



SOUR SORB

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **SOUR SORB**

Other means of identification : SC-630.01

Recommended use of the chemical and restrictions on use

: Hydrogen Sulphide Scavenger
Recommended restrictions: No restrictions on use known.

Chemical family : Mixture

Name, address, and telephone number of the supplier:

CONCEPTUAL TECHNOLOGIES INC

6812/14-78 Avenue NW
Edmonton, AB, Canada
T6B 2J5

Supplier's Telephone # : (780) 466-6146 [9:00 am - 5:00 pm]

24 Hr. Emergency Tel # : (780) 466-6146

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Amine odour.

Most important hazards: Flammable liquid. This material may be ignited by heat, sparks and direct flame. Causes skin and eye irritation. May cause an allergic skin reaction.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquid - Category 3

Skin Irritation - Category 2

Serious eye damage/eye irritation - Category 2A

Skin sensitization - Category 1A

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

Flammable liquid and vapour.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.



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Precautionary statement(s)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Take precautionary measures against static discharge.
Use only non-sparking tools.
Use explosion-proof electrical and ventilating equipment.
Avoid breathing vapour or mist.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store locked up.
Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Burning produces obnoxious and toxic fumes.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Bis(dibutylamino)methane	Tetrabutylmethylenediamine	20280-10-8	80.0 - 100.0
N-Butyl-I-butanamine	Dibutylamine	111-92-2	1.0 - 5.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Seek immediate medical attention/advice.
- Inhalation* : Immediately remove person to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Seek immediate medical attention/advice.
- Skin contact* : Wear appropriate protective equipment. Remove/Take off immediately all contaminated clothing. Immediately flush skin with gently flowing, running water for at least 20 minutes. Do not rub area of contact. Obtain medical attention immediately. Wash contaminated clothing before reuse. Contaminated leather may require disposal.
- Eye contact* : Wear appropriate protective equipment. Protect unharmed eye. If in contact with eyes, immediately flush eyes with running water for at least 20 minutes. If contact lens is present, DO NOT delay flushing or attempt to remove the lens until flushing is done. Obtain medical attention immediately.



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Most important symptoms and effects, both acute and delayed

- : Causes skin irritation. Symptoms may include redness, blistering, pain and swelling. May cause an allergic skin reaction (e.g. swelling, rash and eczema). Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Flammable liquid and vapour.. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquids - Category 3

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Use water to cool fire-exposed containers. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply or any natural waterway. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

- : Remove all sources of ignition. Ventilate area of release. Stop the spill at source if it is safe to do so. Dike for water control. Use only non-sparking tools. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.



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Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): See section 15.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Wear protective gloves/clothing and eye/face protection. Use only in well-ventilated areas. Do not breathe fumes or mists. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from incompatibles. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Use only non-sparking tools. Keep containers tightly closed when not in use. Bond and ground transfer containers and equipment. Take precautionary measures against static discharge. Use explosion-proof electrical and ventilating equipment.

Conditions for safe storage

- : Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.

Incompatible materials

- : Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Bis(dibutylamino)methane	N/Av	N/Av	N/Av	N/Av
N-Butyl-l-butanamine	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Use explosion-proof electrical and ventilating equipment.

Respiratory protection

- : Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Seek advice from respiratory protection specialists.

Skin protection

- : Wear protective gloves/clothing. Advice should be sought from glove suppliers. Wear appropriate protective clothing to prevent skin contact, such as coveralls or long sleeved shirt, long pants, and shoes and socks.

Eye / face protection

- : Wear eye/face protection. Safety glasses with side-shields or chemical splash goggles, depending on workplace standards.

Other protective equipment

- : An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing vapour or mist. Do not ingest. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear colourless liquid.
Odour : Amine odour.
Odour threshold : Not applicable.
pH : 6.5
Melting Point/Freezing point : Pour point -28.9°C
Initial boiling point and boiling range
: Not available.
Flash point : 57.2°C
Flashpoint (Method) : Pensky Martens Closed Cup
Evaporation rate (BuAe = 1) : N/Av
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.)
: Not applicable.
Upper flammable limit (% by vol.)
: Not applicable.
Oxidizing properties : None.
Explosive properties : Not explosive
Vapour pressure : Not available.
Vapour density : Not available.
Relative density / Specific gravity
: 0.80-0.83
Solubility in water : Insoluble.
Other solubility(ies) : Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: Not available.
Auto-ignition temperature : Not applicable.
Decomposition temperature : Not available.
Viscosity : 8.1 mm²s @ 40°C
Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's)
: Not available.
Absolute pressure of container
: Not applicable.
Flame projection length : Not applicable.
Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Material is stable under normal conditions.
Possibility of hazardous reactions
: Hazardous polymerization does not occur.
Conditions to avoid : Avoid heat and open flame. Keep away from incompatibles. Keep container tightly closed when not in use.
Incompatible materials : Oxidizing agents
Hazardous decomposition products
: None known, refer to hazardous combustion products in Section 5.



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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

- Routes of entry inhalation : YES
- Routes of entry skin & eye : YES
- Routes of entry Ingestion : YES
- Routes of exposure skin absorption : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Mild respiratory irritant

Sign and symptoms ingestion

- : Ingestion may cause severe burns to the mucous membranes of the digestive tract.

Sign and symptoms skin

- : Causes skin irritation. Symptoms may include redness, blistering, pain and swelling.

Sign and symptoms eyes

- : Causes serious eye irritation. Symptoms may include severe pain, tearing, redness, swelling and blurred vision.

Potential Chronic Health Effects

- : Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : Not expected to have other reproductive effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : According to the classification criteria of U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012), this product is not expected to cause target organ toxicity through single or repeated exposures.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : Not available.

Toxicological data

- : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.
The calculated ATE values for this mixture are:
ATE inhalation (vapours) = >40 mg/L
ATE dermal =>5000 mg/kg
ATE oral = >5000 mg/kg

<u>Chemical name</u>	LC₅₀(4hr)	LD₅₀	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Bis(dibutylamino)methane	N/Av	N/Av	N/Av
N-Butyl-I-butanamine	>2 mg/L 1 h	189 mg/kg	N/Av

Other important toxicological hazards

- : None known or reported by the manufacturer.



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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Contains material that may be harmful in the environment. Do not release, unmonitored, into the environment.

N-Butyl-I-butanamine	111-92-2	5.5 mg/L (Rainbow trout)	N/Av	None.
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N-Butyl-I-butanamine	111-92-2	66 mg/L (Daphnia magna)	N/Av	None.
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N-Butyl-I-butanamine	111-92-2	N/Av	N/Av	None.
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Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential

: No data is available on the product itself.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Bis(dibutylamino)methane (CAS 20280-10-8)	N/Av	N/Av
N-Butyl-I-butanamine (CAS 111-92-2)	2.06 at 25 °C	N/Av

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. For disposal of unused or waste material, check with local, state and federal environmental agencies.



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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN1993	FLAMMABLE LIQUID, N.O.S. (Dibutylamine)	3	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass.				
IMDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Dibutylamine)	3	III	
IMDG Additional information	Consult the IMDG regulations for exceptions.				
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Dibutylamine)	3	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass.				
ICAO/IATA	UN1993	Flammable liquid, n.o.s. (Dibutylamine)	3	III	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : None reported by the manufacturer.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Bis(dibutylamino)methane	20280-10-8	Yes	N/Ap	N/Av	No	N/Ap
N-Butyl-I-butanamine	111-92-2	Yes	N/Ap	N/Av	No	N/Ap



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SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Flammable; Eye irritation; Skin irritation; Skin sensitization

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Bis(dibutylamino)methane	20280-10-8	No	N/Ap	No	No	No	No	No	No
N-Butyl-I-butanamine	111-92-2	No	N/Ap	No	Yes	No	Yes	Yes	Yes

Canadian Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product. All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Bis(dibutylamino)methane	20280-10-8	243-678-5	N/Av	N/Av	N/Av	N/Av	Present	Not listed
N-Butyl-I-butanamine	111-92-2	203-921-8	Present	Present	(2)-137	KE-04223	Present	HSR003412

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organisation
- IMDG: International Maritime Dangerous Goods
- Inh: Inhalation
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available



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NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
- 2. International Agency for Research on Cancer Monographs, searched 2019.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
- 4. Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - June 2019 version.
- 6. California Proposition 65 List - September 2019 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2019.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: CONCEPTUAL TECHNOLOGIES INC 6812/14-78 Avenue NW Edmonton, AB T6B 2J5 Telephone: 780-466-6146</p>	
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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