



Safety Data Sheet (SDS)

Revision 1 Review Date: 3/15/16

1. Chemical Product and Company Identification

Product Name:	TETD / Disulfiram
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
MSDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	Bis(diethylthiocarbamoyl) disulfide: Tetraethylthiuram desulfide
CAS NO:	97-77-7
REACH:	Not available
Product Use:	Rubber Accelerator.

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

Classification:

The following Hazard statements are applicable only to the EU regulation and not the US GHS regulation: H400, H410.

GHS08 Healthy Hazard: Stot Re 2 H373 May cause damage to organs through prolonged and repeated exposure

GHS09 Environment: Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H 410 Very toxic to aquatic life with long lasting effects.

GHS07 : Acute Tox 4 H302 Harmful if swallowed
Skin Sens. 1 H317 May cause an allergic skin reaction

Label Elements:

Hazard Pictograms:



Signal Words:

Warning.

Hazard Statement:

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 statement:

P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P314: Get medical advice/attention if you feel unwell.
P330: Rinse mouth.
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
P363: Wash contaminated clothing before reuse.
P391: Collect spillage.
P501: Dispose of contents/container in according with local Regulation.

Other hazards:

Not applicable.

3. Composition / Information on Ingredients

Substance/Mixture:

Substance

Ingredients:

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Disulfiram	N/A	97-77-8	202-607-8	98%

4. First Aid Measures

Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical Attention.

Inhalation:

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

<u>Eyes:</u>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If eye irritation persists, consult a specialist.
<u>Skin:</u>	Wash off immediately with soap and plenty of water removing all contaminated clothes and Shoes. If skin irritation persists, call a physician. Remove and wash contaminated clothing before re-use Thoroughly clean shoes before reuse.
<u>Ingestion:</u>	Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting .Treat symptomatically. If swallowed, seek medical advice immediately and show this container or label. Immediate medical attention is required. Never give anything by mouth to an unconscious person.
<u>Most important symptoms and effects, both acute and delayed:</u>	
Harmful if swallowed. May cause an allergic skin reaction. May cause damage to organs through prolonged or repeated exposure.	
Indication of any immediate medical attention and special treatment needed:	If skin irritation or rash occurs, get medical advice/attention.

<u>5. Fire-Fighting Measures</u>	
<u>Suitable Extinguishing Media:</u>	Water spray, or dry chemical.
<u>Unsuitable extinguishing media:</u>	High volume water jet.
<u>Special Fire Fighting Procedures:</u>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective.
<u>Special hazards arising from the substance:</u>	Combustible material. Dust can form an explosive mixture in air. In case of fires, hazardous combustion gases are formed: carbon monoxide, sulphur oxides, nitrogen oxides (NOx).

<u>6. Accidental Release Measures</u>	
<u>For non-emergency personnel:</u>	Refer to section 8 of SDS for personal protection details. Do not create dust. Do not inhale dust. Avoid contact with skin, eyes, and clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.
<u>For emergency responders:</u>	Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.
<u>Environmental Precautions:</u>	Do not discharge into drains or rivers. Prevent further leakage or spillage if safe to do so.
<u>Methods for Containment and Cleaning up:</u>	Vacuum or sweep up material and place in suitable container for disposal. Avoid generation of dust. Wash spillage area after

cleanup with large amounts of water. Ventilate the area and wash spill site after material pick up is complete.

Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment. See Section 13 for information on disposal.

7. Handling and Storage:

Precautions for safe handling:

Do not get into eyes, on skin, or on clothing. Wash thoroughly After handling. Keep container tightly closed. Avoid breathing vapor, dust or mist. Use only with adequate ventilation. Avoid the formation or spread of dust in the air.

Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage including any incompatibilities:

Keep container tightly closed. Store in a cool, dry, well Ventilated area

8. Exposure Controls / Personal Protection

Occupational exposure limits:

France VME: 2 mg/m ³ 8 heures.	Belgium TWA: 2 mg/m ³ 8 uren	Spain VLA-ED: 2 mg/m ³ 8 horas	Germany 2mg/m ³ TWA (inhalable fraction)	Portugal TWA: 2 mg/m ³ 8 horas
The Netherlands 1mg/m ³ MAC	Finland TWA: 2 mg/m ³ 8 tunteina STEL: 6 mg/m ³ 15 minuutteina	Austria STEL: 20 mg/m ³ 15 Minuten TWA: 2 mg/m ³ 8 Stunden	Denmark TWA: 2 mg/m ³ 8 timer	Switzerland MAK: 2 mg/m ³ 8 Stunden
Norway TWA: 2 mg/m ³ 8 timer STEL: 4 mg/m ³ 15 minutter.	Estonia TWA: 1 mg/m ³ 8 tundides. STEL: 2 mg/m ³ 15 minutites.	Greece TWA: 2 mg/m ³	Iceland TWA: 2 mg/m ³ 8 klukkustundum. Ceiling: 4 mg/m ³	Lithuania TWA: 1 mg/m ³ STEL: 2 mg/m ³
Russia - TWA MAC: 1 mg/m ³	Slovenia TWA: 2 mg/m ³ 8 urah inhalable fraction STEL: 8 mg/m ³ 15 minutah inhalable fraction	Sweden STV: 2 mg/m ³ 15 minuter LLV: 1 mg/m ³ 8 timmar.	- -	- -

<u>Additional exposure limits under the conditions of use:</u>	Not Available.
<u>DNEL/DMEL and PNEC-Values:</u>	Not available.
<u>Exposure controls:</u>	
<u>Appropriate engineering controls:</u>	Handle in accordance with good industrial hygiene and safety practice. Use adequate ventilation to keep airborne concentrations low. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
<u>Individual protection measures, such as personal protective equipment:</u>	
<u>Respiratory Protection:</u>	In accordance with local and national regulations - In case of insufficient ventilation, wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143). In case of higher concentration self-contained breathing apparatus.
<u>Protective Gloves:</u>	Protective gloves. Nitrile rubber, NBR. Recommended thickness of the material: ≥ 0.11 mm. Value for the permeation: Level ≥ 480 min.
<u>Eye Protection:</u>	Tightly fitting safety goggles. Face-shield.
<u>Skin and Body Protection:</u>	Appropriate protective clothing to prevent skin exposure
<u>Thermal hazards:</u>	Wear suitable protective clothing to prevent heat.
<u>Environmental exposure controls:</u>	Avoid discharge into the environment. According to local regulations, Federal and official regulations.

9. Physical and Chemical Properties

<u>Appearance:</u>	Powder
<u>Colour:</u>	White or almost white.
<u>Odour:</u>	Characteristic
<u>Odour threshold:</u>	Not available
<u>PH:</u>	Not available
<u>Melting Point/range (C°):</u>	71.5°C(101.325 kPa)
<u>Boiling point/range (C°) :</u>	117°C(17 mm Hg)
<u>Flash point (°C):</u>	Not available
<u>Evaporation rate:</u>	Not available
<u>Flammability limit - lower (%):</u>	Not available
<u>Flammability (solid, gas):</u>	Not readily combustible solid
<u>Ignition temperature (°C):</u>	Not available
<u>Upper/lower flammability/explosive limits:</u>	Not available
<u>Vapour pressure (20°C):</u>	Negligible@20°C
<u>Vapour density:</u>	Not available
<u>Relative Density:</u>	1.3 g/cm ³
<u>Bulk density (kg/m³):</u>	Not available

<u>Water solubility (g/l):</u>	4.09 mg/L(25°C)
<u>n-Octanol/Water (log Po/w):</u>	log Pow= 3.88
<u>Auto-ignition temperature:</u>	Not available
<u>Decomposition temperature:</u>	Not available
<u>Viscosity, dynamic (mPa.s):</u>	Not available
<u>Explosive properties:</u>	Not available
<u>Oxidising properties:</u>	Not available
<u>Molecular Formula:</u>	C10H20N2S4
<u>Molecular Weight:</u>	296.52
<u>Other information:</u>	Fat solubility(solvent– oil to be specified) etc:Not available Surface tension: Not available Dissociation constant in water(pKa): Not available Oxidation-reduction Potential: Not available Specific gravity: Not available

10. Stability and Reactivity

<u>Reactivity:</u>	The substance is stable under normal storage and handling conditions.
<u>Chemical stability:</u>	Stable at room temperature in closed containers under normal storage and handling conditions.
<u>Possibility of hazardous reactions:</u>	No dangerous reactions known.
<u>Conditions to avoid:</u>	Incompatible materials. Avoid dust formation. Excessive heat.
<u>Incompatible materials:</u>	Strong acids, oxidizing agents.
<u>Hazardous decomposition products:</u>	Carbon monoxide, sulphur oxides, nitrogen oxides (NOx).

11. Toxicological Information

<u>Toxicokinetics, metabolism and distribution:</u>	Non-human toxicological data: Not available
<u>Information on toxicological effects:</u>	Acute toxicity: LD50(Oral, Rat): 7074 mg/kg bw LD50(Dermal, Rabbit): >2000 mg/kg bw LC50(Inhalation, Rat): Not available
<u>Skin corrosion/Irritation:</u>	Not classified
<u>Serious eye damage/irritation:</u>	Not classified
<u>Respiratory or skin sensitization:</u>	May cause an allergic skin reaction.
<u>Germ cell mutagenicity:</u>	Not classified
<u>Carcinogenicity:</u>	Not classified
<u>Reproductive toxicity:</u>	Not classified
<u>STOT- single exposure:</u>	Not classified
<u>STOT-repeated exposure:</u>	May cause damage to organs through prolonged or repeated exposure.
<u>Aspiration hazard:</u>	Not classified

12. Ecological Information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	0.067 mg/L	96h	Fish	OECD 203	N/A	N/A
LC50	0.15 mg/L	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	96h	Algae	OECD 201	N/A	N/A

Persistence and degradability: Not easily biodegradable.

Bioaccumulative potential: May be accumulated in organism.

Mobility in soil: Not available.

Results of PBT&vPvB assessment: Not available.

Other adverse effects: Not available.

13. Disposal Considerations

Waste treatment methods: The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

Product / Packaging disposal: If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

14. Transport Information

D.O.T. Shipping Name Not Regulated

Air - ICAO (international Civil Aviation Organization) UN 3077 Class: 9 Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Disulfiram) Packaging group: III

Sea - IMDG (International Maritime Dangerous Goods) UN 3077 Class: 9 Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Disulfiram) Packaging group: III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code IBC08

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture United States:

SARA Section 355 (extremely hazardous substances)	Substance is not listed.
SARA Section 313 (Specific toxic chemical listings)	Substance is not listed.
TSCA (Toxic Substances Control Act)	Substance is listed.
Proposition 65 (California)	
Chemicals known to cause cancer	Substance is not listed.
Chemicals known to cause reproductive toxicity for females	Substance is not listed.
Chemicals known to cause reproductive toxicity for males	Substance is not listed.
Chemicals known to cause developmental toxicity	Substance is not listed.
Carcinogenic Categories	
EPA (Environmental Protection Agency)	Substance is not listed.
IARC (International Agency for Research on Cancer)	97-77-8 disulfiram 3
TLV (Threshold Limit Value established by ACGIH)	97-77-8 disulfiram A4
NIOSH-Ca (National Institute for Occupational Safety and Health)	Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)	Substance is not listed.
Canada	
Canadian Domestic Substances List (DSL)	Substance is listed.
Canadian Ingredient Disclosure list (limit 0.1%)	Substance is not listed.
Canadian Ingredient Disclosure list (limit 1%)	Substance is listed.
Chemical Safety Assessment has been carried out? YES NO X	

16. Other Information

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.