



# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Flottec PAX Collector

SYNONYMS:	Potassium Amyl Xanthate, Potassium Isoamyl Xanthate
CHEMICAL FAMILY:	Alkyl xanthate salt
MOLECULAR FORMULA:	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub> S <sub>2</sub> K
MOLECULAR WEIGHT	203.4
MANUFACTURER:	Flottec, LLC • 338 West Main Street • Boonton, New Jersey 07005 • USA
PRODUCT INFORMATION:	Tel: +1.973.588.4717 • Fax: +1.973.588.4719 • Web Site: www.flottec.com
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ISSUE DATE:	November 1, 2009

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

### OSHA REGULATED COMPONENTS

COMPONENT	CAS No.	% (w/w)	OSHA (PEL)	ACGIH (TLV)	Carcinogen
Potassium sulfide	1312-73-8	~ 1	Not established	Not established	-
Carbonodithioic acid, O-(3-methylbutyl) ester, potassium salt	1928-70-1	> 90	Not established	Not established	-
Potassium hydroxide	1310-58-3	0 - 1	2 mg/m <sup>3</sup> (Ceiling)	2 mg/m <sup>3</sup> (Ceiling)	-

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### APPEARANCE AND ODOR

Color: Yellow-green  
Appearance: Pellets, flakes, or powder  
Odor: Disagreeable

#### STATEMENT OF HAZARD

**DANGER!**      **SELF-HEATING MATERIAL**  
**MAY BE SPONTANEOUSLY COMBUSTIBLE**  
**MAY FORM EXPLOSIVE DUST-AIR MIXTURES**  
**HARMFUL IF ABSORBED THROUGH SKIN**  
**DUST IRRITATING**  
**CAUSES EYE AND SKIN IRRITATION**

### POTENTIAL HEALTH EFFECTS

#### EFFECTS / ROUTES OF EXPOSURE

The acute oral (rat) LD50 and dermal (rabbit) LD50 values are estimated to be >1,000 mg/kg and >500 mg/kg, respectively. Skin or eye contact with solutions of this product may cause moderate skin and eye irritation. Airborne dust may cause significant eye, skin or respiratory tract irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

## 4. FIRST AID MEASURES

<b>INGESTION:</b>	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.
<b>SKIN CONTACT:</b>	Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.
<b>EYE CONTACT:</b>	Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.
<b>INHALATION:</b>	Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

## 5. FIREFIGHTING MEASURES.

### EXTINGUISHING MEDIA AND FIRE FIGHTING INSTRUCTIONS

<b>Extinguishing Media:</b>	Use carbon dioxide, dry chemical or large quantities of water.
<b>Protective Equipment:</b>	Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).
<b>Special Hazards:</b>	Solid xanthates are stable when kept cool and dry. Exposure to heat and moisture can cause decomposition to flammable and explosive vapor of carbon disulfide. Since xanthates decompose in solution, even at room temperature, fire and explosion hazards can develop with aging.

## 6. ACCIDENTAL RELEASE MEASURES

<b>PERSONAL PRECAUTIONS:</b>	Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. Refer to Section 8 (Exposure Controls/Personal Protection) for appropriate personal protective equipment.
<b>METHODS FOR CLEAN UP:</b>	Sweep up into containers for disposal. Flush spill area with water.
<b>ENVIRONMENTAL PRECAUTIONS:</b>	Dispose of in accordance with EPA rules and regulations.

## 7. HANDLING AND STORAGE

### HANDLING

<b>Precautionary Measures :</b>	Avoid excessive heat or moisture. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Wash thoroughly after handling. Use non-sparking tools and do not smoke when opening drum. Use with adequate ventilation. Contains finely divided material. Dust suspended in air may ignite with static discharge, sparks or flame. Equipment, including venting systems, should be grounded. Provide adequate ventilation in areas of use to remove dust. Wash contaminated clothing before reuse.
<b>Special Handling Statements :</b>	Minimize dust. Special precautions against fire and explosion must be observed in (1) pumping xanthate solutions, (2) draining mobile tanks, (3) cleaning mobile tanks, and (4) performing maintenance work on storage tanks and pipelines leading to and from tanks. Use non-sparking tools and do not smoke when opening drums of xanthate. DUST EXPLOSION HAZARD CLASS - 2 Handling of material should be in accordance with standards for venting of deflagrations (e.g. NFPA-68). If handled with flammable or combustible materials the explosion hazard may increase

### STORAGE

Heating or overexposure to moisture of solid xanthates or heating or aging of xanthate solutions causes some decomposition to poisonous and flammable carbon disulfide. Storage tanks should have certain design features for maximum safety, and the vapor space should be free of sources of ignition.

<b>Storage Temperature:</b>	Store at <32.2 - 10 °C 90 - 50 °F
<b>Reason:</b>	Safety

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**ENGINEERING MEASURES** Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

### PERSONAL PROTECTIVE EQUIPMENT

**RESPIRATORY PROTECTION:** Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

**EYE PROTECTION:** Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

**SKIN PROTECTION:** Avoid skin contact. Wear impermeable gloves and suitable protective clothing.

**ADDITIONAL ADVICE:** Food, beverage and tobacco products should not be carried, stored or consumed where this material is used. Before eating, drinking, or smoking, wash face and hands with soap and water.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>COLOR:</b>	Yellow-green
<b>APPEARANCE:</b>	Pellets, flakes, or powder
<b>ODOR:</b>	Disagreeable
<b>BOILING POINT:</b>	Not applicable
<b>MELTING POINT:</b>	491 - 536°F; 255 - 280°C
<b>VAPOR PRESSURE:</b>	Not applicable
<b>SPECIFIC GRAVITY:</b>	Not available
<b>VAPOR DENSITY:</b>	Not applicable
<b>% VOLATILE (BY WT.):</b>	~ 1.5
<b>pH:</b>	Not applicable
<b>SATURATION IN AIR (% by Vol):</b>	Not applicable
<b>EVAPORATION RATE:</b>	Not applicable
<b>SOLUBILITY IN WATER:</b>	35 g/100 g at 20°C
<b>VOLATILE ORGANIC CONTENT:</b>	Not available
<b>FLASH POINT:</b>	Not applicable
<b>FLAMMABLE LIMITS (% BY VOL.):</b>	Not applicable
<b>AUTO IGNITION TEMPERATURE:</b>	>248°F; 120°C (value for carbon disulfide)
<b>DECOMPOSITION TEMPERATURE:</b>	>267.8 - 536°F; 131 - 280°C
<b>PARTIAL COEFFICIENT (n-octanol/water):</b>	Not available
<b>ODOR THRESHOLD:</b>	See Section 2 for exposure limits

## 10. STABILITY AND REACTIVITY

<b>STABILITY:</b>	Stable
<b>CONDITIONS TO AVOID:</b>	Containers filled with this product should be kept closed when not in use. Keep container in a cool, well-ventilated area. Exposure of the solid xanthate to heat or moisture and heating or aging of xanthate solutions. Avoid prolonged exposure to heat; avoid strong acids, alkalis and oxidizing agents. Keep water and moist air out of container.
<b>POLYMERIZATION:</b>	Will not occur
<b>CONDITIONS TO AVOID:</b>	None known
<b>MATERIALS TO AVOID:</b>	Strong oxidizing agents, acidic material. High temperatures
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Carbon disulfide, carbon monoxide, carbon dioxide, oxides of sulfur (includes sulfur di and tri oxides), hydrogen sulfide

## 11. TOXICOLOGICAL INFORMATION

### Toxicological information for the product is found under SECTION 3: HAZARDS IDENTIFICATION

Toxicological information on the regulated components of this product is as follows:

Potassium hydroxide has an acute oral (rat) LD50 value of 273 mg/kg. Acute overexposure to potassium hydroxide or dusts causes severe respiratory irritation. Potassium hydroxide is severely irritating to the eyes and skin.

Potassium sulfide may cause eye and skin irritation. Under acidic conditions, potassium sulfide can decompose to produce flammable poisonous hydrogen sulfide gas.

Potassium 3 methyl butyl xanthate has an estimated acute oral (rat) LD50 and acute dermal (rabbit) LD50 values of > 1,000 mg/kg and > 500 mg/kg, respectively, based on similar materials. Direct contact with this material may cause moderate eye and skin irritation. Airborne dust may cause significant eye, skin or respiratory tract irritation.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause birth defects or other reproductive harm.

## 12. ECOLOGICAL INFORMATION

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material is not readily biodegradable.

All ecological information provided was conducted on a structurally similar product.

### ALGAE TEST RESULTS

Test	Duration	Procedure	Species	Results

### FISH TEST RESULTS

Test	Duration	Procedure	Species	Results
Acute toxicity, freshwater (OECD 203)	96 hr.	-	Rainbow Trout ( <i>Oncorhynchus mykiss</i> )	> 10 – 100 mg/l LC50

### INVERTEBRATE TEST RESULTS

Test	Duration	Procedure	Species	Results
Acute Immobilization (OECD 202)	48 hr.	-	Water Flea ( <i>Daphnia magna</i> )	>1 - 10 mg/l EC50

### ACCUMULATION TEST RESULTS

Test	Duration	Procedure	Species	Results

### DEGRADATION

Test	Duration	Procedure	Results
Biodegradability	-	-	< 70 %
COMMENTS:	Information based on structurally similar material		

## 13. DISPOSAL CONSIDERATIONS

<b>RECOMMENDATIONS FOR THE PRODUCT:</b>	In accordance with regulations for special waste, product must be taken, after pretreatment, to an authorized special waste incineration plant.
<b>RECOMMENDATIONS FOR PACKAGING:</b>	Packaging that cannot be cleaned should be disposed of like the product.
<b>RECOMMENDED CLEANSING AGENT:</b>	Water

## 14. Transportation Information

This section provides basic shipping classification information.  
 Refer to appropriate transportation regulations for specific requirements.

<b>U.S. DOT</b>				
PROPER SHIPPING NAME:	XANTHATES			
HAZARD CLASS	4.2			
PACKING GROUP:	II			
UN/ID NUMBER:	UN3342			
TRANSPORT LABEL REQUIRED:	Spontaneously Combustible Marine Pollutant			
TECHNICAL NAME (N.O.S.):	Contains potassium amyl xanthate			
HAZARDOUS SUBSTANCE:	Not applicable			
COMMENTS:	Marine Pollutants - DOT requirements specific to Marine Pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars or aircraft.			
<b>TRANSPORT CANADA</b>				
PROPER SHIPPING NAME:	XANTHATES			
HAZARD CLASS	4.2			
PACKING GROUP:	II			
UN/ID NUMBER:	3342			
TRANSPORT LABEL REQUIRED:	Spontaneously Combustible Marine Pollutant			
TECHNICAL NAME (N.O.S.):	Contains potassium amyl xanthate			
<b>ICAO/IATA</b>				
PROPER SHIPPING NAME:	XANTHATES			
HAZARD CLASS:	4.2			
PACKING GROUP:	II			
UN NUMBER:	3342			
TRANSPORT LABEL REQUIRED:	Spontaneously Combustible			
PACKING INSTRUCTIONS/ MAXIMUM NET QUANTITY:	PASSENGER AIRCRAFT	415	15 kg	
	CARGO AIRCRAFT	417	50 kg	
TECHNICAL NAME (N.O.S.):	Contains potassium amyl xanthate			
<b>IMO</b>				
PROPER SHIPPING NAME:	XANTHATES			
HAZARD CLASS:	4.2			
UN NUMBER:	3342			
PACKING GROUP:	II			
TRANSPORT LABEL REQUIRED:	Spontaneously Combustible Marine Pollutant			
TECHNICAL NAME (N.O.S.):	Contains potassium amyl xanthate			

## 15. REGULATORY INFORMATION

### INVENTORY INFORMATION

<b>United States (USA)</b>	All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.
<b>Canada</b>	This product contains components not on the Domestic Substances List. These components are on the Non-Domestic Substances List.
<b>European Union (EU)</b>	All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in compliance with Council Directive 67/548/EEC and its amendments.
<b>Australia</b>	All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.
<b>China</b>	All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
<b>Japan</b>	All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.
<b>Korea</b>	All components of this product are NOT included on the Korean (ECL) inventory.
<b>Philippines</b>	All components of this product are NOT included on the Philippine (PICCS) inventory.

### OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component	CAS NO.	% (w/w)	TPQ (lbs)	RQ (lbs)	S313	TSCA 12B
Carbon disulfide	75-15-0	~ 0.001	10,000	100	YES	YES

### PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA

ACUTE (Y)

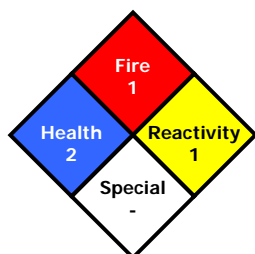
CHRONIC (N)

FIRE (Y)

REACTIVE (Y)

PRESSURE (N)

## 16. OTHER INFORMATION



### NFPA HAZARD RATING (National Fire Protection Association)

<b>HEALTH</b> - 2 -	Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
<b>FIRE</b> - 1 -	Materials that must be preheated before ignition can occur.
<b>REACTIVITY</b> - 1 -	Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures.

**REASON FOR REVISION:** New format; Revised all sections

**Prepared By:** F. Cappuccitti

**Revised By:** R. Nix

**IMPORTANT:** The above information is believed to be accurate and represents the best information currently available to us. However, we make no warranty 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.