



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

Signal Word

Warning

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

P314 - Get medical advice/attention if you feel unwell

P331 Do NOT induce vomiting.

P332 + P313 IF SKIN irritation occurs: Get medical advice/attention.

Precautionary statements

Storage

P403 Store in a well-ventilated place.

P410 Protect from sunlight.

Precautionary statements

Disposal

P501: Dispose of contents/container in accordance with national regulations.

2.3 Other hazards:

PBT and vPvB assessment

The product does not meet the criteria to be considered PBT or vPvB.

Other hazards which do not result in classification

The potential of creating an explosive dust cloud exists.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical description:

Zinc 2-mercaptobenzothiazole(Active ingredient)

Composition/Information on ingredients

Chemical Name	CAS No.	EC No.	Annex 1 Index Number	Weight %
Zinc 2- Mercaptobenzothiazole	155-04-4	205-840-3	---	> 93
Mercaptobenzothiazole	149-30-4	205-736-8	---	>1



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

SECTION 4: FIRST AID MEASURES

4.1 Description of first-aid measures

General Advice	If symptoms persist, call a physician. Show this material safety data sheet to the doctor in attendance. Treat symptomatically. Use of alcoholic beverages may enhance toxic effects. In case of allergic reaction after exposure, any future exposure must be avoided.
Inhalation	Move the affected person to fresh air. If breathing is difficult, give oxygen and seek immediate medical attention.
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.
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.
Notes to Physician	Provide supportive care and treatment based on the patient's reactions. Give special attention to breathing difficulties.

4.2 Most important symptoms and effects, both acute and delayed

No information available

4.3 Indication of immediate medical attention and special treatment needed

No information available

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media Use water spray, carbon dioxide, foam or dry powder.

5.2 Specific hazards arising from the substance or mixture

Specific hazards	If the product burns, it emits toxic gases (carbon monoxide and dioxide, oxides of sulphur and of nitrogen) and flying ash containing zinc oxide.
Specific methods	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. Avoid discharge into drains or watercourses.



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

5.3 Protective Equipment and Precautions for Firefighters

Fire-fighting personnel must wear approved protective clothing for fire fighting and self-contained breathing apparatus

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 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 presence of dust and self-contained breathing apparatus in the presence of vapours from the hot product.

6.2 Environmental precautions

Avoid discharge to sewers and public waterways. The product may cause long term adverse effects to the aquatic environment.

6.3 Methods and materials 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.

6.4 Reference to other sections

See section 7,8 &13

SECTION 7: HANDLING AND STORAGE

7.1 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.

7.2 Conditions for safe storage, including any incompatibilities

Store the product in a cool, dry, well-ventilated area.
Stored in locations equipped with fire fighting equipment.
Incompatible Materials: Oxidizers, strong acids and alkalis.

7.3 Specific end uses

No further relevant information available.



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

DNELs calculated for workers

- Acute dermal: 12 mg/kg body weight/day
- Acute Inhalation: 21 mg/m³
- Chronic dermal: 6 mg/kg body weight/day
- Chronic Inhalation: 10.5 mg/m³

The product is a moderate skin sensitizer for which has not been possible to establish a dose response relationship.

2.2 Exposure controls

Exposure controls:

Particulates not otherwise classified (PNO):

- Inhalable particulate: 10 mg/m³
- Respirable particulate: 3 mg/m³

Appropriate engineering controls

Ensure adequate ventilation and extraction systems in the workplace. Have eye wash systems and showers in the workplace.

Personal protective equipment

Respiratory: Full-face protective mask with filter.

Eye: Approved safety goggles

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

Hygiene measures in the Workplace

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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Solid powder
Colour	Pale yellow
Vapour pressure	2.53*10 ⁻⁶ hPa at 25°C
Odour	Pungent characteristic
Vapour density	No data available
pH	No data available
Relative density	1.63 g/cm ³
Melting point	> 300 °C
Solubility in water	20.6 mg/l at 25°C and pH 7. (pKa for the MBT as a weak acid of 7.03 at 20°C)



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

Boiling point	Decomposes before boiling
Partition coefficient n-octanol/water	Log Pow: 5.02
Flash point	>350°C (Cleveland Open Cup)
Autoignition temperature	628 °C (for powder)
Evaporation rate	NA
Decomposition temperature	> 350°C
Flammability	Non-flammable
Viscosity	No data available
Combustion properties	No data available
Explosive properties	Explosion class: St1 Kst: 185 bar.m/s Lower explosive limit: 20 – 30g/m ³

9.2 Other information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

See Incompatible Materials

10.2 Chemical Stability

The product is stable when stored at room temperature in its original packaging. Stable under normal conditions of use, handling and transport.

10.3 Possibility of hazardous reactions

See Incompatible Materials

10.4 Conditions to Avoid

Keep away from heat sources, sparks and flames.

10.5 Incompatible materials to avoid

Oxidizing agents, strong acids and alkalis.

10.6 Hazardous Decomposition Products

Thermal decomposition may generate amines (aniline), hydrogen sulphide and mercaptan byproducts. In case of combustion see section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (mg/kg)

3,800 mg/kg (rat)

Acute dermal toxicity LD50 (mg/kg)

> 7,940 mg/kg (rabbit)

Organs affected/routes of exposure

Eyes, respiratory tract / Inhalation, contact.

Ingestion

The product is slightly toxic if ingested. Ingestion of large amounts of product is not expected to cause significant health problems. The extremely bitter taste of the product makes accidental ingestion unlikely.



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

Skin contact	Slightly irritating to skin. May cause an allergic skin reaction. Symptoms from prolonged exposure may include skin rash, itching and dry skin patches.
Inhalation	May cause mild irritation of the upper respiratory tract (mouth, nose and throat). Symptoms may include pain in the nose and throat, coughing and sneezing repeatedly.
Eye contact	May cause mild eye irritation with the typical symptoms of redness, swelling, eye pain and tears.
Medical conditions aggravated by exposure	Skin and lung diseases. The product or its emissions during use may cause sensitization effects or allergic reactions in susceptible individuals that may aggravate pre-existing systemic diseases.
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. Carcinogenicity tests with oral administration of the product in rats and mice did not reveal tumours that could be relevant for humans.
Genotoxicity	Not mutagenic in tests done in vitro and in vivo.
Reproductive toxicity	No evidence of teratogenicity in animal studies using rats, mice and hamsters. No birth defects have been observed in various studies performed using different laboratory animals.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Toxicity to fish

96h-LC50 (Lepomis macrochirus): 1.5 mg/l
 96h-LC50 (Oncorhynchus mykiss): 0.75 mg/l
 96h-LC50 (Pimephales promelas): 11 mg/l

Toxicity to algae

96h-IC50 (Selenastrum capricornutum): 0.25 mg/l

Toxicity to invertebrates

48h-EC50 (Daphnia magna): 4.1 mg/l

12.2.1 Mobility in soil

No data available

12.3 Persistence and degradability

Abiotic: The product is rapidly degraded by hydrolysis (87% in 7 days at pH 7, 60% in 2 h at pH 6.5 and in an oxygen rich environment) and Photolysis (breakdown by photolysis in water: 50% in 31 min, 86% in 90 min through direct photolysis).

Biotic: Product not readily biodegradable.

12.4 Bioaccumulative Potential

Not bioaccumulative



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

12.5 Results of PBT and vPvB assessment

The product does not meet the criteria to be considered PBT or vPvB.

Other adverse effects

None known based on information supplied

12.6 Other information

Do not discharge product unmonitored into the environment

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

For the 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 containers

Manage as dangerous waste under the laws of the country concerned.

SECTION 14: TRANSPORT INFORMATION

14.1 Road transport (ADR/RID/ADN)

ADR/RID class	9
Hazardous label	Hazardous for the environment
Packaging group	III
UN No.	3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S

14.2 Sea transport (IMDG)

IMO/IMDG class	9
Packaging group	III
UN No.	UN 3077
EMS	F-A, S-F
Marine Pollutant	yes
Hazardous label	Hazardous for the environment
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S

14.3 Air transport (ICAO-TI/IATA)

Class	9
Packaging group	III
UN No.	UN 3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S

SECTION 15: REGULATORY INFORMATION

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



MERCHEM LIMITED

SAFETY DATA SHEET

MERCURE ZMBT
MSDS No. 06/20.03.2015

Regulation 1907/2006 REGULATION (EC) No 1272/2008

Other regulations:

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 rubber articles intended for repeated use in contact with food, as per
US FDA 21 CFR 177.2600
Regulated as a component of adhesives according to U.S. FDA 21 CFR 175.105.
Regulated use in animal glues according to U.S. FDA 21 CFR 178.3120.
Product covered by Seveso Directive. Category 9i

15.2 Chemical safety assessment:

No data available .

SECTION 16: OTHER INFORMATION

Issue No.	2
Issue date	20.03.2015
Revision No.	0
Reason for revision	Reviewed & revamped based on the guide lines of Regulation (EC) No 1907/2006)

Classification of dangerous substance directive (67/548/EEC)

Xi Irritant
N Dangerous for the environment
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment .
R43 - May cause sensitization by skin contact

Training advice

Provide adequate information, instruction and training to operators

Further information for the material safety data sheet

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 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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

End of Material Safety Data Sheet