

Tetraethylthiuram disulfide (Disulfiram) SDS | MSDS

1.PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- **Product Name:** Tetraethylthiuram disulfide (Disulfiram)
- **Catalog Number:** S1680
- **CAS Number:** 97-77-8
- **IUPAC Name:** N,N,N',N'-tetraethyl-thioperoxydicarbonic diamide($[(H_2N)C(S)]_2S_2$)

Relevant identified uses and uses advised against

- **Identified uses:** For research and development use only; laboratory chemicals; manufacture of substances.
- **Uses advised against:** Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- **Company :** Selleck Chemicals
- **TollFree :** +1 877 796-6397
- **Tel :** +1 832 582-8158
- **Fax :** +1 832 582-8590

Emergency telephone number

- **Emergency phone #:** +1 832 582-8158

2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

- Acute toxicity (Oral): Category 4
- Skin sensitisation: Category 1
- Specific target organ toxicity - repeated exposure: Category 2
- Short-term (acute) aquatic hazard: Category 1
- Long-term (chronic) aquatic hazard: Category 1

Pictogram:



Signal word: Warning

Hazard statements:

- H302 Harmful if swallowed.

- H317 May cause an allergic skin reaction.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

- Prevention:

- P260 Do not breathe powder/ fume/ gas/ powder/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves.

- Response:

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P314 Get medical advice/ attention if you feel unwell.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P363 Wash contaminated clothing before reuse.
- P391 Collect spillage.

- Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards:

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- **Substance / Mixture:** Substance
- **CAS-No.:** 97-77-8
- **Components:**
- **Chemical name:** Tetraethylthiuramdisulfide
- **CAS No.:** 97-77-8
- **Concentration (% w/w):** ≥ 90 - ≤ 100
- **Trade secret:** Actual concentration is withheld as a trade secret.

4. FIRST AID MEASURES

- **General advice:** Show this safety data sheet to the doctor in attendance.
- **If inhaled:** After inhalation: fresh air. Call in physician.
- **In case of skin contact:** Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

- **In case of eye contact:** After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- **If swallowed:** After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
- **Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
- **Protection of first-aiders:** For personal protection see section 8.
- **Notes to physician:** N/A.

5. FIREFIGHTING MEASURES

- **Unsuitable extinguishing media:** For this substance/mixture no limitations of extinguishing agents are given.
- **Hazardous combustion products:** Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides.
- **Specific extinguishing methods:** N/A.
- **Further information:** Suppress (knock down) gases/vapours/powder with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
- **Special protective equipment for fire-fighters:** Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

6. ACCIDENTAL RELEASE MEASURES

- **Personal precautions, protective equipment and emergency procedures:**
- **Advice for non-emergency personnel:** Avoid inhalation of powder. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
- **Advice for emergency responders:** Wear appropriate personal protective equipment, as indicated in Section 8.
- **Environmental precautions:** Do not let product enter drains.
- **Methods and materials for containment and cleaning up:** Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of powder.

7. HANDLING AND STORAGE

- **Advice on safe handling:** Work under hood. Do not inhale substance/mixture. For precautions see section 2.
- **Further information on storage conditions:** Tightly closed. Dry.
- **Storage class:** 11, Combustible powder.
- **Recommended storage temperature:** See product label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Ingredients with workplace control parameters:**

- Tetraethylthiuramdisulfide (97-77-8):

- TWA: 2 mg/m³ (Basis: ACGIH)

- TWA: 2 mg/m³ (Basis: NIOSH REL)

- **Engineering measures:** N/A.

- **Personal protective equipment:**

- **Respiratory protection:** Required when powder is generated. Recommended Filter type P2 (based on DIN EN 143, DIN 14387).

- **Hand protection:** Nitrile rubber gloves (0.11 mm thickness, breakthrough time 480 min). Handle with gloves and use proper removal techniques.

- **Eye protection:** Safety glasses tested and approved under standards such as NIOSH (US) or EN 166 (EU).

- **Skin and body protection:** Protective clothing.

- **Hygiene measures:** Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** powder

- **Colour:** beige

- **Odour:** N/A

- **Odour Threshold:** N/A

- **pH:** N/A

- **Melting point/range:** 156 - 160 °F / 69 - 71 °C

- **Boiling point/boiling range:** 243 °F / 117 °C (23 hPa)

- **Flash point:** N/A

- **Evaporation rate:** N/A

- **Flammability (powder, gas):** N/A

- **Flammability (powder):** N/A

- **Burning rate:** N/A

- **Upper/Lower explosion limit:** N/A

- **Vapour pressure:** N/A

- **Relative vapour density:** N/A

- **Relative density:** N/A

- **Density:** 1.3 g/cm³

- **Water solubility:** 0.004 g/l (77 °F / 25 °C)

- **Partition coefficient: n-octanol/water:** log Pow: 5

- **Autoignition temperature:** N/A

- **Decomposition temperature:** N/A

- **Viscosity:** N/A

- **Explosive properties:** Not classified as explosive.

- **Oxidizing properties:** none

- **Molecular weight:** 296.54 g/mol
- **Particle size:** N/A

10. STABILITY AND REACTIVITY

- **Reactivity:** N/A.
- **Chemical stability:** The product is chemically stable under standard ambient conditions (room temperature).
- **Possibility of hazardous reactions:** Violent reactions possible with strong oxidizing agents. Risk of explosion and/or toxic gas formation exists with nitrites and nitrous acid.
- **Conditions to avoid:** No information available.
- **Incompatible materials:** N/A.
- **Hazardous decomposition products:** In the event of fire, see section 5.

11. TOXICOLOGICAL INFORMATION

- **Acute toxicity:**
 - LD50 Oral - Rabbit - 1,800 mg/kg (Remarks: Peripheral Nerve and Sensation: Flaccid paralysis; Behavioral: Ataxia; Metabolic: Body temperature decrease).
 - LD50 Oral - Mouse - 1,980 mg/kg.
 - LD50 Intraperitoneal - Rat - 248 mg/kg.
 - LD50 Intraperitoneal - Mouse - 75 mg/kg.
 - LD50 Subcutaneous - Mouse - 2,600 mg/kg.
- **Skin corrosion/irritation:** N/A.
- **Serious eye damage/eye irritation:** Eyes - Rabbit: No eye irritation (OECD Test Guideline 405).
- **Respiratory or skin sensitization:** N/A.
- **Germ cell mutagenicity:** Various positive results in Hamster (ovary/embryo), Chicken (embryo), Mouse (lymphocyte/embryo), and Rat (oral) test systems.
- **Carcinogenicity:** Not classifiable as to its carcinogenicity based on IARC, ACGIH, NTP, or OSHA classification.
- **Reproductive toxicity:** N/A.
- **STOT - single exposure:** N/A.
- **STOT - repeated exposure:** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard:** N/A.
- **Additional Information:** RTECS: JO1225000. Toxic interaction observed with 1,2-dibromoethane. May cause nervous system disturbances, lethargy, ataxia, seizures, coma, and thyroid enlargement. Stomach irregularities based on human evidence.

12. ECOLOGICAL INFORMATION

- **Ecotoxicity (Tetraethylthiuramdisulfide):**
 - Toxicity to fish: LC50 (*Poecilia reticulata*): 0.187 mg/l (96 h).

- Toxicity to daphnia: LC50 (Daphnia magna): 0.12 mg/l (48 h).
- Toxicity to algae: EC50 (Chlorella pyrenoidosa): 1.8 mg/l (96 h).
- M-Factor (Acute aquatic toxicity): 1.
- Toxicity to fish (Chronic): LOEC (Oncorhynchus mykiss): 0.006 mg/l (60 d).
- **Persistence and degradability:** N/A.
- **Bioaccumulative potential:** N/A. Partition coefficient: log Pow: 5.
- **Mobility in soil:** N/A.
- **Other adverse effects:** N/A.
- **Endocrine disrupting properties:** N/A.

13. DISPOSAL CONSIDERATIONS

- **Waste treatment methods:** Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers. Do not mix with other waste. Handle uncleaned containers like the product itself.

14. TRANSPORT INFORMATION

- **IATA-DGR:**
- UN/ID No.: UN 3077
- Proper shipping name: Environmentally hazardous substance, powder, n.o.s. (Tetraethylthiuramdisulfide)
- Class: 9
- Packing group: III
- Labels: Class 9 - Miscellaneous dangerous substances and articles
- **IMDG-Code:**
- UN number: UN 3077
- Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, POWDER, N.O.S. (

16. OTHER INFORMATION

Revision Date: 2026/08/04

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.