



Extended Safety Data Sheet
According to Regulation (EC) No 1907/2006, Annex II,
Amended by COMMISSION REGULATION (EU) 2020/878,
According to REGULATION (EC) No 1272/2008

N-cyclohexylbenzothiazole-2-sulfenamide

Version 2.0

Issue date: 23-01-2011

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CIRS eSDS Record Number: CSSS-TCO-010-110023

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Identification on the label/Trade name: N-cyclohexylbenzothiazole-2-sulfenamide
Additional identification: Nanoform is NOT covered by this eSDS.
Identification of the product: CAS#95-33-0 EC#202-411-2
Index Number: 613-136-00-6
REACH registration No.: 01-2119486796-16-****

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

1.2.1 Identified uses:

Production of tyres and general rubber goods;
Retreading and recycling;
Tyre mounting and dismounting and handling of technical rubber goods;
Use of tyres and general rubber goods

1.2.2 Uses advised against:

No uses advised against are identified.

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative): Chemical Inspection & Regulation Service Limited
Supplier(Manufacturer): KEMAI Chemical Co.,Ltd
Address: No.72 Haixin Road,Gulin Industry Zone,Dagang,Binhai New Dist,Tianjin
P.R.CHINA
Contact person(E-mail): baichunmei@tjkemai.com
Telephone: +86 22 63351601
Fax: N/A

1.4 Emergency telephone Number:

+353 (1) 477 3710. Only available during office hours (9:00a.m.-17:30p.m.)

Available outside office hours? YES NO

Section 2 Hazards Identification

2.1 Classification of the substance or mixture:

2.1.1 Classification of the substance:

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

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Skin Sens. 1	H317
Aquatic Acute 1	H400

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

2.2 Label elements:

Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

H317: May cause an allergic skin reaction.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P302 + P352: IF ON SKIN: Wash with plenty of water.

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P321: Specific treatment (see ... on this label)

P362+P364: Take off contaminated clothing and wash it before reuse.

P391: Collect spillage.

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

Supplemental Hazard information (EU)

Not applicable.

2.3 Other hazards:

The substance is not PBT / vPvB.

The substance is not identified as having endocrine disrupting properties.

Section 3 Composition/information on ingredients

Substance/Mixture:

Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE)
N-cyclohexylbenzothiazole-2-sulfenamide	01-2119486796-16-****	95-33-0	202-411-2	≥95 - ≤100%	M-Factors acute: 1 M-Factors chronic: 10

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:

Remove from exposure, taking care to avoid inhaling vapours. Keep warm rest. Obtain medical attention if symptoms appear.

4.1.2 In case of skin contact:

Wash skin with water. Obtain medical attention if soreness or redness persists.

4.1.3 In case of eyes contact:

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Remove contact lenses if possible. Obtain medical attention.

4.1.4 In case of ingestion:

Do not induce vomiting. Obtain medical attention if symptoms appear or if large quantities have been ingested. Accidental ingestion at a level high enough to be dangerous to health is unlikely.

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

May cause an allergic skin reaction.

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

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

Section 5 Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media: Water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released: carbon oxides, nitrogen oxides, sulfur oxides.

5.3 Advice for firefighters:

Self-contained breathing apparatus with full-face mask and full protective clothing (standard wear).

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel: Eliminate all sources of ignition. Wear appropriate protective clothing. Avoid breathing vapours. Keep unnecessary people away; isolate hazard area and deny entry. Consider need for evacuation. Stay up wind and keep out of low areas where vapour may accumulate and ignite.

6.1.2 For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if vapour is generated.

6.2 Environmental Precautions:

Try to prevent the material from entering drains or water courses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

6.3 Methods and material for Containment and Cleaning up:

Small spills: Allow to evaporate if it is safe to do so or contain and absorb using earth, sand or other inert material then transfer into suitable containers for recovery or disposal. Ventilate contaminated area thoroughly.

Large spills: Dike or dam to contain for later disposal. Contact emergency authorities.

6.4 Reference to other sections:

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Store in tightly closed containers in cool, dry, isolated, well-ventilated area. Avoid inhaling vapour. Avoid contact with eyes, skin and clothing. Suitable equipment for dealing with fires, spills and leaks must be readily available. Earth all equipment. Use explosion protected electrical equipment and lighting. Do not smoke eat or drink in areas of use and storage. Use closed-system transfers wherever possible. Earth (ground) lines and equipment used during transfer to reduce possibility of static spark initiated fire or explosion.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:

Storage area should be cool, dry, well ventilated, out of direct sunlight and separated from oxidants and strong mineral acids. Store in original containers. Store away from sources of heat or ignition. Storage tanks should have equipotential electrical bonding and be earthed. Storage should be closed.

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:

Workers - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=11 mg/m ³
Workers - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=67 mg/kg bw/day
General Population - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=2.8 mg/m ³
General Population - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=33 mg/kg bw/day
General Population - Hazard via oral route	Systemic effects-Long term exposure	DNEL=0.8 mg/kg bw/day
Hazard for aquatic organisms	Freshwater	PNEC=0.001 mg/L
Hazard for aquatic organisms	Marine water	PNEC=0 mg/L
Hazard for aquatic organisms	STP	PNEC=100 mg/L
Hazard for aquatic organisms	Sediment (freshwater)	PNEC=0.183 mg/kg sediment dw
Hazard for aquatic organisms	Sediment (marine water)	PNEC=0.018 mg/kg sediment dw
Hazard for terrestrial organisms	Soil	PNEC=3.16 mg/kg soil dw
Hazard for predators	Secondary poisoning	PNEC=26.4 mg/kg food

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection: Safety goggles.

Skin protection

Hand protection: Wear gloves with breakthrough times >480 minutes: Nitrile rubber gloves. Butyl rubber gloves. (complying to EN 374-3) The exact choice of glove type depends on the type of work being undertaken. Gloves should be chosen in consultation with a glove manufacturer and after a full assessment of the working conditions. Gloves should be replaced regularly.

Body protection: Standard work wear and safety boots for normal handling and use.

Respiratory protection: Use with adequate ventilation. In case of insufficient local exhaust ventilation and/or handling with open equipment: Respiratory air fed breathing apparatus if there is a risk of exposure to high vapour concentrations. If using a half mask: organic vapour cartridge Ax type.

Thermal hazards: Wear suitable protective clothing to prevent heat.

8.2.3 Environmental exposure controls: Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical state:	Solid
Colour:	White
Odour:	Not available
Melting point/freezing point (°C):	94 - 103°C
Boiling point or initial boiling point and boiling range (°C):	145°C at 101325 Pa
Flammability (gas, liquid, solid):	Not classified

Lower and upper explosion limit:	Not available
Flash point (°C):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
pH:	Not available
Kinematic viscosity (mm²/s):	Not available
Solubility in water (g/l, 20°C):	0.32 mg/l at 21°C and pH 7
Solubility in other polar and non-polar solvents (g/l, 20°C):	Not available
Partition coefficient n-octanol/water (log Po/w, 20°C):	Log Kow (Log Pow): ca. 5 (25 °C)
Vapour pressure (20°C):	0 hPa (25 °C)
Bulk density (kg/m³):	Not available
Relative Density (g/cm³):	1.29 at 20°C
Relative vapour density:	Not available
Particle characteristics:	The median diameter was 27 µm with the main fraction of 93% distributing in the range of 10 to 100 µm.
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Ignition temperature (°C):	Not available
Explosive properties:	Non explosive
Oxidising properties:	No oxidising property
Molecular Formula:	C13H16N2S2
Molecular Weight:	264.409
9.2. Other information:	
Fat solubility(solvent-oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	pKa (HL/H+L) = 0.6±0.1 and pKa (H2L/H+HL) = -4.3±0.20 at 25 °C.
Oxidation-reduction Potential:	Not available

Section 10 Stability and reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	Stable at room temperature in closed containers under normal storage and handling conditions.
10.3 Possibility of hazardous reactions:	No dangerous reactions known.
10.4 Conditions to avoid:	Incompatible materials. High temperatures. Proximity to sources of ignition.
10.5 Incompatible materials:	Strong oxidizing agents, acids and nitrosating agents.
10.6 Hazardous decomposition products:	Carbon oxides, nitrogen oxides, sulfur oxides.

Section 11 Toxicological information

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

Acute toxicity:	
LD50(Oral, Rat):	5300 mg/kg bw
LD50(Dermal, Rabbit):	7940 mg/kg bw
LC50(Inhalation, Rat):	Not available

Skin corrosion/Irritation:	Not classified
Serious eye damage/irritation:	Not classified
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
Aspiration hazard:	Not classified

11.2 Information on other hazards

Endocrine disrupting properties	The substance is not identified as having endocrine disrupting properties.
Other information	Not applicable

Section 12 Ecological information

12.1 Toxicity:

Acute (short-term) toxicity:

LC50(96h, Fish):	0.78 mg/L
EC50(48h, Daphnia magna):	0.79 mg/L
EC50(72h, Algae/aquatic plants):	0.15 mg/L

Chronic (long-term) toxicity:

NOEC(Fish):	0.041 mg/L
NOEC(Daphnia magna):	0.058 mg/L
NOEC(Algae/aquatic plants):	0.008 mg/L

12.2 Persistence and degradability: Not readily biodegradable

12.3 Bioaccumulative potential: BCF: 924.7 L/kg

12.4 Mobility in soil: Koc: ca. 2154 at 25 °C

12.5 Results of PBT and vPvB assessment: The substance is not PBT / vPvB.

12.6 Endocrine disrupting properties: The substance is not identified as having endocrine disrupting properties.

12.7 Other adverse effects: Not available.

12.8 Additional information Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods: Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

Section 14 Transport information

	Land transport	Inland waterways	Sea transport	Air transport
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	(ADR/RID)	(ADN)	(IMDG)	(ICAO/IATA)
14.1 UN number or ID number	UN3077	UN3077	UN1170	UN3077
14.2 UN Proper shipping name	ENVIRONMENTALLY HAZARDOUS, SUBSTANCE, SOLID, N.O.S. (N-cyclohexylbenzothiazole-2-sulfenamide)	ENVIRONMENTALLY HAZARDOUS, SUBSTANCE, SOLID, N.O.S. (N-cyclohexylbenzothiazole-2-sulfenamide)	ENVIRONMENTALLY HAZARDOUS, SUBSTANCE, SOLID, N.O.S. (N-cyclohexylbenzothiazole-2-sulfenamide)	ENVIRONMENTALLY HAZARDOUS, SUBSTANCE, SOLID, N.O.S. (N-cyclohexylbenzothiazole-2-sulfenamide)
14.3 Transport hazard Class(es)	9	9	9	9
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes	Yes	Yes	Yes
14.6 Special precautions for user	See section 2.2	See section 2.2	See section 2.2	See section 2.2
14.7 Maritime transport in bulk according to IMO instruments	IBC08	IBC08	IBC08	IBC08

Section 15 Regulatory 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

15.2 Chemical safety assessment YES NO

Section 16 Other information

16.1 Indication of changes:

Version 1.0 Amended by (EU) 2020/878

Version 2.0 Exposure scenarios are placed after section 16.

16.2 Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation for rail International transportation of Dangerous goods

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: Code international maritime dangerous goods code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.

NOEC: No Observed Effect Concentration

DNEL: derived no-effect level

PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data

ECHA Registered substances data

Product name: N-cyclohexylbenzothiazole-2-sulfenamide

Version #: 2.0

Issue date: 23-01-2011.

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16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008		Classification procedure
Skin Sens. 1	H317	Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)
Aquatic Acute 1	H400	Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)
Aquatic Chronic 1	H410	Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

16.5 Relevant H-statements (number and full text):

H317: May cause an allergic skin reaction.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

16.6 Training instructions:

Not applicable.

16.7 Further information:

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

16.8 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.

Author: Hangzhou REACH Technology Group Co., Ltd. Website: www.cirs-group.com Tel: 0571-87206555 Email: info@cirs-group.com

The exposure scenario section is extracted from the CSR.