

## SAFETY DATA SHEET

Creation Date 15-Feb-2017

Revision Date 24-Dec-2021

Revision Number 5

### 1. Identification

**Product Name** Tetraethylthiuram disulfide

**Cat No. :** AC138120000; AC138120025; AC138120250; AC138125000

**CAS No** 97-77-8

**Synonyms** Bis(diethylthiocarbamoyl) disulfide; Disulfiram; TETD

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

**Emergency Telephone Number** For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|   |            |
|---|------------|
| Acute oral toxicity   | Category 4 |
| Skin Sensitization  | Category 1 |
| Specific target organ toxicity - (repeated exposure)                                  | Category 2 |
| Target Organs - Liver, Central nervous system (CNS), Peripheral Nervous System (PNS). |            |

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

Harmful if swallowed  
May cause an allergic skin reaction

May cause damage to organs through prolonged or repeated exposure



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Do not breathe dust/fume/gas/mist/vapors/spray

#### Response

Get medical attention/advice if you feel unwell

#### Skin

IF ON SKIN: Wash with plenty of soap and water  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse

#### Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

## 3. Composition/Information on Ingredients

| Component  | CAS No  | Weight % |
|------------|---------|----------|
| Disulfiram | 97-77-8 | > 95     |

## 4. First-aid measures

|  |   |
|--|---|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.   |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.  |
| <b>Inhalation</b>                          | Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.  |
| <b>Ingestion</b>                           | Clean mouth with water. Get medical attention.  |
| <b>Most important symptoms and effects</b> | May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Alcohol resistant foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available  
**Method -** No information available

**Autoignition Temperature** No information available

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Sulfur oxides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
2

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal.

## 7. Handling and storage

**Handling**

Avoid contact with skin and eyes. Avoid contact with skin and clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Avoid breathing vapors or mists. Do not ingest. If swallowed then seek immediate medical assistance. Wash thoroughly after handling.

**Storage.**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Oxidizing agent.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component  | ACGIH TLV                | OSHA PEL                           | NIOSH IDLH               | Mexico OEL (TWA)         |
|------------|--------------------------|------------------------------------|--------------------------|--------------------------|
| Disulfiram | TWA: 2 mg/m <sup>3</sup> | (Vacated) TWA: 2 mg/m <sup>3</sup> | TWA: 2 mg/m <sup>3</sup> | TWA: 2 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ventilation systems.

**Personal Protective Equipment**

|                                 |   |
|---------------------------------|---|
| <b>Eye/face Protection</b>      | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.   |
| <b>Respiratory Protection</b>   | Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.                    |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.  |

**9. Physical and chemical properties**

|   |                             |
|---|-----------------------------|
| <b>Physical State</b>                         | Solid                       |
| <b>Appearance</b>                             | Light yellow                |
| <b>Odor</b>                                   | Odorless                    |
| <b>Odor Threshold</b>                         | No information available    |
| <b>pH</b>                                     | No information available    |
| <b>Melting Point/Range</b>                    | 70 - 74 °C / 158 - 165.2 °F |
| <b>Boiling Point/Range</b>                    | 117 °C / 242.6 °F 23 hPa    |
| <b>Flash Point</b>                            | No information available    |
| <b>Evaporation Rate</b>                       | Not applicable              |
| <b>Flammability (solid,gas)</b>               | No information available    |
| <b>Flammability or explosive limits</b>       |                             |
| Upper   | No data available           |
| Lower   | No data available           |
| <b>Vapor Pressure</b>                         | No information available    |
| <b>Vapor Density</b>                          | Not applicable              |
| <b>Specific Gravity</b>                       | No information available    |
| <b>Solubility</b>                             | Insoluble in water          |
| <b>Partition coefficient; n-octanol/water</b> | No data available           |
| <b>Autoignition Temperature</b>               | No information available    |
| <b>Decomposition Temperature</b>              | No information available    |
| <b>Viscosity</b>                              | Not applicable              |
| <b>Molecular Formula</b>                      | C10 H20 N2 S4               |
| <b>Molecular Weight</b>                       | 296.51                      |

**10. Stability and reactivity**

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | No information available.  |
| <b>Conditions to Avoid</b>              | Incompatible products.   |
| <b>Incompatible Materials</b>           | Oxidizing agent  |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> ), Sulfur oxides |
| <b>Hazardous Polymerization</b>         | No information available.  |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

**11. Toxicological information****Acute Toxicity****Product Information**

**Component Information**

| Component  | LD50 Oral                | LD50 Dermal                  | LC50 Inhalation            |
|------------|--------------------------|------------------------------|----------------------------|
| Disulfiram | LD50 = 500 mg/kg ( Rat ) | LD50 > 2000 mg/kg ( Rabbit ) | LC50 = 700 ppm ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** May cause sensitization by skin contact

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component  | CAS No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|------------|---------|------------|------------|------------|------------|------------|
| Disulfiram | 97-77-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** Liver Central nervous system (CNS) Peripheral Nervous System (PNS)

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component  | Freshwater Algae | Freshwater Fish  | Microtox   | Water Flea |
|------------|------------------|--|------------|------------|
| Disulfiram | Not listed       | LC50: = 0.187 mg/L, 96h<br>semi-static (Poecilia reticulata) | Not listed | Not listed |

**Persistence and Degradability** Insoluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility.

| Component  | log Pow |
|------------|---------|
| Disulfiram | 3.88    |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

UN-No UN3077  
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.  
 Technical Name Disulfiram  
 Hazard Class 9  
 Packing Group III

**TDG**

UN-No UN3077  
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.  
 Hazard Class 9  
 Packing Group III

**IATA**

UN-No UN3077  
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.  
 Hazard Class 9  
 Packing Group III

**IMDG/IMO**

UN-No UN3077  
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.  
 Hazard Class 9  
 Packing Group III

## 15. Regulatory information

**United States of America Inventory**

| Component  | CAS No  | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|------------|---------|------|---|-----------------------------|
| Disulfiram | 97-77-8 | X    | ACTIVE  | -                           |

**Legend:**

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA 12(b) - Notices of Export Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component  | CAS No  | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|------------|---------|-----|------|-----------|-------|------|------|------|-------|----------|
| Disulfiram | 97-77-8 | X   | -    | 202-607-8 | X     | X    | X    | X    | X     | KE-03026 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations**

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

**CERCLA** Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component  | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|------------|---------------|------------|--------------|----------|--------------|
| Disulfiram | X             | X          | X            | -        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component  | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------|---|---|---|
| Disulfiram | -   | Use restricted. See item 75. (see link for restriction details)               | -   |

<https://echa.europa.eu/substances-restricted-under-reach>

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component  | CAS No  | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|------------|---------|----------|------------------------------|---------------------------|--|
| Disulfiram | 97-77-8 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component  | CAS No  | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------|---------|---|--|----------------------------|------------------------------------|
| Disulfiram | 97-77-8 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com

**Creation Date** 15-Feb-2017  
**Revision Date** 24-Dec-2021  
**Print Date** 24-Dec-2021  
**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**