

## SAFETY DATA SHEET

### 1. IDENTIFICATION

Product identifier used on the label

: **Flottec 305 Collector**

Recommended use of the chemical and restrictions on use

: Flotation chemical used in mining industry

Chemical family

: Xanthate ester

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

**Flottec, LLC**

2505 Collingsworth Street, 2<sup>nd</sup> 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)

Acute toxicity, dermal (Category 3)

Skin corrosion/irritation (Category 2)

Serious eye damage/eye irritation (Category 2)

Specific target organ toxicity, single exposure, Respiratory tract irritation (Category 3)

Label elements

**Signal Word**

Warning

**Hazard statement(s)**

H311: Toxic in contact with skin

H302: Harmful if swallowed

H319: Causes serious eye irritation

H315: Causes skin irritation

H335: May cause respiratory irritation

**Precautionary statement(s)**

P261: Avoid breathing mist, vapors and spray.

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

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

P271: Use only outdoors or in a well-ventilated area.

P280: Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved.

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.

P332+313: If skin irritation occurs: Get medical advice or attention.

P304+340+P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

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

P337+313: If eye irritation persists: Get medical advice or attention.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

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

P403+233: Store in a well ventilated place. Keep container tightly closed.

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**

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Common name	CAS #	Concentration / wt %
Carbonodithioic acid, O-pentyl S-2-propenyl ester	2956-12-9	90 - 95
1-Pentanol	71-41-0	1 - 10

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 irritation to skin, eyes and respiratory tract.

**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*

: Dried powder, water spray, carbon dioxide (CO<sub>2</sub>), chemical foam.

*Unsuitable extinguishing media*

: Do not use direct water jet.

**Special hazards arising from the substance or mixture**

: Non-Flammable. May be combustible at high temperature. It must be preheated before ignition can occur. Emits toxic 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

- : 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. Dispose via a licensed waste disposal contractor. Finish cleaning by rinsing with water 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. Keep away from heat, sparks and open flame. 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. Keep away from direct sunlight and heat. Store away from oxidizing materials and incompatible materials (see section 10).

### Storage temperature

- : 15 to 30°C (59 to 86°F)

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Immediately Dangerous to Life or Health

- : No IDLH value reported.

### Exposure limits

1-Pentanol : TWA (8h) 100 ppm US AIHA

### 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 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. 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 organic vapor cartridges fitted with P100 filters. For an APF until maximum 100 times of exposure limit, wear a full face respirator mask with organic vapor 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

- : Wear nitrile or neoprene gloves. Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. 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 safety shoes. Wear rubber boots to clean up a spill.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	: Liquid	<b>Flammability limits (% by vol.)</b>	: N/Av
<b>Colour</b>	: Yellow-orange	<b>Flash point</b>	: 95°C (203°F) TCC
<b>Odor</b>	: Garlic	<b>Auto-ignition temperature</b>	: N/Av
<b>Odor threshold</b>	: N/Av	<b>Sensibility to electrostatic charge</b>	: N/Av
<b>pH</b>	: N/Av	<b>Sensibility to sparks/friction</b>	: No
<b>Melting/Freezing point</b>	: N/Av	<b>Vapor density (Air = 1)</b>	: N/Av
<b>Boiling point/range</b>	: N/Av	<b>Relative density (Water = 1)</b>	: 1.015 to 1.045 kg/L
<b>Solubility in water</b>	: Negligible in water	<b>Partition coefficient (n-octanol/water)</b>	: N/Av
<b>Evaporation rate (BuAc = 1)</b>	: N/Av	<b>Decomposition temperature</b>	: N/Av
<b>Vapor pressure</b>	: 0.9kPa (6.8 mm Hg) @ 125°C (257°F)	<b>Viscosity</b>	: N/Av
<b>Volatiles (% by weight)</b>	: N/Av	<b>Molecular mass</b>	: N/Av
<b>Flammability (solid, gas)</b>	: Not flammable		

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	: This product should not be mixed with acids since evolution of toxic and flammable hydrogen sulfide gas could result.
<b>Chemical stability</b>	: Stable under recommended storage conditions.
<b>Possibility of hazardous reactions (including polymerizations)</b>	: Hazardous polymerization will not occur.
<b>Conditions to avoid</b>	: Avoid heat, flame and sparks. Avoid contact with incompatible materials.
<b>Incompatible materials</b>	: Strong acids, strong bases, strong oxidizing agents (such as nitric acid, perchloric acid, peroxides, chlorates and perchlorates).
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

### Toxicological data

Chemical name	LC <sub>50</sub> (Inhalation, Rat)	LD <sub>50</sub> / mg/kg	
		(Oral, Rat)	(Dermal, Rabbit)
Carbonodithioic acid, O-pentyl S-2-propenyl ester	N/Av	590	280
1-Pentanol	N/Av	2200	2000

### Likely routes of exposure

<b>Skin</b>	: Yes
<b>Eye</b>	: Yes
<b>Inhalation</b>	: Yes
<b>Ingestion</b>	: Yes

### Potential Health Effects:

#### Signs and symptoms of delayed, immediate and chronic effects

<b>Skin</b>	: Severe irritation was observed after a 24-hour closed application of 1-Pentanol to rabbit skin, but not irritating after 4-hour closed application.
<b>Eye</b>	: 1-Pentanol is moderately irritating on the eyes of rabbits (OECD TG 405).
<b>Inhalation</b>	: May cause respiratory tract irritation.
<b>Ingestion</b>	: May cause gastro-intestinal irritation with nausea and vomiting.
<b>Sensitization to material</b>	: Ingredients present at levels greater than or equal to 0.1% of this product are skin or respiratory sensitizers.
<b>IRAC/NTP Classification</b>	: No ingredients listed
<b>Carcinogenicity</b>	: 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** : Respiratory system.
- 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). The acute toxicity estimate (ATE) by inhalation (aerosol/mist) of the mixture was calculated to be greater than 5 mg/L/4h.

## 12. ECOLOGICAL INFORMATION

- Ecotoxicity** :
  - Fish - Zebrafish - Brachydanio rerio LD<sub>50</sub> 530 mg/L; 96h [static] (1-Pentanol)
  - Aquatic Invertebrate - Crustaceans, EC<sub>50</sub> 341 mg/L; 48h [static] (1-Pentanol)  
 Daphnia Magna
- Persistence** : No data are available on the product itself.
- Degradability** : The product is not biodegradable (<70% in 28 days). 1-Pentanol in air decomposed by photochemical processes through oxidation by hydroxyl free radicals.
- Bioaccumulation potential** : No information available for this product. 1-Pentanol has a Bioconcentration Factor (BCF) value of 3, and its Log Kow value is 1.51, indicating its potential to bioaccumulate is very low. Its degradation by Biochemical Oxygen Demand BOD5 (O2 consumption) was reported as 59 to 87% in 5 days.
- Mobility in soil** : No information available for this product. The estimated Koc value of 160 suggests that 1-Pentanol is expected to have moderate mobility in soil (TOXNET Databases).
- 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				
<b>Additional Information</b>					
TDG	Not regulated				
<b>Additional Information</b>					
IMO/IMDG	Not regulated				
<b>Additional Information</b>					
IATA	Not regulated				
<b>Additional Information</b>					

## 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.
- CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):  
No material is listed.
- EPCRA Section 313 Toxic Chemicals:  
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:  
1-Pentanol (CAS no 71-41-0).
- 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:  
This product is on the Non-domestic Substances List (NDSL).
- Canadian National Pollutant Release Inventory Substances (NPRI):  
No material is listed.

**WHMIS 1988:**

- Class D1B : Toxic material causing immediate and serious toxic effects
- Class D2B : Toxic material causing other toxic effects

**NFPA**



**16. OTHER INFORMATION**

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

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**Prepared by:** Flottec, LLC

**Revised by:** C. Rodriguez

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**REASON FOR REVISION:** Updated section 1 with new Flottec address.

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**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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