Chemical

Rubator ZMBT

Safety Data Sheet – July 2016

According to Regulation EC No 1907/2006 - REACH and Regulation EC No 1272/2008 - CLP

S1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1. Product identifier

Commercial name	Rubator ZMBT
Chemical name	Zinc bis(benzothiazole-2-thiolate)
CAS Nº	155-04-4
EC (EINECS) Nº	205-840-3
Annex VI (EC) 1272/2008 Nº	Not listed
REACH register number	01-2119493020-50-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Application	Vulcanization accelerator for the rubber industry
Type of use	Industrial and/or professional
Sectors of use	SU3: Industrial use. Use of substances as such or in preparations at industrial sites; SU10: Formulation (mixing) of preparations and/or re-packaging (excluding alloys); SU11: Manufacture of rubber products; SU12: Manufacture of plastic products, including compounding and conversion; SU22: Professional uses: Public domain (Administration, education, entertainment, services, craftsmen).
Product category	PC32: Polymer preparations and compounds: Production of tyres and general rubber goods.

1.3. Details of the supplier of the safety data sheet

Company	GENERAL QUÍMICA, S.A.U.
Address	Ctra. Miranda de Ebro-Puentelarrá, km. 4. 01213 Lantarón (Álava); ESPAÑA
Phone	(+34) 945 332 145
Fax	(+34) 945 332 888
e-mail address	SDSgequisa@repsol.com
Date	July 2016
Modification date	-
Revision number	-

1.4. Emergency telephone number

Emergency telephone number 24h Santander (Spain)	(+34) 911 142 520
Emergency telephone number 24h Altamira (Mexico)	(+44) (0) 1235 239 670

S2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

- Skin sensitizer cat. 1
- Chronic aquatic cat. 1

Classification as per Dir 67/548/EEC

- Xi: Irritating (R43).
- N: Dangerous for the environment (R50/53).

2.2. Label elements

Pictograms

Signal word

- Attention/Warning

Hazardous statements

- H317: May cause an allergic skin reaction
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P262: Avoid contact with the skin, eyes and clothing.
- P280: Wear protective gloves/clothing/eye/face protection.
- P501: Dispose of contents/container in accordance with national regulations.
- P273: Avoid release to the environment.

2.3. Other hazards

Possible formation of explosive dust clouds.
The substance does not meet the criteria to be considered PBT or vPvB.

S3 COMPOSITION/INFORMATION ON INGREDIENTS

Zinc bis (1,3-benzothiazole-2-thiolate) (ZMBT)	
Clasification Reg. (CE) 1272/2008	Concentration (%)
• Skin sensitizer cat. 1; H317 • Chronic aquatic cat. 1; H410	>80 % p/p

2-Mercaptobenzothiazole			
Clasification Reg. (CE) 1272/2008	No. CAS	No. CE	Concentration (%)
• Skin sensitizer cat. 1; H317 • Acute aquatic cat. 1; H400 • Chronic aquatic cat. 1; H410	149-30-4	205-736-8	< 20 % p/p

S4 FIRST AID MEASURES

4.1. – 4.2 Description of the first aid measures and most important symptoms and effects, both acute and delayed

Inhalation

- Remove affected person to fresh air.
- If breathing is difficult, administer oxygen and provide immediate medical care.

Ingestion/aspiration

- 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.

Contact with the skin

- 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.

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.
- If worn, remove contact lenses immediately, unless they have adhered to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Administer treatment according to the patient's symptoms. Give special attention to breathing difficulties.

S5 FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

- Use water spray, carbon dioxide, foam or dry powder.

Unsuitable extinguishing media

- Avoid using water jets as much as possible.

5.2. Special hazards arising from the substance or mixture

If the product burns, it emits toxic gases (carbon monoxide and dioxide, oxides of sulphur and of nitrogen) and airborne zinc oxide ashes.

5.3. Advice for firefighters

- Attack the fire from a safe distance and protected area. Use water spray to cool surfaces exposed to the fire. Avoid the presence of airborne dust because it is combustible.
- Fire-fighting personnel must wear approved protective clothing for firefighting and self-contained breathing apparatus

S6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

- Avoid direct contact with the product and do not inhale fumes from the hot product.
- Keep non-essential personnel away. Ventilate closed spaces before entering.

Personal protection

- 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 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.

6.4. Reference to other sections

No additional reference

S7 HANDLING AND STORAGE

7.1. Precautions for safe handling

General precautions

- Do not smoke, eat or drink 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 or other sources of heat.

Specific conditions

- Avoid contact with the skin, eyes and clothing. Reseal containers containing unused product. Wash hands with a mild soap once work has finished.
- Handle the product in areas with efficient ventilation systems.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

- Store the product in cool, dry, well-ventilated areas.
- Store in locations equipped with firefighting equipment.

Incompatible materials

- Strong reducers, oxidizers, acids and strong alkalis.

7.3. Specific end use(s)

No additional information

S8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limit values

Particulates not otherwise classified (PNOC):

- Inhalable particulate: 10 mg/m^3
- Respirable particulate: 3 mg/m^3

DNELs calculated for workers

- Acute dermal: 12 mg/kg body weight/day
- Acute inhalation: 21 mg/m^3
- Chronic dermal: 6 mg/kg body weight/day
- Chronic inhalation: 10.5 mg/m^3

The product is a moderate skin sensitizer for which a dose-response threshold has not been established.

Established PNEC values for substance

- Freshwater: 0,0041 mg/L
- Sea water: 0,00041 mg/L
- Sediments in freshwater: 0,032 mg/kg w.w.
- Marine sediments: 0,0032 mg/kg w.w.
- Soil: 0,0239 mg/kg w.w.
- STP: 0,3 mg/L

8.2. Exposure controls

Appropriate technical controls

- Provide adequate ventilation and extraction systems in the workplace.
- Have eyewash systems and showers in the workplace.

Individual protection measures, such as personal protective equipment

Respiratory protection

- Full-face protective mask with filter.

Skin protection

- Gloves (rubber, neoprene, PVC). Long sleeve overall and appropriate footwear to avoid contact with skin.

Eye/face protection

- Approved safety goggles.

Other protective equipment

- Showers and eye-washers in the work area.

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.

S9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Solid with pale yellow colour
Odour	Characteristic acrid odour
pH	Not applicable
Melting point/freezing point	>300 ºC
Initial boiling point and boiling range	Decomposes before boiling
Flash point	>350 ºC (Cleveland, open cup)
Evaporation rate	Not applicable
Flammability	Non-flammable
Upper/lower limits of flammability/explosiveness	See Section 9.2
Vapour pressure	$2.53*10^{-6}$ hPa at 25ºC
Vapour density	Not applicable
Relative density	1.63 gr/cm^3
Solubility (es)	In water: 20.6 mg/l at 25ºC and pH 7. (pKa for MBT as weak acid: 7,03 at 20ºC)
Partition coefficient n-octanol/water	Log Pow: 5.02
Auto-ignition temperature	628 ºC (for powder)
Decomposition temperature	>350 ºC
Viscosity	Not applicable
Oxidising properties	Not relevant

9.2. Other information

Explosive properties	• Explosion class: St1 • Kst: 185 bar.m/s • Lower explosive limit: 20 - 30 g/m^3

S10 STABILITY AND REACTIVITY

10.1. Reactivity

Stable product without reactivity issues in normal conditions.

10.2. Chemical stability

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

10.3 Possibility of hazardous reactions

They have not been described.

10.4. Conditions to avoid

Keep away from heat, sparks and flames.

10.5. Incompatible materials

Oxidants, acids, strong alkaline substances. Rubator ZMBT is an organic complex and its aqueous solution is a balance between the weak base Zn (OH)2 and weak MBT acid

10.6. Hazardous decomposition products

Its thermal decomposition (T > 250ºC) may produce amines (aniline), hydrogen sulphur and mercaptan by-products. In case of combustion, see section 5.

S11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity (ingestion)	LD50: 3.800 mg/kg (rat)
Acute toxicity (dermal)	LD50: >7.940 mg/kg (rabbit)
Ingestion	Product toxicity is low when ingested. Ingesting significant product amounts does not cause serious health damage. It´s extremely bitter taste makes it unprovable to be accidentally ingested.
Skin corrosion/irritation	The product is a slightly irritating to the skin. May cause an allergic skin reaction. Symptoms may include skin rash, itching and local dryness in case of long exposure.
Serious eye damage/irritation	May cause mild eye irritation with symptoms typical of redness, swelling, ocular pain and tears.
Respiratory or skin sensitization	It may cause slight irritation on the upper respiratory tract (mouth, nose and throat). Symptoms may include sore nose and throat, coughing and repeated sneezing.
Mutagenicity	No mutagenic in vitro and in vivo tests.
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 tumors that could be relevant for humans.
Reproductive toxicity	No evidence of teratogenicity in animal studies using rats, mice and hamsters. No birth defects have been observed in several tests made in different laboratory animals.
STOT-single exposure	They have not been described
STOT-repeated exposure	They have not been described
Other information of interest	Skin and eye irritation tests in humans (Patch testing method): "EU skin irritation scores": redness: 0.5; Inflammation: 0.5 (slightly irritating) "EU eye irritation score": Conjuctival redness: 0.4; Conjuctival inflammation: 0.1; Iris damage: 0.0; Cornea opacity: 0.0 (slightly irritant but note enough as to be classified as so). It may cause sensitization by long-lasting or repeated skin contact (Maximization tests in guinea pigs).

S12 ECOLOGICAL INFORMATION

12.1. Toxicity

Fish

- 96h-LC_{50} (Lepomis macrochirus): 1,5 mg/l
- 96h-LC_{50} (Oncorhynchus mykiss): 0,75 mg/l
- 96h-LC_{50} (Pimephales promelas): 11 mg/l

Algae

- 96h-IC_{50} (Selenastrum capricornutum): 0,25 mg/l

Invertebrates

- 48h-EC_{50} (Daphnia magna): 4,1 mg/l

12.2. Persistence and degradability

Abiotic

- Product degrades in hydrolysis (87 % in 7 days with pH 7;60 % in 2 h. a pH 6.5 in oxygen-rich environment) and photolysis (water photolysis degradation: 50 % in 31 min.; 86 % in 90 min. by direct photolysis).

Biotic

- Product not easily biodegradable.

12.3. Bioaccumulative potential

Tests performed on the material state that the product has not bioaccumulation capability.

12.4. Mobility in soil

ZMBT distribution in the different environmental compartments has been calculated by means of Level I Mackay's Fugacity Model based on physical-chemical properties. The target compartments for ZMBT are water with 46,75 %; sediments with 47,17 % and soil with 5.65 %

12.5. Results of PBT and vPvB assessment

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

12.6. Other adverse effects

No additional data.

S13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

For the product

- Recycle the product whenever possible. It is not possible to reuse, dissolve or mix the material with a combustible solvent and burn it in an incinerator with an adequate gas treatment system.
- In any case, avoid discharge into the environment in an uncontrolled manner.

Handling

- Use properly sealed and labelled containers. Used containers should be handled so as not to generate dust during collection, transportation and final disposal.

Contaminated containers

- Manage as HW under the laws of the country concerned.

General Provisions

- 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.

S14 TRANSPORT INFORMATION

14.1, 14.2, 14.3, 14.4 y 14.5

Land transport

- UN No. : 3077
- Proper shipping name: environmentally hazardous substance, solid, N.O.S. (Zinc di (benzothiazol-2-yl) disulphide)
- ADR/RID class: 9
- ID number Hazard: 90
- Packaging group: III
- Dangerous for the environment: YES
- Hazard label: Dangerous for the environment

Sea transport

- UN No. : 3077
- Proper shipping name: environmentally hazardous substance, solid, N.O.S. (Zinc di (benzothiazol-2-yl) disulphide). Marine pollutant
- IMO/IMDG class: 9
- EMS: F-A, S-F
- Packaging group: III
- Dangerous for the environment: YES
- Hazard label: Dangerous for the environment

Air transport

- UN No. : 3077
- Proper shipping name: environmentally hazardous substance, solid, N.O.S. (Zinc di (benzothiazol-2-yl) disulphide)
- ICAO-TI/IATA-DGR class: 9
- Packaging group: III
- Dangerous for the environment: YES
- Hazard label: Dangerous for the environment

14.6. Transport in bulk in accordance with appendix II of the Marpol agreement 73/78 and the IBC code

Not applicable.

14.7. Special precautions for user

Avoid direct contact with the product and dispersing it in the environment.

S15 REGULATORY INFORMATION

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

Classification and labelling

- See Section 2 of this MSDS where the hazard and precautionary statements are given.

Regulation (EC) 1907/2006

- Registered Nº: 01-2119493020-50-0000

Other regulations

- The product is listed in the following inventories: USA (TSCA), Canada (DSL), UE (EINECS), Japan (ENCS), Korea (ECL), Australia (AICS), New Zealand (NZ), Philippines (PICCS), China (CLECS).
- Regulated for use in rubber products in contact with food according to standard US FDA 21 CFR 177.2600
- Regulated as a component in adhesives in compliance with US FDA 21 CFR 175.105
- Regulated use in animal tails in compliance with US FDA 21 CFR 178.3120
- Based on the product self-classification and the relatively high content of MBT, the product must be considered affected by Seveso Dir. (Dir. 2012/18/UE). Category E1

15.2. Chemical safety assessment

Both the chemical safety reports as well as the guide for safe use are included in the registration dossier submitted to ECHA. Annex with exposition scenarios is included.

S16 Other information

Legislation applicable to the material safety data sheets

This SDS has been made in compliance with Reg. (EU) 2015/830 that modifies Annex II-Guide for the elaboration of Safety Data Sheets of Regulation (EC) 1907/2006 (REACH).

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

- H317: May cause an allergic skin reaction
- H410: Very toxic to aquatic life with long lasting effects.

Aclaration

The information given in this document has been compiled based on the best existing information sources, latest available knowledge and according to the current requirements on classification, packaging and labelling of hazardous substances. It does not imply the information is exhaustive or accurate in all cases. It is the user's responsibility to determine the validity of the information contained in this Material Safety Data Sheet to apply depending on the case.