



Chemicals Corp.

DISTRIBUTED BY
R.E. CARROLL INC.
1570 NORTH OLDEN AVENUE
TRENTON, NJ 08638-3204
609-695-6211 / 800-257-9365

110 West Beaver Creek Road, Richmond Hill,
Ontario, L4B 1J9 CANADA
101 Glasgow Street, Kitchener, Ontario, N2G 4X8
Tel: 905-707-3433 · Fax: 905-707-3433
Email: karen@sunboss.ca

Safety Data Sheet

CBS

SECTION 1: IDENTIFICATION

Chemical Name	N-Cyclohexyl-2-benzothiazole sulfenamide
Trade Name	CBS
Recommended Uses	Accelerator, mainly used in the manufacture of tires, hoses, rubber conveyor belts and industrial rubber products.
Restrictions	No information available.
Supplier	SunBoss Chemicals Corp.
Address	8-110 West Beaver Creek Road Richmond Hill, ON L4B 1J9
Telephone	905-707-3433
Fax	905-707-7393

Emergency Information

After normal hours call Chemtrec at 1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

GHS Classification

SKIN SENSITISATION - Category 1
ACUTE AQUATIC TOXICITY - Category 1
CHRONIC AQUATIC TOXICITY - Category 1

GHS Label elements

Pictograms:



Signal word:

Warning

Hazard Statement(s)

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

Precautionary Statement(s)**Prevention:**

Avoid breathing dust/fumes/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection

Response:

IF ON SKIN: wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Collect spillage.

Storage:

Not applicable.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental Hazard information

Not available

Supplemental label elements for certain mixtures

Not available

WHMIS

D2B TOXIC MATERIALS/Materials Causing Other Toxic Effects.

Potential Health Effects:**Inhalation**

Causes moderate respiratory irritation. Irritating vapour causes immediate distress. Irritates mucous membranes. Signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Ingestion

May be harmful if large amounts are swallowed. May cause liver and kidney damage.

Skin contact

May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.

Eye Contact

Causes moderate eye irritation. Signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**Synonyms:**

Antioxidant CBS, 2-Benzothiazolesulfenamide, N-cyclohexyl.

Component	CAS Number	EINECS Number	Concentration %
N-Cyclohexyl-2-Benzothiazole Sulfenamide	95-33-0	202-411-2	> 98%
Vegetable Oil (powder only)	8013-07-8	232-410-2	1 – 2%

SECTION 4: FIRST AID PROCEDURES

Most important symptoms and effects, both acute and delayed:

May cause an allergic skin reaction.

In case of inhalation:

Remove 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. 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 collar tie, belt or waistband.

In case of ingestion:

Wash out mouth with water. Move exposed person to fresh air. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the victim feels sick as vomiting may be dangerous. Only induce vomiting at the instruction of a physician. If vomiting occurs, the head should be kept low to prevent vomit from entering the lungs. Never give anything by mouth to an unconscious person. Get medical attention if adverse effects persist or are severe.

In case of skin contact:

Remove contaminated clothing, wash skin with water, using soap if available. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if irritation persists. Launder clothing and clean shoes thoroughly before reuse.

In case of eye contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes 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 persists.

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

Suitable extinguishing media	Water fog, carbon dioxide, foam, dry chemical
Unsuitable extinguishing media	Do not use water jet.
Specific hazards/hazardous combustion products	Toxic emissions may result if product is involved in a fire. The following can be released: carbon oxide, nitrogen oxide, oxides of sulphur.
Special fire-fighting procedures	Fight fire from a safe distance and from a protected location. Flammable dust when in finely divided and highly suspended state. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow run-off to enter waterways.
Special protective equipment	Fire fighters should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate the area. Wear protective equipment specified. Avoid the generation of dust. Do not touch or walk through spilled material. Provide adequate ventilation. Keep untrained personnel away from spill.
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Environmental precautions

Prevent further leakage or spillage of product. Do not let product enter waterways, drains or soil. Inform environmental authorities if the product has entered the sewer, waterways, soil or air. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Clean up Methods

Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe. Scoop up and remove solids. For large spill, collect material with a non-combustible, absorbent product such as sand or earth. Do NOT spread spilled product with water.

SECTION 7: HANDLING AND STORAGE

Handling

Wear appropriate protective clothing and gloves. Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Mechanical exhaust required. Close containers of unused product. Wash hands thoroughly before eating, drinking, and chewing gum, using tobacco or using the toilet.

Storage

Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials and food. Avoid exposure to direct sunlight. Slowly degrades and releases irritating vapours under warm, humid conditions.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS	AGCIH (TLV/8Hr/TWA)	OSHA (PEL/8Hr/TWA)
N-Cyclohexyl-2-benzothiazole sulfenamide	10 mg/m ³	5 mg/m ³ (Respirable dust) 15 mg/m ³ (Total dust)

Engineering Controls

Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentrations of contaminants below the TLV's. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.



Respiratory protection

Wear a NIOSH/MSHA approved full face piece airline respirator in the positive pressure mode.

Eye/face protection

Safety eyewear complying with an approved standard should be used to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: Tightly fitted safety goggles.

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.

Hand protection

Wear chemical resistant gloves as a standard industrial handling procedure. Recommended material: Nitrile rubber, Polyvinyl chloride, Polychloroprene.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder or granules.
Odour	Mild amine
pH	Not available
Melting Point	199-212°F / 93-100°C
Boiling point	293°F / 145°C
Flash Point	350°F / 177°C
Evaporation Rate	Not available
Flammability	Not available
Exposure Limits	Lower Exposure Limit (LEL): 10-20 g/m ³ Minimum Ignition Energy (MIE): = <3 mJ Limiting Oxygen Concentration (LOC): 9.0 V% O ₂
Vapour Pressure	4.0 x 10 ⁻⁷ hPa @ 25°C
Vapour Density (Air = 1)	Not available
Relative Density	1.27 g/cm ³ @ 20°C
Bulk Density	Not available
Solubility in water	0.24 ppm @ 21°C
Other Solubility	Soluble in toluene, acetone, benzene, chloroform
Partition Coefficient: n-octanol/water	Log Pow = 4.93
Auto-ignition Temperature	680°F / 360°C
Decomposition Temperature	293°F / 145°C
Viscosity, dynamic (mPa s)	Not available
Thermal Stability Index	Not available
Specific Gravity	1.30 @ 25°C
Molecular Weight	264.4 g/mol
Molecular Formula	C ₁₃ -H ₁₆ -S ₂ -N ₂

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Not reactive under normal conditions of storage and use.
Chemical Stability	Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation. Stable if protected from heat and exposure to air. Loses potency with time. Protect from moisture.
Possible Hazardous Reactions	Amine vapours can cause insoluble sulphur to revert to soluble form.
Conditions to avoid	Keep away from heat, sparks and flame.
Incompatibility	Reducing agents. Contact with acids. Avoid contamination of product with small amounts of water.
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	Carbon monoxide, oxides of nitrogen, oxides of sulphur amines.

SECTION 11: TOXICOLOGICAL INFORMATION

<u>Acute Toxicity</u>	
Acute Oral Toxicity	LD ₅₀ = >5300 mg/kg (Rat)
Acute Dermal Toxicity	LD ₅₀ = >7940 mg/kg (Rabbit)
Acute Inhalation Toxicity	Not determined
Principle Routes of Exposure	Eyes. Inhalation. Dermal - skin
Ingestion	May be harmful if large amounts are swallowed. May cause liver and kidney damage.
Skin contact	May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.
Inhalation	Causes moderate respiratory irritation. Irritating vapour causes immediate distress. Irritates mucous membranes. Signs/symptoms can include soreness of the nose and throat, coughing and sneezing.
Eye Contact	Causes moderate eye irritation. Signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.
Aggravated Conditions	Pulmonary disorders. Dermal ailments. Eye, skin, respiratory, blood, liver and/or kidney ailments. This material or its emissions may cause an allergic or sensitization reaction and thereby aggravate systemic disease.
Carcinogenicity	Negative in standard tests using bacteria and yeast cells.
Primary Irritation Effect	Moderately irritating.
Genotoxicity	None.

Reproductive/Developmental Toxicity

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

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY

Acute Toxicity		Time	Species	Method
LC50	5.4 mg/l	96Hr	Rainbow Trout	OECD 203
LC50	7.9 mg/l	96Hr	Bluegill Sunfish	OECD 203
LC50	>1000 mg/l	96Hr	Fathead Minnow	OECD 203
EC50	18 mg/l	48Hr	Daphnia	OECD 202
EC50	0.9-1.1 mg/l	96Hr	Algae	OECD 201

Bioaccumulation

BCF = 924.7 L/kg

Persistence and Degradability

The biodegradability of this substance was investigated under Directive 84/449/EEC, C. 7 "Biotic degradation-modified MITI Test", using domestic sewage as inoculums. The product attained a 0% biodegradation after 28 days. Thus, the substance has no biodegradation.

Mobility in Soil

Log Koc = 3.56

Other Adverse Effects

Very toxic to aquatic life, with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal

This material is a non-hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.

Contaminated Packaging

If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Dispose of container according to national or local regulations. Do NOT reuse container.

SECTION 14: TRANSPORT INFORMATION

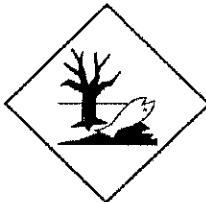
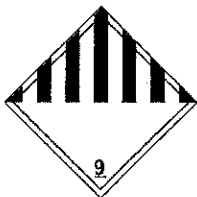
DOT

Not regulated

Note:

Not listed in DOT Marine Pollutant list Appendix B to 172,101, therefore, not regulated as Marine Pollutant by DOT.

IATA

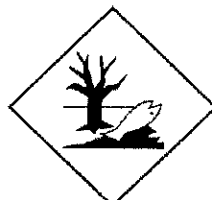
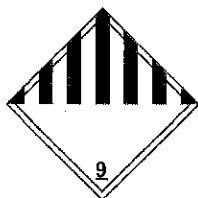


UN/ID No.
Proper Shipping Name

Hazard Class
Packing Group
Marine Pollutant
Special Markings

UN 3077
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(N-Cyclohexyl-2-Benzothiazole sulfenamide),
9
III
Yes
Symbol (fish and tree)

IMDG



UN/ID No.
Proper Shipping Name

Hazard Class
Packing Group
Marine Pollutant
Special Markings

UN 3077
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(N-Cyclohexyl-2-Benzothiazole sulfenamide),
9
III
Yes
Symbol (fish and tree)

TDG (Canada)

Not regulated

SECTION 15: REGULATORY INFORMATION

USA - TSCA
Canada - DSL
EINECS/ELINCS
Australia - AICS
Korea - ECL
Japan - ENCS
China - IECSC
Philippines - PICCS

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US Regulations

SARA Section 302
SARA 311/312 Hazard Categories
SARA 313 Chemical
RCRA Status

Not applicable
Immediate Delayed.
2-Mercaptobenzothiazole.
Not a RCRA waste

Other regulations:

California Proposition 65: None of the components are listed.

New Jersey Right-to-know List: None of the components are listed.

Pennsylvania Right-to-Know List: None of the components are listed.

Minnesota Right-to-Know List: None of the components are listed.

Massachusetts Right-to-Know Law: None of the components are listed.

FDA Status 21 CFR:

Regulated for use under the following sections of 21CFR:

177.2600: Rubber articles intended for repeated use in food contact.

Canadian Regulations

WHMIS Symbol/Hazard Class



D2B TOXIC MATERIALS/Materials Causing Other Toxic Effects.

NPRI

Not determined

NFPA Rating (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

HMIS Classification (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

SECTION 16: OTHER INFORMATION

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. SunBoss Chemicals Corp. extends no warranty and assumes no responsibility for the accuracy or sufficiency of the content and expressly disclaims all liability for reliance thereon. This safety data sheet provides guidelines for the safe handling of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. It is the responsibility of the user to comply with all Federal, State and local laws and regulations. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

Abbreviations and Acronyms

ACGIH: American Conference of Governmental Industrial Hygienists Inc.
CAS: Chemical Abstracts Service (Division of American Chemical Society)
DOT: Department of Transportation (USA)
EINECS: European Inventory of Existing Commercial Chemical Substances
HMIS: Hazardous Materials Identification System (USA)
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IMDG: International Marine Code for Dangerous Goods
LD50: Lethal Dose Medium
LC50: Lethal Concentration Medium
EC50: Effective Concentration Medium
NIOSH: National Institute for Occupational Safety and Health
NFPA: National Fire Protection Association (USA)
NPRI: National Pollutant Release Inventory (Canada)
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration (USA)
TDG: Transportation of Dangerous Goods (Canada)

TLV: Threshold Limit Value
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Information Systems (Canada)

SECTION 17: REVISION DATE

Revision number: 7

Date of Issue: July 27, 2015

Changes: Reformatted and updated according to the Global Harmonized System (GHS)