

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier used on the label

: **Flottec 1844 Collector**

Recommended use of the chemical and restrictions on use

: Collectors for sulfide and industrial mineral applications

Chemical family

: Thionocarbamate

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 703-527-3887 (Outside U.S.)

2. HAZARDS IDENTIFICATION

Classification of the chemical

Acute Toxicity, Oral (Category 4)

Germ Cell Mutagenicity (Category 2)

Specific target organ toxicity, single exposure (Category 3)

Label elements

Signal Word

Danger

Hazard statement(s)

H302: Harmful if swallowed

H341: Suspected of causing genetic defects

H372: Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe 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.

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

P301+312: IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.

P330: Rinse mouth.

P308+313: If exposed or concerned: Get medical advice or attention.

P314: Call a doctor/physician if you feel unwell.

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

Hazardous to the aquatic environment – chronic (Category 1)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common name	CAS #	Concentration / wt %
Modified thionocarbamate	proprietary	60-90

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 irritation to 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

- : Material burns to give toxic and explosive hydrogen sulfide gas.

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

- : Remove sources of ignition. 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. Use non-sparkling and antistatic tools. Dispose via a licensed waste disposal contractor. Finish cleaning by rinsing with soapy water the contaminated surface.

7. HANDLING AND STORAGE

- Precautions for safe handling** : Use only in well-ventilated area. Do not breathe vapors, mists or aerosols. Avoid contact with skin, eyes and clothing. 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** : Storage and handling should follow the NFPA 30 Flammable and/or Combustible Liquids Code and the National Fire Code of Canada (NFCC) for class IIIb Combustible Liquids, Flashpoint > 93 °C. Ground or bond large containers. Store tightly close and in properly labeled containers in a cool, dry and well ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep away from direct sunlight and heat. Store away from oxidizing materials and incompatible materials (see section 10).
- Storage temperature** : 10 to 35°C (50 to 95°F)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Immediately Dangerous to Life or Health** : No value listed
- Exposure limits** : No value listed
- Exposure controls**
- Appropriate engineering controls** : Provide sufficient mechanical ventilation (general and/or local exhaust) to keep the airborne concentrations of vapors, mists, aerosols or dust below their respective occupational exposure limits.
- Respiratory protection** : Respiratory protection is required where exposure is above the established limit. 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. In case of insufficient ventilation or in confined or enclosed space and for an assigned protection factor (APF) up to 10 times the exposure limit: wear a half mask respirator with appropriate cartridges fitted with P100 filters. For an APF until maximum 100 times of exposure limit, wear a full face respirator mask with appropriate cartridges and P100 filters.
- 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

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|------------------------------------|-------------------------------|--|-----------------------|
| Physical state | : Liquid | Flammability limits (% by vol.) | : N/Av |
| Color | : Slight yellow to blue brown | Flash point | : 95 °C (203 °F) TCC |
| Odor | : Alcohol | Auto-ignition temperature | : N/Av |
| Odor threshold | : N/Av | Sensibility to electrostatic charge | : N/Av |
| pH | : N/Av | Sensibility to sparks/friction | : No |
| Melting/Freezing point | : N/Av | Vapor density (Air = 1) | : >1 |
| Boiling point/range | : N/Av | Relative density (Water = 1) | : 1.015 to 1.045 kg/L |
| Solubility in water | : Negligible in water | Partition coefficient (n-octanol/water) | |
| Evaporation rate (BuAc = 1) | : N/Av | | : N/Av |
| Vapor pressure | : 7 mm Hg @ 125 °C (257°F) | Decomposition temperature | : N/Av |
| | | Viscosity | : N/Av |
| Volatiles (% by weight) | : N/Av | Molecular mass | : N/Av |
| Flammability (solid, gas) | : N/Av | | |

SAFETY DATA SHEET

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 oxidizing agents (such as nitric acid, perchloric acid, peroxides, chlorates and perchlorates), strong acids, strong bases.
This product should not be mixed with acids since evolution of toxic and explosive hydrogen sulfide gas could result. This precaution does not, of course, apply to addition of this reagent to flotation pulps in amounts customarily used in flotation.
- Hazardous decomposition products** : Carbon monoxide; carbon dioxide; oxides of sulfur (includes sulfur di and trioxides); Hydrogen sulfide

11. TOXICOLOGICAL INFORMATION

Toxicological data

Chemical name	LC ₅₀ (Inhalation, rat)	LD ₅₀ / mg/kg	
		(Oral, rat)	(Dermal, rabbit)
Modified thionocarbamate	N/Av	N/Av	N/Av

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** : May cause redness and irritation of the skin.
- Eye** : May cause redness and irritation to eyes.
- Inhalation** : Mist exposure can cause irritation to nose, throat and lungs.
- Ingestion** : Swallowing will cause digestive tract disturbances resulting in nausea, vomiting, cramps and diarrhea.
- Sensitization to material** : Ingredients present at levels greater than or equal to 0.1% of this product are skin or respiratory 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 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 modified thionocarbamates is a compound of unknown oral, dermal and inhalation toxicity, however according to assessments conducted by the National Industrial Chemicals Notification and Assessment Scheme of Australia, adverse effects are noted from oral exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity	: No information available for this product.
Persistence	: No information available for this product.
Degradability	: Compounds of the thionocarbamate family are not readily biodegradable under the test conditions within the 28-day exposure period (OECD Guideline 301D). Moreover, they are not hydrolyzed at pH 4, 7 and 9.
Bioaccumulation potential	: No information available for this product.
Mobility in soil	: No information available for this product.
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. Residues and empty containers must be considered as hazardous waste. 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.
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14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
DOT	Not regulated				
Additional Information					
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).
The Minister of the Environment has published a Significant New Activity (SNAc) Notice in respect to this substance
- Canadian National Pollutant Release Inventory Substances (NPRI):
No material is listed.

NFPA



16. OTHER INFORMATION

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

Prepared by: Flottec, LLC

Revised by: C. Rodriguez

REASON FOR REVISION: updated Section 1 with new Flottec address.

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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