



## MATERIAL SAFETY DATA SHEET

### ANCHOR ZMBT EUROPEAN

#### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

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Product name: Anchor ZMBT European  
Product Label Name: Zinc-2-mercaptobenzothiazole, 2-Mercaptobenzothiazole  
Intended Use: Vulcanisation accelerator  
Supplier: Castle Chemicals Ltd, Peak House  
6 Oxford Road, Altrincham, Cheshire WA14 2DY  
Tel: +44 161 608 8800 Fax: +44 161 608 1910  
Email: [Info@castlechemicals.com](mailto:Info@castlechemicals.com)

#### 2. HAZARD IDENTIFICATION

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May cause sensitization by skin contact.  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### 3. COMPOSITION INFORMATION ON INGREDIENTS

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This product is to be considered as a substance in conformance to EC directives.

Information on hazardous ingredients

Chemical description Zinc-2-mercaptobenzothiazole, 2-Mercaptobenzothiazole

Composition / information on ingredients

Number	% w/w	CAS-number	Chemical name
1	> 80	155-04-4	Zinc 2-mercaptobenzothiazole
2	< 20	149-30-4	2-Mercaptobenzothiazole

Number	EC-number	Annex-1 number	Symbol(s) (EU classification)	Risk-phrase(s)
1	205-840-3			R 43
2	205-736-8	613-108-00-3	N Xi	R43 R50/53

Formula: 1) C<sub>14</sub>H<sub>8</sub>N<sub>2</sub>S<sub>4</sub>Zn 2) C<sub>7</sub>H<sub>5</sub>NS<sub>2</sub>

## 4. FIRST AID MEASURES

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Symptoms and effects	Dust may be irritating to the respiratory tract and cause symptoms of bronchitis. Repeated contact may cause skin sensitization.
First aid	
General	In all cases of doubt, or when symptoms persist, seek medical attention
Inhalation	Move to fresh air. If symptoms persist, seek medical advice.
Skin	Remove all contaminated clothing immediately. Wash off with plenty of soap and water. Seek medical advice if irritation develops. Launder clothes before reuse.
Eye	Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if irritation develops.
Ingestion	Rinse mouth, give water to drink.
Advice to physician	No specific recommendations.

## 5. FIREFIGHTING MEASURES

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Extinguishing media	waterspray, water mist, foam, dry chemical powder, CO <sub>2</sub>
Unsuitable extinguishing media	waterjet.
Special exposure hazards	Emits toxic fumes under fire conditions.
Hazardous decomposition/combustion products	carbon monoxide (CO), Sulfur oxides (SO <sub>x</sub> ), nitrous gases (NO <sub>x</sub> ).
Protective equipment	Wear self contained breathing apparatus.
Other information	Do not allow run-off from fire fighting to enter drains or water courses.

## 6. ACCIDENTAL RELEASE MEASURES

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Personal precautions	For personal protection see Section 8.
Environmental precautions	Avoid discharge into the environment.
Methods for cleaning up	Collect as much as possible in a clean container for (preferable) reuse or disposal.

## 7. HANDLING AND STORAGE

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Handling	Avoid contact with skin. Avoid dust generation.
Fire and explosion prevention	No specific recommendations.
Storage requirements	Store in a dry and cool place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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Engineering controls	Avoid dust generation. Ensure good ventilation and local exhaustion of the working area.
Exposure limits	
Zinc 2-mercaptobenzothiazole	WEL (TWA): 4 mg/m <sup>3</sup> (respirable dust).
2-Mercaptobenzothiazole	WEL (TWA): 4 mg/m <sup>3</sup> (respirable dust). OES-TWA 10.0 mg/m <sup>3</sup> inhalable dust OES-TWA 4.0 mg/m <sup>3</sup> respirable dust
Personal protection	
Respiratory	Avoid breathing dust. In case of insufficient ventilation, wear suitable respiratory equipment.
Hand	Wear protective gloves.
Eye	Wear safety goggles.
Skin and body	Wear suitable protective clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	powder; powder, wettable
Colour	pale yellow
Odour	characteristic
Boiling point/range	not relevant
Melting point/range	340 °C
Flash point	not determined
Flammability	not determined
Autoignition temperature	not determined
Explosive properties	not determined
Explosion limits	not determined
Oxidising properties	not applicable
Vapour pressure	Negligible at room temperatures
Density	1700 kg/m <sup>3</sup> (20 °C)
Bulk density	470-520 kg/m <sup>3</sup>
Solubility in water	Practically insoluble
Solubility in other solvents	not determined
pH	value not determined
Partition coefficient	
n-octanol/water	not determined
Relative vapour density (air=1)	not applicable
Viscosity	not applicable

## 10. STABILITY AND REACTIVITY

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Stability	Stable under recommended storage and handling conditions (see section 7).
Conditions to avoid	Heating > 100 °C: May catch fire.
Materials to avoid	No specific recommendations.
Hazardous decomposition products	carbon monoxide (CO), nitrous gases (NO <sub>x</sub> ), Sulfur oxides (SO <sub>x</sub> ).

## 11. TOXICOLOGICAL INFORMATION

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Acute toxicity	Oral LD50 rat: 7500 mg/kg. Dermal LD50 rabbit: > 7940 mg/kg.
Irritation Skin	Overall mean EU skin irritation scores: Redness: 0.0. Swelling: 0.0. Non-irritating.
Eye	Overall mean EU eye irritation scores: Conjunctival redness: 1.3. Conjunctival swelling: 0.8. Iris lesions: 0.0. Cornea opacity: 0.0. Slightly irritating to eyes but not sufficient for classification.
Genotoxicity Name Acute toxicity	Not mutagenic (bacteria) 2-Mercaptobenzothiazole Oral LD50 rat: 3800 mg/kg Dermal LD50 rabbit: >7940 mg/kg.
Irritation Skin	Overall mean EU skin irritation scores: Redness: 0.5. Swelling: 0.5. Slightly irritating to skin but not sufficient for classification.
Eye	Overall mean EU eye irritation scores: Conjunctival redness: 0.4. Conjunctival swelling: 0.1. Iris lesions: 0.0. Cornea opacity: 0.0. Slightly irritating to eyes but not sufficient for classification.
Sensitization	Maximisation test (guinea pig): Sensitizing (skin). Patch testing (Human experience): Not sensitizing, Non-irritating.
Genotoxicity	Not mutagenic (in vitro, in vivo)
Other toxicological information	Not teratogenic Oral carcinogenicity test (rat): Tumours not relevant to man.

## 12. ECOLOGICAL INFORMATION

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No experimental ecological data are available on the preparation as such. The following data are applicable to the ingredient(s) listed below.

Name	Zinc 2-mercaptobenzothiazole
Ecotoxicity	

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bacteria	Activated sludge respiration inhibition test EC50 (3 hours): 1220 mg/l (Lit.).
Name	2-Mercaptobenzothiazole
Ecotoxicity	
fish	96h-LC50 (Lepomis macrochirus): 1.5 mg/l. 96h-LC50 (Oncorhynchus mykiss): 0.75 mg/l. 96h-LC50 (Pimephales promelas): 11 mg/l.
daphnia	48h-EC50 (Daphnia magna): 4.1 mg/l.
algae	96h-LC50: 0.25 mg/l
Fate	
Degradation Biotic	Not readily biodegradable

### 13. DISPOSAL CONSIDERATIONS

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Product	Avoid discharge into the environment. Small quantities: According to local regulations. Large quantities: Consult Flexsys for special advice.
Contaminated packaging	According to local regulations.
Other information	Waste code number: Please refer to your specific industry in the European Waste Catalogue.

### 14. TRANSPORT INFORMATION

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Land transport		
ADR class	9	RID class 9
Hazard Identification No.	90	ADR/RID packing group III
TREM-Card	Substance Identification No. 3077	
UN number	<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>	
Proper Shipping Name	3077	
Sea transport (IMDG-code / IMO)	Environmentally hazardous substance, solid, n.o.s. (2-mercaptobenzothiazole)(2-Mercaptobenzothiazole)	
IMO/IMDG code	Class 9	Packing group III
UN number 3077	EMS F-A, S-F	Subsidiary Risk
Marine pollutant	yes	
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s. (2-mercaptobenzothiazole)	
Air transport (ICAO-TI / IATA-DGR)		
ICAO-TI/IATA-DGR	UN number 3077	
Class 9	Packing group III	
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s. (2-mercaptobenzothiazole)	

## 15. REGULATORY INFORMATION

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Chemical description	Zinc-2-mercaptobenzothiazole, 2-Mercaptobenzothiazole	
Labelling according to EC directives		
EC-number	See section 3	
Classification based on	Tests, Calculation	
Symbol(s) (EU classification)	IRRITANT (Xi)	DANGEROUS FOR THE ENVIRONMENT (N)
R(isk) phrase(s) (EU classification)	R 43 May cause sensitization by skin contact R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	
S(afety) phrase(s) (EU classification)	S 22 Do not breathe dust S 24 Avoid contact with skin S 37 Wear suitable gloves S 61 Avoid release to the environment. Refer to special Instructions/Safety data sheets	
German Water Hazard Class (WGK)	2 (VwVwS, Nr. 6613)	

## 16. OTHER INFORMATION

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This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.

### R-phrase information

Chemical name	Risk-phrase(s)
Zinc 2-mercaptobenzothiazole	R 43 43
2-Mercaptobenzothiazole	R43 R50/53 May cause sensitization by skin contact Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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