



Health	2
Fire	1
Reactivity	0
Personal Protection	E

# Material Safety Data Sheet

## Tetraethylthiuram Disulfide MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Tetraethylthiuram Disulfide

**Catalog Codes:** SLT4156

**CAS#:** 97-77-8

**RTECS:** JO1225000

**TSCA:** TSCA 8(b) inventory: Tetraethylthiuram Disulfide

**CI#:** Not available.

**Synonym:** Antabuse; TETD: Disulfiram; bis(Diethylthiocarbamyl)Disulfide

**Chemical Name:** Tetraethylthiuram Disulfide

**Chemical Formula:** C<sub>10</sub>H<sub>20</sub>N<sub>2</sub>S<sub>4</sub>

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**

1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Tetraethylthiuram Disulfide	97-77-8	100

**Toxicological Data on Ingredients:** Tetraethylthiuram Disulfide: ORAL (LD50): Acute: 1980 mg/kg [Mouse]. 1800 mg/kg [Rabbit]. 500 mg/kg [Rat].

### Section 3: Hazards Identification

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects:**

**CARCINOGENIC EFFECTS:** A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC.

**MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast. **TERATOGENIC EFFECTS:** Classified POSSIBLE for human.

**DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE].

The substance may be toxic to the nervous system, the reproductive system, liver, peripheral nervous system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Not available.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

### Section 5: Fire and Explosion Data

**Flammability of the Product:** May be combustible at high temperature.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** Not available.

**Flammable Limits:** Not available.

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...), sulfur oxides (SO<sub>2</sub>, SO<sub>3</sub>...).

**Fire Hazards in Presence of Various Substances:**

Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

### Section 6: Accidental Release Measures

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

### Precautions:

Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

### Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 40°C (104°F). Sensitive to light. Store in light-resistant containers.

## Section 8: Exposure Controls/Personal Protection

### Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Exposure Limits:

TWA: 2 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] TWA: 2 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] TWA: 2 (mg/m<sup>3</sup>) from NIOSH TWA: 2 (mg/m<sup>3</sup>) [Germany] Inhalation Respirable. Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid. (crystalline powder.)

**Odor:** Slight.

**Taste:** Bitter. (Slight.)

**Molecular Weight:** 296.52 g/mole

**Color:** Off-white.

**pH (1% soln/water):** Not applicable.

**Boiling Point:** Not available.

**Melting Point:** 71.5°C (160.7°F)

**Critical Temperature:** Not available.

**Specific Gravity:** 1.3 (Water = 1)

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** The product is more soluble in oil; log(oil/water) = 3.9

**Ionicity (in Water):** Not available.

**Dispersion Properties:**

Is not dispersed in cold water, hot water. See solubility in acetone.

**Solubility:**

Soluble in acetone. Insoluble in cold water, hot water. Soluble in alcohol, benzene, chloroform, carbon disulfide. Slightly soluble in light petroleum.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Excess heat, incompatible materials, light, excess dust generation.

**Incompatibility with various substances:** Reactive with oxidizing agents.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** Sensitive to light. Protect from light.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:** Acute oral toxicity (LD50): 500 mg/kg [Rat].

**Chronic Effects on Humans:**

CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC.  
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human.  
DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE].  
May cause damage to the following organs: the nervous system, the reproductive system, liver, peripheral nervous system, central nervous system (CNS).

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant, sensitizer), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:**

May affect genetic material (mutagenic). May cause cancer based on animal test data. May cause adverse reproductive effects and birth defects (teratogenic).

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: May cause digestive tract irritation with abdominal pain, nausea, vomiting, and diarrhea. It may affect behavior/central nervous system with symptoms similar to chronic ingestion. It may also affect the cardiovascular system (tachycardia, hypertension, hypotension, EEG abnormalities) and cause tachypnea, and ketosis. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect behavior/central nervous system (headache, fatigue, depression, personality changes (psychosis), irritability, seizures, anxiety, dizziness, weakness, delirium, lethargy, poor coordination of arms and legs (ataxia), coma, flaccid paralysis), Autonomic and Peripheral nervous systems (numbness, "pins and needles"), gastrointestinal tract (cause ulceration or bleeding from the stomach), metabolism, brain (degenerative changes), spinal cord, liver (hepatitis, hepatocellular necrosis), blood, spleen, and skin (allergic dermatitis, urticaria).

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

### Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

### Section 15: Other Regulatory Information

**Federal and State Regulations:**

Illinois toxic substances disclosure to employee act: Tetraethylthiuram Disulfide Rhode Island RTK hazardous substances: Tetraethylthiuram Disulfide Pennsylvania RTK: Tetraethylthiuram Disulfide Minnesota: Tetraethylthiuram Disulfide Massachusetts RTK: Tetraethylthiuram Disulfide New Jersey: Tetraethylthiuram Disulfide New Jersey spill list: Tetraethylthiuram Disulfide TSCA 8(b) inventory: Tetraethylthiuram Disulfide TSCA 8(a) PAIR: Tetraethylthiuram Disulfide TSCA 8(d) H and S data reporting: Tetraethylthiuram Disulfide: Effective and sunset dates: JAN, 261994

**Other Regulations:** EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

**WHMIS (Canada):** CLASS D-2B: Material causing other toxic effects (TOXIC).

**DSCL (EEC):**

R22- Harmful if swallowed. R43- May cause sensitization by skin contact. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S24- Avoid contact with skin. S37- Wear suitable gloves. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 1

**Reactivity:** 0

**Personal Protection:** E

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**Section 16: Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/10/2005 12:02 AM

**Last Updated:** 11/01/2010 12:00 PM

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