



MATERIAL SAFETY DATA SHEET

MBS (NOBS) N-OXYDIETHYLENT-2-BENZOTHAZOLE SULFONAMIDE

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier:

Identification on the label/Trade name: 2-(morpholinothio)benzothiazole
Additional identification: Not available
Identification of the product: CAS# 102-77-2; EC# -203-052-4
Index Number: 613-113-00-0
REACH Pr-registration No.: 17-2120010508-66-0000

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

Used as a delayed-action vulcanization accelerator.

1.2.2 Uses advised against:

Not available.

2. COMPOSITION AND INFORMATION ON INGREDIENTS

2.1 Classification of the substance/mixture:

2.1.1 Classification:

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008

Hazard classes/Hazard categories	Hazard statement
Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye Irrit. 2	H319
Aquatic Chronic 2	H411

For full text of H- phrases: see section 2.2.

67/548/EEC

Hazards characteristics	R-Phrases
Xi	R36/38
-	R43
N	R51-53

For full text of R- phrases: see section 16.



2.2 label elements:

Hazard Pictograms:



Signal Word(S): Warning

Hazard Statement:

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H411: Toxic to aquatic life with long lasting effects.

Precautionary statement:

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P363: Wash contaminated clothing before reuse.
P391: Collect spillage.
P501: Dispose of contents/container in according with local regulation.

2.3 Other hazards:

Not available

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Substance
Ingredient(s):



Chemical Name	Pr-registration No.	CAS No.	EC No.	Concentration
2-(morpholinothio) benzothiazole	17-2120010508-66-0000	102-77-2	203-052-4	> 96%

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

4.1.2 In case of skin contact:

Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

4.1.3 In case of eyes contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

4.1.4 In case of ingestion:

Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms and effects, both acute and delayed:

The product is not classified as harmful to human health effect.

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

If skin irritation or rash occurs, get medical advice/attention.



SECTION 5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media: Never use water jet.

5.2 Special hazards arising from the substance or mixture

No specific fire or explosion hazard. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In case of fire, the following can be released: carbon oxides, nitrogen oxides, sulfur oxides

5.3 Special fire fighting methods and special protective actions for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation.

6.1.2 For emergency responders:

Put on appropriate personal protective equipment

6.2 Environmental Precautions:

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

6.3 Methods for Containment and Cleaning up:

Large spill:

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Small spill:

Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.



6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

6.5 Additional information:

Not applicable.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Put on appropriate personal protective equipment. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

7.1.2 Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s):

Not applicable.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

8.1.1 Occupational exposure limits:

Not available.

8.1.2 Additional exposure limits under the conditions of use:

Not available.

8.1.3 DNEL/DMEL and PNEC-Values:

Not available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or



statutory limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: safety glasses with side-shields.

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. After contamination with product change the gloves immediately and dispose of them according to relevant national and local regulations <1 hours (breakthrough time): Nitrile rubber - NBR , Polyvinyl chloride - PVC , Polychloroprene - CR

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: In case of dust formation particle filter.

Thermal hazards:

Not available.

8.2.3 Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Powder
Colour:	Light yellow to brown
Odour:	Not available
Odour threshold:	Not available
pH:	Not available
Melting point/range (°C):	81.9 - 84.79 °C
Boiling point/range (°C):	216.1 °C
Flash point (°C):	Not available



Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Non-flammable
Ignition temperature (°C):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20°C):	Not available
Vapour density:	Not available
Relative Density:	Not available
Bulk density:	1.37 g/cm ³
Water solubility (g/l):	ca. 39 mg/L (20°C)
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not relevant, substance is solid
Explosive properties:	Non explosive
Oxidising properties:	Not oxidizing
Molecular Formula:	Not available
Molecular Weight:	Not available

9.2. Other information:

Fat solubility(solvent- oil to be specified)

etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific gravity:	Not available

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity:

10.2 Chemical stability: The substance is stable under normal storage and handling conditions.

10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Decomposition temperature: 200°C

10.4 Conditions to avoid: Can form nitrosamines in the presence of certain organic materials and if heated.

10.5 Incompatible materials: Not available

10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.



Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Non-flammable
Ignition temperature (°C):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20°C):	Not available
Vapour density:	Not available
Relative Density:	Not available
Bulk density:	1.37 g/cm ³
Water solubility (g/l):	ca. 39 mg/L (20°C)
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not relevant, substance is solid
Explosive properties:	Non explosive
Oxidising properties:	Not oxidizing
Molecular Formula:	Not available
Molecular Weight:	Not available

9.2. Other information:

Fat solubility(solvent- oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific gravity:	Not available

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution:

Non-human toxicological data:	Not available
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11.2 Information on toxicological effects:

Acute toxicity:	
LD50(Oral, Rat):	> 7940 mg/kg bw
LD50(Dermal, Rabbit):	> 7940 mg/kg bw
LC50(Inhalation, Rat):	Not available

Skin corrosion/Irritation:	Causes skin irritation.
Serious eye damage/irritation:	Causes serious eye irritation.
Respiratory or skin sensitization:	May cause an allergic skin reaction.
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified



Reproductive toxicity: Not classified
STOT- single exposure: Not classified
STOT-repeated exposure: Not classified

SECTION 12 ECOLOGICAL INFORMATION

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	N/A	96h	Fish	OECD 203	N/A	N/A
EC50	2.84 mg/L	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

Persistence and degradability: This product is not readily biodegradable.
Bioaccumulative potential: Not available.
Mobility in soil: Not available.
Results of PBT&vPvB assessment: Not available.
Other adverse effects: Not available.™

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

13.2 Product / Packaging disposal:

Examine possibilities for re-utilisation. Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. Where large quantities are concerned, consult the supplier. When uncleaned empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues. For disposal within the EC, the appropriate code according to the European Waste List should be used. It is among the tasks of the polluter to assign the waste to waste codes specific to industrial sectors and processes according to the European Waste List.

SECTION 14 TRANSPORT INFORMATION

	Land transport(ADR /RID)	Sea transport (IMDG)	Air transport (ICAO /IATA)
UN-Number	UN3077	UN3077	UN3077
UN Proper shipping name	Environmentally hazardous, substance, solid,n.o.s.(2-(morpholiniothio)benzothiazole)	Environmentally hazardous, substance, solid,n.o.s.(2-(morpholiniothio)benzothiazole)	Environmentally hazardous, substance, solid,n.o.s.(2-(morpholiniothio)benzothiazole)



Transport hazard Class	9	9	9
Packaging group	III	III	III
Environmental hazards	Yes	Yes	Yes
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	IBC08	IBC08	IBC08

SECTION 15 REGULATION INFORMATION

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

Relevant information regarding authorization: Not applicable.

Relevant information regarding restriction: Not applicable.

Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations: Not applicable

Chemical Safety Assessment has been carried out? YES NO

SECTION 16 OTHER INFORMATION

16.1 Indication of changes:

Version 1.0 Amended by EU No 453/2010

16.2 Relevant R- phrases (number and full text):

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.3 Training instructions:

Not applicable.

16.4 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.



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16.5 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

