

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 9043339509

MATERIAL SAFETY DATA SHEET

DISULFIRAM - USP

1. IDENTIFICATION OF THE PREPARATION AND OF THE COMPANY

Product Name : DISULFIRAM - USP
Application : (TETRA ETHYL THIURAM DI SULPHIDE)

CAS-No : 97-77-8

Company Identification : East Coast Organics (P) Ltd.,
Chennai _ 600 103,
Tamilnadu, INDIA.

Office Telephone No : 9043339509

2. Hazard(s) identification

Product Name	CAS Number	Molecular Weight	Chemical Formula
Disulfiram	97-77-8	296.54	C ₁₀ H ₂₀ N ₂ S ₄

2.1 Classification of the Substance or Mixture:

Acute Toxicity: Oral, Category 4
Skin Sensitization, Category 1
Specific Target Organ Toxicity (repeated exposure),
Category 2 Aquatic Toxicity (Acute), Category 1
Aquatic Toxicity (Chronic), Category 1

2.2 Label Elements:



GHS Signal Word:

Warning

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 044 – 64606699

GHS Hazard Phrases:

H302: Harmful if swallowed.

H317: May cause an allergic skin reaction.

H373: May cause damage to {organs} through prolonged or repeated exposure. H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

GHS Precaution Phrases:

P264: Wash {hands} thoroughly after handling.

P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.

P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear {protective gloves/protective clothing/eye protection/face protection}. P362+364: Take off contaminated clothing and wash it before reuse.

P260: Do not breathe

{dust/fume/gas/mist/vapours/spray}. P273: Avoid release to the environment.

GHS Response Phrases:

P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mouth.

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P333+313: If skin irritation or rash occurs, seek medical advice/attention.

P314: Get medical attention/advice if you feel unwell. P391: Collect spillage.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Harmful if swallowed.

Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation or skin absorption. May cause an allergic skin reaction.

May cause damage to {organs} through prolonged or repeated exposure. May cause eye, skin, or respiratory system irritation.

Very toxic to aquatic life with long lasting effects.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 044 – 64606699

3. Composition/Information on Ingredients

Component	CAS-No	Concentration %
Disulfiram	97-77-8	100

4. First-aid measures

- Eye Contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
- Skin Contact** : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.
- Inhalation** : Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Clean mouth with water. Get medical attention.
- Most important symptoms and effects** : 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
- Notes to Physician** : Treat symptomatically

5. Fire-fighting measures

- Suitable Extinguishing Media** : Auto Ignition Temperature: 240-280°C Use water spray, dry powder or regular foam to extinguish fires Water spray. Carbon dioxide (CO₂). 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:

A self contained breathing apparatus (SCBA) operating in the positive pressure mode and full fire fighting protective clothing should be worn for combating fires. During a fire the product can form (sulfur dioxide, nitrogen

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 044 – 64606699

oxides, Carbon dioxide (CO₂). Nitrogen oxides (NO_x. Carbon monoxide (CO). and toxic fumes) . Dust may form explosive mixture with air at concentrations above 20 g/m³.

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.

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 : Do not store at high temperatures, near oxidants and strong acids. Store in closed containers in a dry environment ,Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed.

8. Exposure controls / Personal protection

Exposure Guidelines :

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

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 Control : Local exhaust ventilation should be provided. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer. Ensure adequate ventilation, especially in confined areas. Ventilation systems.

Personal Protective Equipment :

Eye/face Protection : Chemical protective goggles are recommended where there is a possibility of eye contact with the product. Safety glasses with side shields are recommended for all other operations. An eye wash device should be available in the work area where the product is handled.

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 9043339509

Skin and body protection : Neoprene or nitrile gloves should be worn to prevent irritation and possible absorption. Cloth gloves are not recommended. Neoprene or nitrile rubber coated apron or other body covering may be required if there is a possibility of regular work clothing becoming contaminated with the product. All soiled or dirty clothing and personal protective equipment should be thoroughly cleaned before reuse. A shower is recommended after handling this product..

Respiratory Protection : Use as a minimum a NIOSH approved 1/2 face piece respirator equipped with cartridges approved for organic vapors, acid gases, and particulate matter with an exposure limit of not less than 0.05 mg/M3.

Hygiene Measures : Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

9. PHYSICAL AND CHEMICAL PROPERTIES :

Appearance/Physical State:	Off white powder
Boiling Point/Range	117 °C / 242.6 °F 23 hPa
Melt Point:	69°C - 72°C
Vapor Density (Air = 1):	NA
Octanol/Water Partition Coefficient:	log Pow = 3.88
Vapor Pressure:	Negligible
Evaporation Rate BuOAC = 1:	NA
Odor: Slight amine Specific Gravity:	1.3
% Volatile by Volume:	<0.5% by mass
Boiling Point:	NA
Solubility in Water:	0.02 g/100ml
pH:	NA
Other Solubility:	Soluble in Benzene, Carbon disulfide organic liquid, Ethanol
Other:	None
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Autoignition Temperature	240 -280 °c
Molecular Formula	C10 H20 N2 S4
Molecular Weight	296.54

10. Stability and reactivity

Stability /Polymerization : Stable

Reactive Hazard : None known, based on information available

Conditions to Avoid : Incompatible products.

Hazardous Polymerization : No information available

Hazardous Reactions : None under normal processing

Incompatibility (conditions to avoid) : High temperatures and contact with acids and oxidants.

Hazardous Decomposition Products : Nitrogen oxides, carbon dioxide and sulfur oxides.

Special Sensitivity: Dust may form explosive mixture with air at concentrations above 20 g/m3.

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 9043339509

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

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	Microto	Water Flea
Disulfiram	Not listed	LC50: = 0.187 mg/L, 96h semi-static (Poecilia reticulata)	Not listed	Not listed

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 9043339509

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

Product should be disposed of in an EPA approved incinerator in accordance with all local, state, and/or federal regulations.

US Superfund, reportable quantity 40 CFR 302.4 App. A, reportable quantity 1 lb. U403 RCRA Hazardous Constituents 40 CFR 261 App VIII, U403, 1 lb. reportable quantity Superfund Reportable Quantity Chemicals 40 CFR 302.4, 1 lb. reportable quantity.

Water pollution, hazardous substance designation, 40 CFR 116.4 Table A, 40 CFR 116.4 Table

14. Transport information

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.
(N,N,N',N'-tetraethyl-thioperoxydicarbonic diamide)

DOT Hazard Class: 9 CLASS 9

UN/NA Number: UN3077

Packing Group : III

Certification of : IIP (Indian Institute of Packaging)



LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name : Environmentally hazardous substance, solid, n.o.s.
(N,N,N',N'-tetraethyl-thioperoxydicarbonic diamide)

UN Number : 3077

Packing Group : III

Hazard Class : 9 - CLASS 9

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Environmentally hazardous substance, solid, n.o.s.
(N,N,N',N'-tetraethyl-thioperoxydicarbonic diamide)

EAST COAST ORGANICS PRIVATE LIMITED

Factory : 237/2, Vellivoyal Chavadi, Chennai – 600 103

Office Telephone No: 9043339509

UN Number: 3077 Packing Group: III

Hazard Class: 9 - CLASS 9 IATA Classification: 9

Additional Transport : Transport in accordance with local, state, and federal regulations.

Information: When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity

15. Regulatory information

United States of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification	TSCA - EPA Regulatory
Disulfira	97-77-8	X	ACTIV	-

Component	CAS-No	DSL	NDSL	EINECS	PICC	ENCS	AICS	IECSC	KECL
Disulfira	97-77-8	X	-	202-607-8	X	X	X	X	KE-03026

CERCLA/RCRA: Superfund, reportable quantity 40 CFR 302.4 App. A, reportable quantity 1 lb U403

SARA Title III, Section 313, NTP, IARC, 1910.119 Process Safety Management Propositions 65 (CA),

Clean Air : Not listed

WHMIS : Listed 1%

Subpart Z : Recently removed from list.

TSCA : All ingredients listed on the TSCA inventory.

Canadian DSL : All ingredients listed.

ECC Hazardous Substances Statements:

R 22 Harmful if swallowed.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S 22 Do not breathe dust.

S 24 Avoid contact with skin.

S 61 Avoid release to the environment.,

16. Other information

NE = Not Established NA = Not Applicable ND = Not Determined

IMPORTANT SAFETY NOTICE :

The information in the Material Safety Data Sheet relates only to the specific material(s) described herein and does not relate to use in combination with any other material or substance or in any process. We believe that the information contained herein is current as of the date of issue of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of this product are not within the control of Sovereign Chemical Company, it is the user's obligation to determine the conditions of safe use of the product. Users of this product should study this Material Safety Data Sheet and become aware of the product hazards and safety information before using the product. Users should also notify their employees, agents, and contractors of the information on this Material Safety Data Sheet and any product hazards and safety information in order to provide safe use of this product.