

# SAFETY DATA SHEET

(As per EC Regulation N° 453/2010)

## RUBATOR DTMT

### 1. PRODUCT IDENTIFICATION

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National Institute of Toxicology

**Commercial name:** RUBATOR DTMT

**Chemical name:** Tetramethylthiuram disulphide

**Synonyms:** TMTD, Tetramethylthiuram disulphide

**Formula:** C<sub>6</sub>H<sub>12</sub>S<sub>4</sub>N<sub>2</sub>

**CAS#** 137-26-8

**EC#** 205-286-2

**Annex VI (EC) 1272/2008 N°:** 006-005-00-4

**REACH Reg.:** NP ( Pre- reg 05-2114504762-54-0000 )

Identified uses: Accelerator for the rubber industry.

Uses advised against: NA

### 2. HAZARD IDENTIFICATION

**Classification as per  
Regulation (EC) n.1272/2008**

Acute toxic 4\*.  
STOT RE 2\*  
Eye irritant Cat. 2  
Skin irritant Cat. 2  
Skin sensitizer Cat. 1  
Acute aquatic Cat. 1  
Chronic aquatic Cat. 1

**Classification as per  
Dir 67/548/EEC**

Xi; R20/22-48/22  
Xi R36/38  
R43  
N; R50/53:

**Adverse effects:**

For the health:

Produces eye irritation with symptoms including redness, itching, pain and weeping.  
May cause an allergic skin reaction and may be absorbed through the skin with symptoms similar to those caused by inhalation and/or ingestion Prolonged exposure may cause skin defatting.  
If inhaled, the dust can cause respiratory tract irritation.  
Ingestion may cause alcohol intolerance May cause headache, dizziness, nausea, vomiting and gastrointestinal irritation. Discomfort may occur after a single ingestion of a relatively significant amount of product.

For the environment: May cause long term adverse effects in the aquatic environment.

**Label elements**

Pictograms



Signal word: **Atención / Warning**

## 2. HAZARD IDENTIFICATION (Cont.)

Hazard statements: H332: Harmful if inhaled  
H302: Harmful if swallowed  
H373: May cause damage to organs through prolonged or repeated exposure.  
H319: Causes serious eye irritation  
H315: Causes skin irritation  
H317: May cause an allergic skin reaction  
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:  
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.  
P273: Avoid release to the environment.  
P280: Wear protective gloves / clothing / eye / face protection.  
P302+P352: IF ON SKIN: Wash with plenty of soapy water  
P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing  
P501: Dispose of contents/container in accordance with national regulations.

**Other hazards:** Combustible product: There is the possibility of formation of dust clouds that could be explosive.

## 3. COMPOSITION

Component	CAS #	Range %
Tetramethylthiuram disulphide	137-26-8	> 97
White mineral oil	8042-47-5	1 - 2

## 4. FIRST AID MEASURES

**Inhalation:** Move the affected person to fresh air. If the person is not breathing administer artificial respiration. If breathing is difficult, give oxygen and seek immediate medical attention.

**Ingestion:** If swallowed seek immediate medical attention. Only induce vomiting at the strict instruction of a doctor. Never administer anything by mouth to an unconscious person.

**Contact with the skin:** Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water for at least 15 minutes. Wash contaminated clothing thoroughly before reuse. Seek medical attention.

**Contact with the eyes:** Flush immediately with plenty of water for at least 15 min. holding the eyelids open. Seek medical attention if irritation persists after washing. Remove contact lenses immediately if worn, unless they have adhered to eyes.

**Notes to Physician:** Provide supportive care and treatment based on the patient's reactions. Exposure by ingestion, inhalation or skin absorption may cause alcohol intolerance.

## 5. FIRE FIGHTING MEASURES

<b>Extinguishing media:</b>	Use water spray, foam or dry powder. To be avoided: The use of water jets
<b>Special recommendations:</b>	Fight fire from a safe distance and from a protected location. Use water spray to cool surfaces exposed to the fire. Avoid the presence of airborne dust because it is combustible. The decomposition of the product due to fire emits toxic gases. Avoid discharge into drains or watercourses.
<b>Protective equipment</b>	Fire-fighting personnel must wear approved protective clothing for fire fighting and self-contained breathing apparatus
<b>Additional hazards associated with the fire</b>	If the product burns, it emits toxic gases (carbon monoxide, sulphur and nitrogen oxides).

## 6. ACCIDENTAL RELEASE MEASURES

<b>Environmental precautions:</b>	Avoid discharge to sewers and public waterways. The product may cause long term adverse effects to the aquatic environment.
<b>Cleanup:</b>	Always use non sparking tools. Solid spillages are collected with shovels or other means and placed into sealed plastic bags or drums for later recycling or managed as waste.
<b>Personal precautions:</b>	Avoid direct contact with the product and keep nonessential personnel away. Ventilate closed spaces before entering. Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy.
<b>Personal protection:</b>	Use of safety goggles, gloves and protective clothing of a suitable material. Use of full-face protective mask with filter in the presence of dust

## 7. HANDLING & STORAGE

<b>Handling:</b>	Do not eat, drink or smoke while handling the product. Use appropriate protective equipment to avoid direct contact or inhalation of the product and avoid generating dust. Eliminate all ignition sources in the material handling area: sparks, flames, static electricity and other heat sources. Avoid contact with the skin, eyes and clothing. Reseal containers containing unused product. Wash hands with a neutral soap after handling work has finished. Handle the product in areas with efficient ventilation systems.
<b>Storage:</b>	Store the product in a cool, dry, well-ventilated area. Store protected from direct sunlight and away from strong oxidizers. Stored in locations equipped with fire fighting equipment. Incompatible Materials: Oxidizers and strong acids.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

<b>Exposure controls:</b>	Tetramethylthiuram disulphide: - Inhalable particulate: 5 mg/m <sup>3</sup> OSHA PEL/8-hr - Respirable particulate: 1 mg/m <sup>3</sup> OSHA PEL/8-hr
<b>DNELs calculated for workers</b>	No specific data available

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION (cont)

<b>Appropriate engineering controls</b>	Ensure adequate ventilation and extraction systems in the workplace. Have eye wash systems and showers in the workplace.
<b>Personal protective equipment:</b>	<u>Respiratory</u> : Full-face protective mask with filter if there is not adequate ventilation in the work area. <u>Eye</u> : Approved safety goggles <u>Skin</u> : Normal work clothing. Use gloves as a standard procedure. Any type of approved chemical resistant glove may be used
<b>Hygiene measures in the workplace</b>	Shower with hot water and soap at the end of the day. Do not use solvents for cleaning the body. Both clothing and equipment should be changed frequently and dry cleaned, check the condition of the gloves to avoid internal contamination and discard if signs of cuts or holes are detected. Use skin creams after work.

## 9. PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance</b>	Solid white colour	<b>Vapour pressure</b>	1.725 E-05 mm Hg at 25°C
<b>Odour</b>	Characteristic	<b>Vapour density</b>	NA
<b>pH</b>	N.A	<b>Relative density:</b>	1.42 g/cm <sup>3</sup>
<b>Melting point</b>	> 142 °C	<b>Solubility in water</b>	30 mg/l at 25 °C
<b>Boiling point</b>	Decomposes before boiling	<b>Partition coefficient n-octanol/water</b>	Log Pow = 1.82 ( estimated )
<b>Flash point</b>	approx. 150 °C (Cleveland, open cup )	<b>Autoignition temperature</b>	N.A
<b>Evaporation rate</b>	NA	<b>Decomposition temp.</b>	NA
<b>Flammability:</b>	N.A	<b>Viscosity</b>	NA
<b>Combustion properties:</b>	NA	<b>Explosive properties</b>	Explosion class: St2 Kst: 235 bar.m/s Lower explosive limit: 10 g/m <sup>3</sup> Minimum ignition energy:<10mJ LOC: 7.4 % vol. of oxygen
<b>Other properties of interest:</b>	Soluble in acetone, ether and chloroform.		

## 10. STABILITY & REACTIVITY

<b>Chemical stability:</b>	The product is stable when stored at room temperature in its original packaging. Stable under normal conditions of use, handling and transport.
<b>Conditions to avoid:</b>	Keep away from heat sources, sparks and flames. Also avoid contact with strong oxidizers.
<b>Incompatible Materials:</b>	Oxidizers and strong acids.
<b>Hazardous decomposition products:</b>	There are no known hazardous decomposition products. In case of combustion see section 5. During the vulcanization process traces of N-nitrosamines may be formed, suspected of being carcinogens arising from products of decomposition (amines) in the presence of nitrosating agents.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute oral toxicity LD<sub>50</sub> (mg/kg):</b>	1,080 mg/kg (rat)
<b>Acute dermal toxicity LD<sub>50</sub> (mg/kg):</b>	> 7,940 mg/kg (rabbit)
<b>Acute inhalation toxicity LC<sub>50</sub></b>	4.42 mg/l (rat)
<b>Organs affected/routes of exposure:</b>	Eyes, respiratory tract, skin / inhalation, contact.
<b>Ingestion:</b>	May cause alcohol intolerance. May cause headache, dizziness, nausea, vomiting and gastrointestinal irritation.
<b>Contact with the skin:</b>	May be absorbed through the skin and produce effects similar to those caused by ingestion and/or inhalation May cause an allergic skin reaction.
<b>Inhalation:</b>	Exposure to dust may cause irritation of the upper respiratory tract (mouth, nose and throat). As if swallowed or absorbed through the skin may cause alcohol intolerance.
<b>Contact with the eyes:</b>	May cause mild irritation to the eyes with symptoms typical of conjunctivitis: reddening, swelling, pain and tears.
<b>Medical conditions aggravated by exposure:</b>	Problems with alcohol consumption, skin disorders. The product or its emissions during use may cause sensitization effects or allergic reactions that may aggravate pre-existing systemic diseases.
<b>Carcinogenicity:</b>	Neither the product or any of the impurities/additives present in amounts exceeding 0.1% have been classified by NTP, IARC or OSHA as a carcinogen or suspected carcinogen. <i>Note : May react with nitrosating agents during rubber vulcanization to form nitrosamines. Some nitrosamines are suspected of being human carcinogens.</i> Inconclusive results in tests carried out in vivo with animals and in vitro with bacteria
<b>Genotoxicity:</b>	Negative or inconclusive results for gene activity in tests using animals and animal cells.
<b>Reproductive toxicity:</b>	Animal studies have produced some adverse effects: especially low birth weight. Chronic studies with the product indicate some reproductive effects on the blood and changes in weight of certain organs.
<b>Other information of interest:</b>	The product generates fumes during the vulcanization process which can cause eye, skin and respiratory sensitization.

## 12. ECOLOGICAL INFORMATION

<b>Toxicity to fish:</b>	96h-LC <sub>50</sub> (Oncorhynchus mykiss): 0.13 mg/l 96h-LC <sub>50</sub> (Lepomis macrochirus): 0.13 mg/l 96h-LC <sub>50</sub> (Pimephales promelas): 0.27 mg/l
<b>Toxicity to algae:</b>	96h-IC <sub>50</sub> (Chlorella pyrenoidosa): 1.0 mg/l
<b>Toxicity to invertebrates:</b>	48h-EC <sub>50</sub> (Daphnia magna): 0.24 mg/l
<b>Toxicity to bacteria:</b>	15 min - EC <sub>50</sub> : 1.9 mg/l ( Photobacterium phosphoreum )
<b>Degradability:</b>	<u>Abiotic</u> : Hydrolysis under acidic conditions (50% in 9.5 hr. at pH 3.5, in 108 hr at pH 5.7 and in 1123 hr. at pH.7.0) <u>Biotic</u> : Product not readily biodegradable.
<b>Persistence and bioaccumulation</b>	Tests carried out indicate a low potential for bioaccumulation and persistence in the environment.

### 13. DISPOSAL CONSIDERATIONS

<b>For the product:</b>	Recycle the product whenever possible. If reuse is not possible, dissolve or mix the material with a combustible solvent and burn in an incinerator equipped with an appropriate gas treatment system. In any case, avoid discharge into the environment in an uncontrolled way.
<b>Contaminated containers</b>	Manage as HW as per the laws of the country concerned. Do not reuse the used containers.
<b>Handling:</b>	Use properly sealed and labelled containers. Used containers should be handled so as not to generate dust during collection, transportation and final disposal.
<b>General Provisions:</b>	The establishments and companies engaged in the recovery, disposal, collection or transportation of waste should comply with European regulations on waste management or other local, regional or national regulations in force.

### 14. TRANSPORT INFORMATION

<b>Land transport:</b>	
<b>ADR/RID class:</b>	9
<b>Hazard ID N°:</b>	90
<b>Packaging group:</b>	III
<b>Substance ID N°:</b>	3077
<b>UN N°:</b>	UN 3077
<b>“Hazard label”</b>	Hazardous for the environment:
<b>Proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
<b>Additional information:</b>	<a href="http://www.unece.org/trans/danger/publi/adr/adr_linguistic_e.htm">http://www.unece.org/trans/danger/publi/adr/adr_linguistic_e.htm</a>
<b>Sea transport:</b>	
<b>IMO/IMDG class:</b>	9
<b>Packaging group:</b>	III
<b>UN N°:</b>	UN 3077
<b>EMS:</b>	F-A, S-F
<b>“Hazard label”:</b>	Hazardous for the environment:
<b>Proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
<b>Air transport:</b>	
<b>ICAO-TI/IATA-DGR class:</b>	9
<b>Packaging group:</b>	III
<b>UN N°:</b>	UN 3077
<b>Proper shipping name:</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S

### 15. REGULATORY INFORMATION

<b>Classification and labelling:</b>	See Section 2 of this MSDS which indicates the hazard and precautionary statements.
<b>Regulation (EC) 1907/2006</b>	Registered N°: NP ( <i>Pre- reg 05-2114504762-54-0000</i> )
<b>Other regulations:</b>	The product is listed in the following inventories: USA (TSCA), Canada (DSL), EU (EINECS), Japan (ENCS), Korea (ECL), Australia (AICS), New Zealand (NZ), Philippines (PICCS), China (CLECS).  Regulated for use in rubber products in contact with food, as per US FDA 21 CFR 177.2600 For use as a component of adhesives, as per: US FDA 21 CFR 175,105  Product covered by Seveso Dir. Category 9i
<b>Chemical safety assessment:</b>	N.A

## 16. OTHER INFORMATION

**Legislation applicable to the material safety data sheets:** This MSDS has been prepared in accordance with Regulation (EC) No. 453/2010 developed in Annex II "Guide to the Compilation of Safety Data Sheets" of Regulation (EC) No. 1907/2006 (REACH).

**Text for the hazard statements (H phrases) referred to in section 2**

- H332: Harmful if inhaled
- H302: Harmful if swallowed
- H373: May cause damage to organs through prolonged or repeated exposure.
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- H315: Causes skin irritation
- H317: May cause an allergic skin reaction
- H410: Very toxic to aquatic life with long lasting effects.

**Background:**

- Date of issue: 1<sup>st</sup> December 2010
- Revision: N°1 in accordance with Regulation (EC) 453/2010
- Prepared by: GENERAL QUIMICA,S.A. Technical Services Dept.

The information contained in this Safety Data Sheet relates only to the product mentioned in section 1 not necessarily being applicable to other products of a similar chemical nature. The information represents our best information at this time and is provided in good faith without implying any type of guarantee. It is the user's responsibility to ensure that the information is suitable and complete for the specific use to which the substance will be applied.

End of the MSDS