated one to five kilograms of TCDD into the environment resulting in complete soil contamination along with other effects.

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM :

MAILING ADDRESS :

TELEPHONE / TELEX NOS :

TELEGRAPHIC ADDRESS :

OTHERS :

Contact person in Emergency :

Local Bodies involved :

Standard Packing :

Trem Card Details / Ref :

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