

## SAFETY DATA SHEET

### 1. IDENTIFICATION

Product identifier used on the label

: **Flottec F120-10 Frother**

Recommended use of the chemical and restrictions on use

: Flotation chemical used in mining industry.

Chemical family

: Alcohol based

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

**Flottec, LLC**

2505 Collingsworth Street, 2nd Floor

Houston, TX 77026 U.S.A.

Número de teléfono : 1-713-425-7055

Teléfono de emergencia 24 Horas: Chemtrec 1-800-424-9300 (Dentro del País E.U.); Chemtrec 703-527-3887 (Fuera de E.U.)

### 2. HAZARDS IDENTIFICATION

Classification of the chemical

Flammable liquids (Category 3)

Serious eye damage/eye irritation (Category 2A)

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

Label elements

**Signal Word**

Warning

**Hazard statement(s)**

H226: Flammable liquid and vapor

H319: Causes serious eye irritation

H335: May cause respiratory irritation

**Precautionary statement(s)**

P210: Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P233: Keep container tightly closed.

P240: Ground or bond container and receiving equipment.

P241: Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.

P242: Use only non-sparking tools.

P261: Avoid breathing mist, vapors and spray.

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

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

P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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.

P370+378: In case of fire: Use chemical foam, dry chemical or carbon dioxide for extinction.

P403+P235+P233: Store in a well-ventilated place. Keep container tightly closed. Keep cool.

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**

Common name	CAS #	Concentration / wt %
Methyl amyl alcohol	108-11-2	99.5

**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. May cause redness and irritation of the skin. May cause irritation to nose, throat and respiratory tract. Swallowing will causes digestive tract disturbances resulting in nausea, vomiting, cramps and diarrhea.

**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, chemical foam, carbon dioxide (CO2).

*Unsuitable extinguishing media* : Do not use direct water jet.

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

: Flammable liquid and vapors. May be ignited by heat, sparks, flame or static electricity.

**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

: Keep away from heat, sparks and open flame. Avoid all sources of ignition. Use non-sparkling and antistatic tools. Ground/bond all containers when transfer large quantities (5 gallons US or 20 L and more). 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). Ground or bond large containers. 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

: <30°C (86°F)

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Immediately Dangerous to Life or Health

Methyl amyl alcohol : 400 ppm.

### Exposure limits

Methyl amyl alcohol	: STEL	40 ppm		ACGIH, BC, ON
		40 ppm	167 mg/m <sup>3</sup>	RSST (Pc)
	TWA (8h)	25 ppm		ACGIH, BC, ON, OSHA
		25 ppm	104 mg/m <sup>3</sup>	RSST (Pc)

### 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. Ensure that eyewash stations and safety showers are close to the workstation.

### Respiratory protection

: Respiratory protection is not required in normal use. 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 overall suit. To clean up a spill, if necessary, wear a synthetic polyethylene coveralls such as the Tychem (DuPont) or equivalent coveralls manufactured to provide protection against liquid chemical.

### 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.

### Eye / face protection

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

### 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>Color</b>	: Amber	<b>Flash point</b>	: 41°C (107.6°F)
<b>Odor</b>	: Mile odor	<b>Auto-ignition temperature</b>	: 335°C (635°F)
<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>	: -90°C (-130°F)	<b>Vapor density (Air = 1)</b>	: 3.5
<b>Boiling point/range</b>	: 131.6°C (266°F)	<b>Relative density (Water = 1)</b>	: 0.85 kg/L @ 15°C (59°F)
<b>Solubility in water</b>	: 21.8 g/l @ 20°C	<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>	: 3.7 hPa @ 20°C	<b>Viscosity</b>	: N/Av
<b>Volatiles (% by weight)</b>	: 100%	<b>Molecular mass</b>	: 102.18
<b>Flammability (solid, gas)</b>	: No inflamable		

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	: No information available for this product.
<b>Chemical stability</b>	: Stable under recommended storage conditions.
<b>Possibility of hazardous reactions (including polymerizations)</b>	: Hazardous polymerization will not occur under recommended storage.
<b>Conditions to avoid</b>	: Avoid heat, flame and sparks. Avoid contact with incompatible materials.
<b>Incompatible materials</b>	: Strong oxidizing agents (such as nitric acid, perchloric acid, peroxides, chlorates and perchlorates), inorganic acids, halogens.
<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)
Methyl amyl alcohol	>16 mg/l/4h	2590	2870

### 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>	: May cause redness and irritation of the skin. Methyl amyl alcohol causes skin erythema with slight oedema (OECD TG 404). Dryness and sloughing also developed in all animals.
<b>Eye</b>	: May cause severe eye irritation. Prolonged contact may cause damages to eyes. Methyl amyl alcohol causes eye irritation in rabbits (OECD TG 405). All animals developed corneal opacification, iridial inflammation, and conjunctival irritation. All reactions had resolved by either day seven or 14 after instillation..
<b>Inhalation</b>	: Harmful if inhaled. May cause irritation to nose, throat and respiratory tract. High concentrations may cause central nervous system depression characterized by headache, dizziness, vertigo, nausea, drowsiness and fatigue.
<b>Ingestion</b>	: May be harmful if swallowed. Swallowing will causes digestive tract disturbances resulting in nausea, vomiting, cramps and diarrhea.
<b>Sensitization to material</b>	: Ingredients present at levels greater than or equal to 0.1% of this product are skin or respiratory sensitizers. Skin sensitization, Guinea pig (OECD 406): negative test.
<b>IRAC/NTP Classification</b>	: 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**  
: Respiratory system, central nervous system..
- Specific target organ effects – repeated exposure**  
: No target organ is listed
- Other information** : No additional information.

## 12. ECOLOGICAL INFORMATION

- Ecotoxicity** :
- |   |                   |  |
|---|-------------------|--|
| Fish - Oncorhynchus mykiss - Rainbow trout                    | LC <sub>50</sub>  | 359 mg/L; 96h (Methyl amyl alcohol) OEDC 203 |
| Aquatic Invertebrate - Daphnia Magna, Water flea, fresh water | EC <sub>50</sub>  | 337 mg/L; 48h (Methyl amyl alcohol) OECD 202 |
| Algae, Pseudokirchneriella subcapitata                        | ECr <sub>50</sub> | 264 mg/L; 72h (Methyl amyl alcohol) OECD 201 |
| Fish (Chronic toxicity) - Rainbow trout - Oncorhynchus mykiss | NOEC              | 105 mg/L (Methyl amyl alcohol) OEDC 203      |
| Crustaceans, Daphnia Magna (Chronic toxicity)                 | NOEC              | 288 mg/L (Methyl amyl alcohol) OEDC 202      |
| Algae (Chronic toxicity) - Pseudokirchneriella subcapitata    | NOEC              | 75.5 mg/L (Methyl amyl alcohol) OEDC 202     |
- Persistence** : No persistent in environment
- Degradability** : Methyl amyl alcohol is readily biodegradable based on BOD5/COD >0.91. The product is degraded rapidly by photo-chemical reactions in air through indirect photolysis with production hydroxyl free radicals. The product is not subject to photolysis sunlight.
- Bioaccumulation potential** : Methyl amyl alcohol has a Bioconcentration Factor (BCF) value of 7.2, and its Log Kow value is 1.43, indicating its potential to bioaccumulate is low.
- Mobility in soil** : The estimated Koc value of 35 suggests that Methyl amyl alcohol is expected to have very high 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. 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.

**14. TRANSPORTATION INFORMATION**

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
DOT	UN 2053	METHYL ISOBUTYL CARBINOL	3	III	Flammable Liquid
<b>Additional Information</b>		This material is not listed as a marine pollutant. Permit required for transportation with proper placards displayed on vehicle.			
TDG	UN 2053	METHYL ISOBUTYL CARBINOL	3	III	Flammable Liquid
<b>Additional Information</b>		Emergency response guidebook 2012 - 129			
IMO/IMDG	UN 2053	METHYL ISOBUTYL CARBINOL	3	III	Flammable Liquid
<b>Additional Information</b>		Emergency schedules (EmS-No) F-E, S-D			
IATA	UN 2053	METHYL ISOBUTYL CARBINOL	3	III	Flammable Liquid
<b>Additional Information</b>					

**15 - REGULATORY INFORMATION**

**US Federal Information:**

- Toxic Substance Control Act (TSCA) :  
This material is 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:
- 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:
- 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 is listed.

**WHMIS 1988:**

Class B3 : Combustible Liquid  
 Class D2B : Toxic material causing other toxic effects

**NFPA**



**HMIS**





## 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:** K. Bissonette

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**REASON FOR REVISION:** Section 3: Changed concentration range/format

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