1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 2-MERCAPTOBENZOTHIAZOLE
Company Identification: 237/2, Vellivoyal Chavadi
Chennai – 600 103. Tamilnadu
Office Telephone No: 044-64606747

2. COMPOSITION / INFORMATION OF INGREDIENTS

Chemical description: 2-MERCAPTOBENZOTHIAZOLE

<table>
<thead>
<tr>
<th>CHEMICAL NAME CAS NO.</th>
<th>CAS NO.</th>
<th>EINECS NO.</th>
<th>WT%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-MERCAPTOBENZOTHIAZOLE</td>
<td>149-30-4</td>
<td>205-736-8</td>
<td>&gt; 98</td>
</tr>
</tbody>
</table>

3. HAZARD IDENTIFICATION

Classification according to EU directives 67/548/EEC or 1999/45/EC
Xi Irritant
N
R43
R50/53

Classification of the substance or mixture:
REGULATION (EC) No. 1272/2008
Skin sensitizer Cat. 1
Acute aquatic Cat. 1
Chronic aquatic Cat. 1

Label elements:
Hazard Statements
H317 May cause an allergic skin reaction
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements Prevention
P262 Avoid contact with the skin, eyes and clothing.
P280 Wear protective gloves / clothing / eye / face protection.
P273 Avoid release to the environment

Precautionary Statements Response
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
4. **FIRST AID MEASURES**

Inhalation
Move the affected person to fresh air. If breathing is difficult, give oxygen and seek immediate medical attention.

Skin Contact :
Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water. Seek medical attention if irritation persists. Wash contaminated clothing thoroughly before reuse.

Eye Contact :
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.

Ingestion :
Seek immediate medical attention. Do not induce vomiting unless told to do so by a poison control centre or doctor. Never administer anything by mouth to an unconscious person.

5. **FIRE FIGHTING MEASURES**

Extinguishing Media:
Combustible material, Dust may form explosive mixture in air Heating can release hazardous gases: (carbon monoxide and dioxide, oxides of sulphur and of nitrogen).

Special hazards arising from the substance or mixture:

Protective Equipment and Precautions for Firefighters
Cool containers / tanks with water spray Keep product and empty container away from heat and sources of ignition
Do not flush into surface water or sanitary sewer system Prevent product from entering drains Collect contaminated fire extinguishing water separately. This must not be discharged into drains

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures:
Avoid direct contact with the product and inhalation of vapours from the hot product. Keep nonessential personnel away. Ventilate closed spaces before entering. Use of safety goggles, gloves and protective clothing of a suitable material.
Use of respiratory protective mask with filter in the
Environmental precautions: Avoid discharge to sewers and public water ways. The product may cause long term adverse effects to the aquatic environment.

Methods and material for containment and cleaning up: Solid spillages are collected with shovels or other means and placed into sealed plastic bags or drums for later recycling or managed as waste.

7. HANDLING AND STORAGE

Precautions for safe handling: 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.

Conditions for safe storage, including any incompatibilities & Storage: Store the product in a cool, dry, well-ventilated area. Stored in locations equipped with fire fighting equipment. Incompatible Materials: Strong reducing agents, oxidizers, strong acids and alkalis.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters: Particulates not otherwise classified (PNOC): Inhalable particulate: 10 mg/m3, Respirable particulate: 3 mg/m3

Exposure controls: Engineering Controls: Ensure adequate ventilation and extraction systems in the workplace. Have eye wash systems and showers in the workplace.

Personal Protective Equipment: Eye/face Protection: Tightly fitting safety goggles. Full-face protective mask with filter.

Skin Protection: Gloves (rubber, neoprene). Long sleeve overall and appropriate footwear to avoid contact with skin.

Body Protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. The suitability for a specific work place should be discussed with the producers of the protective gloves.

Environmental exposure controls: Prevent product from entering drains. Do not contaminate surface water. Avoid subsoil penetration.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Solid
Colour: light cream colour
Odour: Slightly aromatic
pH-value: NA
Melting point/Melting range: 164-179 ºC
Boiling point/Boiling range: Decomposes before boiling
Flash point: >250ºC (Cleveland Open Cup)
Explosive propertive: Explosion class: St2 Kst: 195-283 bar.m/s
Lower explosive limit: 30 – 40
Flammability (solid, gas): Non-flammable
Vapour pressure: 1.35*10^-9 hPa at 25ºC
Specific gravity: 1.54 g/cm3
Vapour Density: NA
Solubility: In water 0.27 - 0.37 mg/l at 21ºC and pH 7
Partition coefficient: Log Pow: 4.5 at pH 7
Auto-ignition temperature: 440 - 460ºC (for powder)
Viscosity @25°C: NA

10. STABILITY AND REACTIVITY

Reactivity: See Incompatible Materials
Chemical stability: Stable under recommended storage and handling conditions
Possibility of hazardous reactions: See Incompatible Materials
Conditions to avoid: Avoid dust formation: Keep away from heat and sources of ignition. Take precautionary measures against static discharges.

Incompatible materials: Strong acids and alkalies. Oxidizing agents
Hazardous decomposition products: Through thermal decomposition (T> 250ºC) it may generate amines (aniline), hydrogen sulphide and by-products of mercaptans.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (LD50/oral/rat): > 7,940 mg/kg
Acute dermal toxicity (LD50/dermal/rabbit): > 7,940 mg/kg
Inhalation:
Skin irritation / sensitisation: Non irritant. Tests conducted on rabbits and human volunteers indicate that the product is not irritating to the skin, however it can cause sensitization and allergic reaction on the skin as shown by tests done on guinea pigs.
Reproductive toxicity: No evidence of teratogenicity in animal studies using rats, mice and hamsters.

Eye irritation: May cause slight irritation to the eyes but not enough to be classified as an irritant.

Germ cell mutagenicity: Not mutagenic in tests done in vitro and in vivo.

Carcinogenicity: Negative in standard in vitro tests. 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.

12. ECOLOGICAL INFORMATION

Eco toxicity: Toxicity to fish: 96h-LC50 (Lepomis macrochirus): 82 mg/l 
96h-LC50 (Oncorhynchus mykiss): 66 mg/l 
96h-LC50 (Pimephales promelas): >1,000 mg/l 
LC50: 0.0097 - 1.70 mg/L 
EC50/48h/daphnia magna: 82 mg/l 
EC50/96h (Selenastrum capricornutum)/ algae: 0.7 mg/l
Toxicity to bacteria: IC50: 19.20 mg/l

Mobility in soil: Minimum

Persistence and degradability: Abiotic: The product is degraded by hydrolysis (37% in 7 days at pH 7) and photolysis (breakdown by photolysis in water: 50% in 3.1 h). Biotic: Product not readily biodegradable.

Bio accumulative potential: The tests performed with the material indicate that the product is not bio accumulative (BCF<51).

Results of PBT and vPvB assessment: The product does not meet the criteria to be considered PBT or vPvB.

13. DISPOSAL CONSIDERATIONS

Waste Disposal methods
Product: 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.

Contaminated Packing: Manage contaminated containers as dangerous waste under the laws of the country concerned. Use properly sealed and labeled containers. Used containers should be handled so as not to generate dust during collection, transportation and final disposal.
14. TRANSPORT INFORMATION

Road transport (ADR/RID/ADN)
ADR/RID Class 9
UN-No 3077
Packing Group III
Proper Shipping Name Environmentally hazardous substance, solid, N.O.S (2- Mercaptobenzothiazole)

Sea transport (IMDG)
ADR/RID Class 9
UN-No 3077
Packing Group III
Marine pollutant YES
Proper Shipping Name Environmentally hazardous substance, solid, N.O.S (2- Mercaptobenzothiazole)

Air transport (ICAO-TI/IATA)
ADR/RID Class 9
UN-No 3077
Packing Group III
Proper Shipping Name Environmentally hazardous substance, solid, N.O.S (2- Mercaptobenzothiazole)

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation 1907/2006 REGULATION (EC) No 1272/2008 Classification according to EU directives 67/548/EEC or 1999/45/EC
Chemical safety assessment:
No data available

16. OTHER INFORMATION

Emergency seek Medical Aid