

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier used on the label

: **Flottec 60-01 Collector**

Recommended use of the chemical and restrictions on use

: Collector used in mining industry

Chemical family

: Dithiocarbamate

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Flottec, LLC

2505 Collingsworth Street, 2nd Floor

Houston, Texas 77026, U.S.A.

www.flottec.com

Information Telephone # : 1.713.425.7055

24 Hr. Emergency Tel # : Chemtrec 1.800.424.9300 (Within Continental U.S.); Chemtrec 1.703.527.3887 (Outside U.S.)

2. HAZARDS IDENTIFICATION

Classification of the chemical

Acute toxicity, oral (Category 4)

Acute toxicity, dermal (Category 3)

Skin irritation (Category 2)

Serious eye damage (Category 1)

Skin sensitizer (Category 1)

Label elements

Signal Word

Danger

Hazard statement(s)

H311: Toxic in contact with skin

H318: Causes serious eye damage

H302: Harmful if swallowed

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H400: Very toxic to aquatic life

Precautionary statement(s)

P261: Avoid breathing vapors, mist and spray.

P264: Wash face, hands and any exposed skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

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

P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing and eye protection.

P301+312+P330: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

P302+352: IF ON SKIN: Wash with soap and water.

P333+313: If skin irritation or a rash occurs: Get medical advice/attention.

P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310: Immediately call a doctor/physician.

P361 + P364: Remove/Take off immediately all contaminated clothing and wash before reuse.

P391: Collect spillage.

P405: Store locked up.

P501: Dispose of contents and container to a licensed chemical disposal agency in accordance with local, regional and national regulations.

Hazard pictogram(s)



Other hazards

Acute hazard to the aquatic environment (Category 1).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Common name	CAS #	Concentration / wt %
Sodium dibutyldithiocarbamate	136-30-1	35

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

4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : DO NOT induce vomiting, unless recommended by medical personnel. If victim is conscious wash out mouth with water and give 1-2 glasses of water to drink. Never give anything by mouth if victim is unconscious or convulsing. If spontaneous vomiting occurs, keep head below hips level to prevent aspiration into the lungs. Seek medical attention or contact a Poison Centre immediately.
- Inhalation* : Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen by trained personnel. If a problem develops or persists, seek medical attention.
- Skin Contact* : Flush with water for at least 15 minutes. Remove contaminated clothing and wash before reuse. Avoid touching eyes with contaminated body parts. If a problem develops or persists, seek medical attention.
- Eye Contact* : IMMEDIATELY flush with plenty of water. Remove contact lenses. Flush with water for at least 15 minutes. Hold eyelids apart to rinse properly. If a problem develops or persists, seek medical attention.

Symptoms : May cause severe eye irritation or eye damage. May cause skin irritation. May cause an allergic reaction of the skin.

Notes to the physician : Treat according to person's condition and specifics of exposure. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Dry chemicals, water spray, chemical foam, carbon dioxide (CO₂).

Unsuitable extinguishing media

: Do not use direct water jet.

Special hazards arising from the substance or mixture

: This product is an aqueous solution which does not support combustion unless the water has been evaporated. Emits toxic and corrosive fumes under fire conditions.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must wear self-contained breathing apparatus with full face mask. Firefighting suit may not be efficient against chemicals.

Special fire-fighting procedures

: Use water spray to cool fire-exposed containers. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Do not touch spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.

Environmental precautions

- : Prevent entry in sewer and other enclosed area. For a large spillage, consult the Department of Environment or the relevant authorities.

Methods and material for containment and cleaning up

- : Ventilate the area well. Stop leak, if it's possible to do so without risk. Absorb with inert material (soil, sand, vermiculite) and place in an appropriate waste disposal clearly identified. Finish cleaning by rinsing with water contaminated surface. Dispose via a licensed waste disposal contractor.

7. HANDLING AND STORAGE

Precautions for safe handling

- : Contact with acid liberates a toxic gas. Use only in well ventilated area. Avoid all contact with skin, eyes and clothing. Do not breathe vapors, mists or aerosols. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved. Keep in the workplace only the quantities necessary for the work being performed. Keep containers tightly closed when not used. Do not eat, do not drink and do not smoke during use. Wash hands, forearms and face thoroughly after handling this compound and before eating, drinking or using toilet articles. Remove contaminated clothing and wash before reuse.

Conditions for safe storage

- : Store tightly close and in properly labelled containers in a cool, dry and well ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from acids and from incompatible materials (see section 10). Keep away from direct sunlight and heat.

Storage temperature

- : 10 to 40°C (50 to 104 F)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Immediately Dangerous to Life or Health

- : No IDLH value reported

Exposure limits

- : No threshold limit value reported.

Exposure controls

Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas.

Respiratory protection

- : Respiratory protection is not required in normal use. Respiratory protection equipment (PPE) must be selected, fitted, maintained and inspected in accordance with regulations and CSA Standard Z 94.4 and approved by NIOSH / MSHA.

Skin protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear normal work clothing covering arms and legs as required by employer code. Wear an apron or long-sleeve protective coverall suit.

Eye / face protection

- : Wear chemical splash goggles. If risk of contact with eyes or the face, wear a face shield.

Hands

- : Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. Wear nitrile gloves, neoprene gloves, butyl rubber gloves or multilayer polymer laminate gloves. Before using, user should confirm impermeability. Discard gloves that show tears, pinholes, or signs of wear. Gloves must only be worn on clean hands. Wash gloves with water before removing them. After using gloves, hands should be washed and dried thoroughly.

Other protective equipment

- : Wear rubber boots to clean up a spill.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid	Flammability limits (% by vol.)	: N/Av
Color	: Pale yellow green to light	Flash point	: >93.4°C (200.1°F) SETA
Odor	: Slight sulfur odor	Auto-ignition temperature	: N/Av
Odor threshold	: N/Av	Sensibility to electrostatic charge	: No
pH	: < 11	Sensibility to sparks/friction	: No
Melting/Freezing point	: <5 °C (41 °F)	Vapor density (Air = 1)	: 0.6 to 0.7
Boiling point/range	: 100 °C (212 °F)	Relative density (Water = 1)	: 1.06 kg/L @ 20°C (68°F)
Solubility in water	: Soluble	Partition coefficient (n-octanol/water)	
Evaporation rate (BuAc = 1)	: 1		: N/Av
Vapor pressure	: 2.2kPa (16.5 mm Hg) @ 20°C (68°F)	Decomposition temperature	: N/Av
Volatiles (% by weight)	: 50	Viscosity	: N/Av
Flammability (solid, gas)	: Not flammable	Molecular mass	: N/Av

10. STABILITY AND REACTIVITY

Reactivity	: No information available for this product.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions (including polymerizations)	: Hazardous polymerization will not occur.
Conditions to avoid	: Avoid contact with incompatible materials.
Incompatible materials	: Strong acids, strong oxidizing agents (such as nitric acid, perchloric acid, peroxides, chlorates and perchlorates).
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Chemical name	LC ₅₀ (Inhalation, rat)	LD ₅₀ / mg/kg	
		(Oral, rat)	(Dermal, rabbit)
Sodium dibutyldithiocarbamate	N/Av	1430	<1000

Likely routes of exposure

Skin	: Yes
Eye	: Yes
Inhalation	: Yes
Ingestion	: Yes

Potential Health Effects:

Signs and symptoms of delayed, immediate and chronic effects

Skin	: Toxic if absorbed through skin. Widespread contact with skin for several hours can cause harmful amounts of material to be absorbed. May cause skin irritation. Prolonged contact may cause burns. The product is not considered to be corrosive to the skin based on alkalinity and pH of the solution.
Eye	: May cause severe eye irritation or eye damage.
Inhalation	: Overexposure may cause nose, throat and respiratory tract irritation.
Ingestion	: Harmful if swallowed. Swallowing will cause digestive tract disturbances resulting in nausea, vomiting, cramps and diarrhea.
Sensitization to material	: Sodium dibutyldithiocarbamate is a skin sensitizer (mousse, OECD 429). It is known that several dialkyldithiocarbamates products are skin sensitizers.
IRAC/NTP Classification	: No ingredients listed
Carcinogenicity	: Ingredients present at levels greater than or equal to 0.1% of this product are not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.

- Mutagenicity** : Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause mutagenic effect.
- Reproductive Effects** : Ingredients in this product present at levels greater than or equal to 0.1% are not known to cause effects on reproduction.
- Specific target organ effects – single exposure** : No target organ is listed.
- Specific target organ effects – repeated exposure** : No target organ is listed.
- Other information** : The oral acute toxicity estimate (ATE) of the mixture was calculated to be greater than 300 mg/Kg but lower than 2000 mg/kg. This value is classified according to GHS: Acute toxicity, oral (Category 4). The skin acute toxicity estimates (ATE) of the mixture was calculated to be greater than 200 mg/kg but lower than 1000 mg/Kg. This value is classified according to GHS: Acute toxicity, dermal (Category 3).

12. ECOLOGICAL INFORMATION

- Ecotoxicity** :
- | | | |
|---|------------------|--|
| Fish - Guppy (<i>Poecilia reticulata</i>) | LC ₅₀ | 62-211 mg/L; 96 h OECD 203 (Sodium dibutyldithiocarbamate) |
| Aquatic Invertebrate - <i>Daphnia magna</i> (static) | EC ₅₀ | 0.91 mg/L; 48 h OECD 202 (Sodium dibutyldithiocarbamate) |
| Aquatic Plant - <i>Algae</i> , <i>Chlorella pyrenoidosa</i> | EC ₅₀ | 1.4 mg/L; 96 h OECD 201 (Sodium dibutyldithiocarbamate) |
| Fish - <i>Branchydanio Renio</i> - fresh water | NOEC | 3.2 mg/L; 9 days OECD 210 (Sodium dibutyldithiocarbamate) |
- Persistence** : Not persistent in environment.
- Degradability** : Sodium dibutyldithiocarbamate is hydrolysed in acidic media. Moreover, it is Ready Biodegradability with 67% in 28 days (OECD Guideline 301D).
- Bioaccumulation potential** : Sodium dibutyldithiocarbamate is very soluble in water. Therefore, his potential to bioaccumulate should be very low.
- Mobility in soil** : Based on the high solubility in water, a high mobility in soil is to be expected.
- Other adverse environmental effects** : This chemical does not deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Important! Prevent waste generation. Use in full. DO NOT puncture, cut, heat or burn container, even after use. DO NOT throw residual to sewer, streams, sewers or drinking water supply. Return empty container properly labeled to supplier or everywhere there is a recovery program. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.

14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
DOT	Not regulated				
Additional Information		This material is not listed as a marine pollutant.			
TDG	Not regulated				
Additional Information					
IMO/IMDG	Not regulated				
Additional Information					
IATA	Not regulated				
Additional Information					

15 - REGULATORY INFORMATION

US Federal Information:

- Toxic Substance Control Act (TSCA) :
All ingredients are listed in the TSCA Inventory or otherwise comply with TSCA requirements.
- EPCRA Section 313 Toxic Chemicals:
No material is listed.
- CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):
No material is listed.
- EPCRA Section 302/304 Extremely Hazardous Substances:
No material is listed.
- Clean Water Act (CWA) 311 Hazardous Substances:
No material is listed.
- Clean Water Act (CWA) Priority Pollutants:
No material is listed.
- Clean Air Act (CAA) 111:
No material is listed.
- Clean Air Act (CAA 112b) HON - Hazardous Organic National Emission Air Pollutants:
No material is listed.
- Clean Air Act (CAA 112b) HAP - Hazardous Air Pollutants:
No material is listed.
- CAA 112(r) Regulated Chemicals for Accidental Release Prevention:
No material is listed.
- California Proposition 65:
No material is listed.

Canadian Information:

- Canada DSL and NDSL:
All ingredients are listed in the Domestic Substances List (DSL).
- Canadian National Pollutant Release Inventory Substances (NPRI):
No material listed.

WHMIS 1988:

Class D2B : Toxic material causing other toxic effects
Class E : Corrosive material

NFPA



16. OTHER INFORMATION

Other special considerations for handling : Provide adequate information, instruction and training for operators.

Prepared by: Flottec, LLC

Revised by: Mark Cappuccitti

REASON FOR REVISION: Section 1: updated name of product to commercial name

DISCLAIMER

The above information is believed to be accurate and represents the best information currently available to us. However, we make no warrantee of merchantability or any other warrant, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular uses.

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