

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 | Rubenamid C |
| Chemical name | N-cyclohexylbenzothiazole-2-sulfenamide |
| CAS N° | 95-33-0 |
| EC (EINECS) N° | 202-411-2 |
| Annex VI (EC) 1272/2008 N° | 1272/2008: 613-136-00-6 |
| REACH register number | 01-2119486796-16-0001 |

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 preparation 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
- Aquatic acute cat. 1
- Aquatic chronic 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

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

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

S3 COMPOSITION/INFORMATION ON INGREDIENTS

N-Cyclohexylbenzothiazole-2-sulfenamide (CBS)

| Classification Reg. (CE) 1272/2008 | Concentration (%) |
|--|-------------------|
| <ul style="list-style-type: none"> • Skin sensitizer cat. 1; H317 • Aquatic acute cat. 1; H400 • Aquatic chronic cat. 1; H410 | >95 % p/p |

Anti-dust mineral oil

| Classification Reg. (CE) 1272/2008 | No. CAS | No. CE | Concentration (%) |
|------------------------------------|-----------|-----------|-------------------|
| Not classified. | 8042-47-5 | 232-455-8 | < 2% 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 the affected person does not breathe, apply artificial respiration.
- 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) Avoid discharge into drains or watercourses.

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 protected from direct sunlight and away from strong oxidizers. Store in locations equipped with firefighting equipment.
- At temperatures above 40°C and/or high humidity conditions, the product suffers slow degradation and emits irritating vapours (cyclohexylamine).

Incompatible materials

- Oxidizers, strong acids and strong alkalis.

7.3. Specific end use(s)

No additional information

8.1. Control parameters**Exposure limit values**

Particulates not otherwise classified (PNOC):

- Inhalable particulate: 10 mg/m³
- Respirable particulate: 3 mg/m³
- Acute dermal: 534 mg/kg body weight/day
- Acute inhalation: 11 mg/m³
- Chronic dermal: 67 mg/kg body weight/day
- Chronic inhalation: 11 mg/m³

DNELs calculated for workers

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

Established PNEC values for substance

- Freshwater: 0.00084 mg/L
- Sea water: 0.000084 mg/L
- Sediments in freshwater: 0.067 mg/kg w.w.
- Marine sediments: 0.0067 mg/kg w.w.
- Soil: 0.0539 mg/kg w.w.
- STP: 100 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

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| Appearance | Solid with cream or greyish with colour |
| Odour | Characteristic of amine |
| pH | Not applicable |
| Melting point/freezing point | 97 - 105 °C |
| Initial boiling point and boiling range | Decomposes before boiling |
| Flash point | 177 °C (Cleveland Open cup) |
| Evaporation rate | Not applicable |
| Flammability | Not readily flammable |
| Upper/lower limits of flammability/explosiveness | See Section 9.2 |
| Vapour pressure | < 4.53*10 ⁻⁷ hPa at 25°C |
| Vapour density | Not applicable |
| Relative density | 1.29 gr/cm ³ |
| Solubility (es) | In water: 0.32 mg/l at 21°C and pH 7. Soluble in acetone, ether or alcohols. |
| Partition coefficient n-octanol/water | Log Pow: 4.98 at 25°C and pH 7 |
| Auto-ignition temperature | 349 °C (for powder) |
| Decomposition temperature | 145°C |
| Viscosity | Not applicable |
| Oxidising properties | Not relevant |

9.2. Other information

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|----------------------|---|
| Explosive properties | <ul style="list-style-type: none">• Explosion class: St2:• Kst: 169-237 bar.m/s• Lower explosive limit: 20 g/m³• Minimum Ignition Energy: <3mJ |
|----------------------|---|

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. When the product dampens, it suffers slow decomposition and releases cyclohexylamine vapours.

10.3 Possibility of hazardous reactions

They have not been described.

10.4. Conditions to avoid

Keep away from heat, sparks and flames. Avoid contact with humidity sources.

10.5. Incompatible materials

Oxidants, acids, strong alkaline substances.

10.6. Hazardous decomposition products

Amines (cyclohexylamine, aniline) and sulphurous by-products could be produced due to thermal decomposition. In case of combustion, see section 5.

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| S11 | TOXICOLOGICAL INFORMATION |
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11.1. Information on toxicological effects

Acute toxicity (ingestion)

LD50: 5.300 mg/kg (rat)

Acute toxicity (dermal)

LD50: >7.940 mg/kg (rabbit)

Ingestion

Even if the product is not toxic following ingestion, there might be malaise and/or adverse effects after ingesting relatively big product amounts.

Skin corrosion/irritation

The product is a slightly irritating to the skin. Symptoms: redness, swelling and rash.

It may cause skin sensitivity and allergy.

Serious eye damage/irritation

May cause mild eye irritation with symptoms typical of conjunctivitis: redness, swelling, 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.

The product is slightly irritating to the skin. Symptoms: redness, swelling and rash. It may cause skin sensitization and allergy.

Mutagenicity

Negative results of in vitro and in vivo genetic toxicity 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.

Reproductive toxicity

No evidence of teratogenicity in animal studies using rats, mice and hamsters.

STOT-single exposure

They have not been described

STOT-repeated exposure

They have not been described

Other information of interest

The product evolves amine vapour during vulcanization that might produce breathing, ocular and skin sensitivity.

Medical conditions aggravated by exposure: Dermatological and lung diseases. Hematologic problems and liver diseases. The product or its emissions during use may cause sensitization effects or allergic reactions

which may aggravate other pre-existing systemic diseases.

12.1. Toxicity

Fish

- 96h-LC₅₀ (Lepomis macrochirus): 7,9 mg/l
- 96h-LC₅₀ (Oncorhynchus mykiss): 5,4 mg/l
- 96h-LC₅₀ (Pimephales promelas): > 1000 mg/l

Algae

- 96h-IC₅₀ (Selenastrum capricornutum): 1,1 mg/l

Invertebrates

- 48h-EC₅₀ (Daphnia magna): 18 mg/l

12.2. Persistence and degradability

Abiotic

- The product rapidly degrades by hydrolysis (50% in 12 h at pH 7 and 25°C) and Photolysis (degradation by photolysis of water: 50% in 26 minutes).

Biotic

- Product not easily biodegradable.

12.3. Bioaccumulative potential

The tests performed with the material indicate that the product is not bioaccumulative or persistent. The product does not meet the criteria to be considered PBT or vPvB.

12.4. Mobility in soil

CBS 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 CBS are sediments with 47.09%; soil with 46.57% and water with 5.89%.

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.

Contaminated containers

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

Handling

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

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 (N-Cyclohexylbenzothiazole-2-sulfenamide)
- ADR/RID class: 9
- ID number Hazard: 90
- 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 (N-Cyclohexylbenzothiazole-2-sulfenamide)
- ICAO-TI/IATA-DGR class: 9
- 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 (N-Cyclohexylbenzothiazole-2-sulfenamide).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

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.

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| S15 | REGULATORY INFORMATION |
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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 N°: 01-2119486796-16-0001

Other regulations

- The product is listed in the following inventories: USA (TSCA), Canada (DSL), USA (TSCA), Canada (DSL), EU (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 France order 9/11/94
- Product covered 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 exposure scenarios is included.

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| S16 | Other information |
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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 respon-

sibility to determine the validity of the information contained in this Material Safety Data Sheet to apply depending on the case.