

## SAFETY DATA SHEET

according to Commission Regulation (EU) 2020/878 as amended

### 2-Mercaptobenzothiazole

Creation date	22nd August 2013	Version	2.0
Revision date	22nd February 2023		

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

Substance / mixture	2-Mercaptobenzothiazole substance
Chemical name	benzothiazole-2-thiol
CAS number	149-30-4
Index number	613-108-00-3
EC (EINECS) number	205-736-8

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

###### Substance's intended use

Chemical production, analytical chemistry, laboratory synthesis, industrial applications. Laboratory chemicals.

###### Substance uses advised against

The product should not be used in ways other than those referred in Section 1.

##### 1.3. Details of the supplier of the safety data sheet

###### Supplier

Name or trade name	Ing. Petr Švec - PENTA s.r.o.
Address	Radiová 1122/1, Praha 10, 102 00 Czech Republic
Identification number (CRN)	02096013
VAT Reg No	CZ02096013
Phone	+420 226 060 681
E-mail	info@pentachemicals.eu
Web address	www.pentachemicals.eu

###### Competent person responsible for the safety data sheet

Name	Ing. Petr Švec - PENTA s.r.o.
E-mail	info@pentachemicals.eu

##### 1.4. Emergency telephone number

European emergency number: 112

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Skin Sens. 1, H317  
Aquatic Chronic 1, H410 (multiplying factor = 1)

Full text of all classifications and hazard statements is given in the section 16.

###### Most serious adverse effects on human health and the environment

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

##### 2.2. Label elements

###### Hazard pictogram



###### Signal word

Warning

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#### Dangerous substance

benzothiazole-2-thiol  
(Index: 613-108-00-3; CAS: 149-30-4)

#### Hazard statements

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

#### Precautionary statements

P273 Avoid release to the environment.  
P280 Wear protective gloves.

#### 2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
Index: 613-108-00-3 CAS: 149-30-4 EC: 205-736-8	<b>substance main component</b> benzothiazole-2-thiol	≤100	Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	

Full text of all classifications and hazard statements is given in the section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet.

##### If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

##### If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

##### If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes.

##### If swallowed

Rinse out the mouth with clean water. In the event of issues, find medical help.

#### 4.2. Most important symptoms and effects, both acute and delayed

##### If inhaled

Not expected.

##### If on skin

May cause an allergic skin reaction.

##### If in eyes

Not expected.

##### If swallowed

Irritation, nausea.

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

Symptomatic treatment.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

###### Unsuitable extinguishing media

Water - full jet.

##### 5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

##### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

##### 6.2. Environmental precautions

Do not allow to enter drains. Prevent contamination of the soil and entering surface or ground water.

##### 6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

##### 6.4. Reference to other sections

See the Section 7, 8 and 13.

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

Prevent contact with skin and eyes. Contaminated work clothing should not be allowed out of the workplace. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

##### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose.

##### 7.3. Specific end use(s)

not available

#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

##### 8.2. Exposure controls

Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

###### Eye/face protection

Protective goggles.

###### Skin protection

Hand protection: Protective gloves resistant to the product (nitrile rubber). Contaminated skin should be washed thoroughly.

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#### Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

#### Thermal hazard

Not available.

#### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	yellow
color intensity	light
Odour	acrid
Melting point/freezing point	177-181 °C
Boiling point or initial boiling point and boiling range	>260 °C
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	200 °C
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	0,118 g/l 20°C
Partition coefficient n-octanol/water (log value)	log Pow: 2,42
Vapour pressure	data not available
Density and/or relative density	data not available
Relative vapour density	data not available
Particle characteristics	data not available

### 9.2. Other information

not available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The substance is non-flammable.

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Unknown.

### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

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#### SECTION 11: Toxicological information

##### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological data is available for the substance.

##### Acute toxicity

Based on available data the classification criteria are not met.  
benzothiazole-2-thiol

Route of exposure	Parameter	Value	Exposure time	Species	Sex	Source
Oral	LD50	3.800 mg/kg		Rat (Rattus norvegicus)	F/M	ECHA
Dermal	LD50	>7.940 mg/kg		Rabbit	F/M	ECHA

##### Skin corrosion/irritation

Based on available data the classification criteria are not met.  
benzothiazole-2-thiol

Route of exposure	Result	Exposure time	Species	Source
	Not irritating	24 hour	Rabbit	ECHA

##### Serious eye damage/irritation

Based on available data the classification criteria are not met.  
benzothiazole-2-thiol

Route of exposure	Result	Exposure time	Species	Source
	Negative	24 hour	Rabbit	ECHA

##### Respiratory or skin sensitisation

May cause an allergic skin reaction.  
benzothiazole-2-thiol

Route of exposure	Result	Method	Exposure time	Species	Sex	Source
	Positive	OECD 406		Guinea-pig (Cavia aperea f. porcellus)		1272/2008, VI

##### Germ cell mutagenicity

Based on available data the classification criteria are not met.  
benzothiazole-2-thiol

Result	Exposure time	Specific target organ	Species	Sex	Source
Negative					ECHA

##### Carcinogenicity

Based on available data the classification criteria are not met.

##### Reproductive toxicity

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

##### Aspiration hazard

Based on available data the classification criteria are not met.

##### 11.2. Information on other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

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#### SECTION 12: Ecological information

##### 12.1. Toxicity

###### Acute toxicity

Very toxic to aquatic life with long lasting effects.

benzothiazole-2-thiol

Parameter	Method	Value	Exposure time	Species	Environment
LC50	OECD 203	0.73 mg/l	96 hour	Fishes (Oncorhynchus mykiss)	
EC50	OECD 202	0.71 mg/l	48 hour	Daphnia (Daphnia magna)	
ErC50		0.5 mg/l	72 hour	Algae (Pseudokirchneriella subcapitata)	
EC50	OECD 209	3.301 mg/l	3 hour	Bacteria	

##### 12.2. Persistence and degradability

not available

##### 12.3. Bioaccumulative potential

benzothiazole-2-thiol

Parameter	Value	Exposure time	Species	Environment	Temperature [°C]
	0.1 mg/l	42 day	Fishes (Cyprinus carpio)		25°C

Not available.

##### 12.4. Mobility in soil

Not available.

##### 12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

##### 12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100. The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

##### 12.7. Other adverse effects

Not available.

#### SECTION 13: Disposal considerations

##### 13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

###### Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

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#### SECTION 14: Transport information

##### 14.1. UN number or ID number

UN 3077

##### 14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-MERCAPTOBENZOTHIAZOLE)

##### 14.3. Transport hazard class(es)

9 Miscellaneous dangerous substances and articles

##### 14.4. Packing group

III - substances presenting low danger

##### 14.5. Environmental hazards

not relevant

##### 14.6. Special precautions for user

not available

##### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

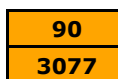
##### Additional information

Hazard identification No.

UN number

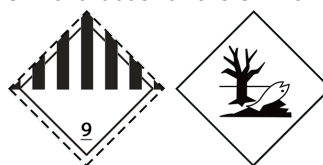
Classification code

Safety signs



M7

9+hazardous for the environment



##### Air transport - ICAO/IATA

Packaging instructions passenger 956

Cargo packaging instructions 956

##### Marine transport - IMDG

EmS (emergency plan) F-A, S-F

#### SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.

##### 15.2. Chemical safety assessment

No chemical safety assessment has been performed for this substance.

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#### SECTION 16: Other information

##### A list of standard risk phrases used in the safety data sheet

H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

##### Guidelines for safe handling used in the safety data sheet

P280	Wear protective gloves.
P273	Avoid release to the environment.

##### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

##### Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC50	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
ES	Identification code for each substance listed in EINECS
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC50	Lethal concentration of a substance in which it can be expected death of 50% of the population

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LD50	Lethal dose of a substance in which it can be expected death of 50% of the population
log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution from Ships
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Aquatic Acute	Hazardous to the aquatic environment
Aquatic Chronic	Hazardous to the aquatic environment (chronic)
Skin Sens.	Skin sensitization

#### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

#### Recommended restrictions of use

not available

#### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.  
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

#### The changes (which information has been added, deleted or modified)

The version 2.0 replaces the SDS version from 04 September 2017. Changes were made in sections 13,15 and 16.

#### More information

Classification procedure - calculation method.

#### Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.