



Material Safety Data Sheet (MSDS)

Product and Company Identification

Product Name **Sodium Ethyl Xanthate**

Use Purification, adsorption of contaminants

Distributor/Agent 7D Holdings SA (Pty) Ltd

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Country of Manufacture South Africa

Section 1: CHEMICAL PRODUCT IDENTIFICATION

1.1 Product Name..... **Sodium Ethyl Xanthate**
 Chemical Family Xanthates; carbonodithioic acid salt
 Synonyms Sodium ethyl xanthate; SEX; carbonic acid, dithio-O-ethyl ester, sodium salt; carbonodithioic acid, O-ethyl ester, sodium salt.
 Formula C₃H₆OS₂ Na

Section 2: COMPOSITION, INFORMATION ON INGREDIENTS

2.1 Chemical Ingredients (% by wt.)

		<u>Solid</u>	<u>Solution</u>
Sodium ethyl xanthate	CAS #:140-90-9	80-84%	30-33%
Water	CAS #:7732-18-5	3% Max.	67-70%
Free Alkalinity		2% Max.	

(See Section 8 for exposure guidelines)

Section 3: HAZARDS IDENTIFICATION

NFPA: **Health- 1** **Flammability- 1** **Reactivity- 1** **(Solid)**
 Health- 2 **Flammability- 3** **Reactivity- 1** **(Solution)**

EMERGENCY OVERVIEW

Caution: Liquid solution is strongly alkaline and contact with eyes or skin may result in mild to severe irritation of the skin. Solid product is slightly alkaline contact with skin or eyes may cause marked irritation. Ingestion of solid or liquid product will irritate mouth, throat and gastrointestinal tract. Inhalation of product dust may cause irritation of respiratory airways.



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Section	3:	HAZARDS IDENTIFICATION (Cont.)
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3.1 POTENTIAL HEALTH EFFECTS

EYE: Contact with the eyes by product solution may cause mild to severe irritation. Product dust may cause irritation or a burning sensation.

SKIN CONTACT: Skin contact with highly alkaline solution may result in mild to severe skin irritation. Prolonged or repeated contact with product dust may cause skin irritation.

SKIN ABSORPTION: Absorption is unlikely to occur.

INGESTION: Ingestion of product solution may cause mild to severe irritation of mouth, throat and gastrointestinal tract including nausea, vomiting and diarrhea. Xanthates have a low oral toxicity to humans.

INHALATION: Inhalation of product mist may cause irritation of the nose, throat and respiratory tract.

CHRONIC EFFECTS/CARCINOGENICITY: Not listed as a carcinogen by NTP, IARC or OSHA. Xanthate salts may cause irritation of the respiratory tract.

Section	4:	FIRST AID MEASURES
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4.1 EYES: Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye. Obtain immediate medical attention.

4.2 SKIN: Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Obtain medical attention if any irritation occurs.

4.3 INGESTION: If victim is conscious, have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink a glass of water. If vomiting occurs naturally, have victim lean forward to avoid aspiration. Repeat administration of water. Obtain immediate medical attention.

4.4 INHALATION: Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start mouth to mouth resuscitation. If heart has stopped beating, external heart massage should be applied. Obtain medical attention.

Section	5:	FIRE FIGHTING MEASURES
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5.1 FLAMMABLE PROPERTIES

FLASH POINT: 46° - 47°F (12°C)

FLASH POINT: -22°F (-30°C)

KI - 4 solution

Carbon disulfide

METHOD USED: PMCC

METHOD USED: Closed cup

5.2 FLAMMABLE LIMITS (Carbon disulfide) **LFL:** 1.3% **UFL:** 50%

5.3 EXTINGUISHING MEDIA: Carbon dioxide, dry chemical or foam



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Section 5: FIRE FIGHTING MEASURES (Cont.)

5.4 FIRE & EXPLOSIVE HAZARDS: Solid xanthates upon aging, heating or exposure to moisture will generate carbon disulfide (CS₂) vapors and spontaneous combustion can occur. Heating of xanthate solutions will also form carbon disulfide vapors. Storage containers should be equipped with a forced exhaust to prevent buildup of these vapors. Storage containers should be carefully grounded.

Keep storage containers involved in a fire cooled with water spray. Heating will form CS₂ vapors.

5.5 FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus, positive pressure, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Small releases: Small spills of dry product can be carefully swept up. The product is readily soluble in water but should not be flushed down drains or used to help clean up dust spills (evolution of CS₂ vapors). Confine and absorb small liquid releases on sand earth or other inert absorbent. Pick up contaminated soil in labeled containers for disposal in chemical waste landfills.

6.2 Large releases: Confine area to qualified personnel. Extinguish/remove all ignition sources. Shut off release if safe to do so. Dike spill area to prevent runoff into sewers, drains or surface waterways (potential aquatic toxicity). Recover as much of the solution as possible. Treat remaining material as a small release.

Section 7: HANDLING and STORAGE

7.1 Handling: Avoid contact with eyes. Use only in a well ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated breathing of dust or vapors. Avoid prolonged or repeated contact with the skin. Ground drums and bond transfer containers (grounding clips must contact bare metal). (See Section 5, for fire dangers) Use caution opening containers with xanthates of unknown age (CS₂ vapor accumulation).

7.2 Storage: Store in cool, dry, well ventilated areas. Do not allow dry product to come in contact with moisture. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store tote and smaller containers out of direct sunlight at moderate temperatures. Storage containers should be properly grounded. (See Section 10.4 for materials of construction)

Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

8.1 RESPIRATORY PROTECTION: None generally required. If conditions exist where dust or mist may be generated, a NIOSH/MSHA approved mist respirator should be worn. If CS₂ vapors are present an appropriate respirator according to the concentration should be used.

8.2 SKIN PROTECTION: Neoprene rubber gloves, apron and boots (as appropriate) should be worn to prevent repeated or prolonged contact with the dust or liquid. Wash any contaminated clothing prior to reuse.



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Section 8: EXPOSURE CONTROLS, PERSONAL PROTECTION (Cont.)

8.3 EYE PROTECTION: Chemical goggles and preferably a full face shield.

Maintain an eyewash/safety shower in immediate work areas.

8.4 EXPOSURE GUIDELINES:

	OSHA		ACGIH	
	TWA	STEL	TLV	STEL
Carbon disulfide	20 ppm	30 (ceiling)	10 ppm	NA

8.5 ENGINEERING CONTROLS: Engineering control methods to reduce hazardous vapor exposure are preferred. Methods include mechanical ventilation (dilution and local exhaust) and process control.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

	<u>Solid</u>	<u>Solution</u>
9.1 APPEARANCE:	Yellow to green pellets	Amber clear liquid.
9.2 ODOR:	Slight sulfur odor	Mild sulfur odor
9.3 BOILING POINT:	Not applicable	202-203° F (94° C)
9.4 VAPOR PRESSURE:	Not applicable	Not determined
9.5 VAPOR DENSITY:	Not applicable	Not determined
9.6 SOLUBILITY IN WATER:	Complete	Complete
9.7 SPECIFIC GRAVITY:	0.8 - 0.825	1.17-1.18 (9.75-9.83 lbs/gal)
9.8 FREEZING POINT:	Not Applicable	Not determined
9.9 pH:	Not applicable	11-12
9.10 VOLATILE:	Not applicable	Not determined

Section 10: STABILITY and REACTIVITY

10.1 STABILITY: This is a stable material

10.2 HAZARDOUS POLYMERIZATION: Will not occur

10.3 HAZARDOUS DECOMPOSITION PRODUCTS: Carbon disulfide, trithiocarbonate, ethyl alcohol.

10.4 INCOMPATIBILITY: Strong oxidizers can cause fire or explosions. Acids will accelerate the hydrolysis of xanthates. Xanthates are not compatible with copper, or its alloys (i.e. bronze, brass, etc.). These materials should not be used in handling systems or storage containers. (SEE Section 7.2, Storage)

Section 11: TOXICOLOGICAL INFORMATION

11.1 ORAL: Data not available



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Section 11: TOXICOLOGICAL INFORMATION (Cont.)

- 11.2 **DERMAL:** Data not available
- 11.3 **INHALATION:** Data not available
- 11.4 **CHRONIC/CARCINOGENICITY:** No evidence available
- 11.5 **TERATOLOGY:** Data not available
- 11.6 **REPRODUCTION:** Data not available
- 11.7 **MUTAGENICITY:** Data not available

Section 12: ECOLOGICAL INFORMATION

Data not available

Section 13: DISPOSAL CONSIDERATIONS

Solid xanthates do not meet the criteria for a hazardous waste as specified in 40 CFR 261. However KI-4 solutions have a flash point of 46 - 47°F which meets the criteria of a D001 characteristic waste. Consult state and local regulations for different or more restrictive disposal regulations.

Section 14: TRANSPORT INFORMATION

	<u>Solid</u>	<u>Solution</u>
14.1 DOT Shipping Name:	xanthates	Flammable liquids, corrosive, n.o.s.
14.2 DOT Hazard Class:	4.2	3
14.3 UN/NA Number:	UN3342	UN 2924
14.4 Packing Group:	III	II
14.5 DOT Placard:	Spontaneously combustible	Flammable
14.6 DOT Label(s):	Spontaneously combustible	Flammable, corrosive
14.7 IMO Shipping Name: n.o.s	Xanthates	Flammable liquids, corrosive,
14.8 RQ (Reportable Quantity):	NA	100 lbs (waste, solution spills)
14.9 RR STCC Number:	NA	NA



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Section	15:	REGULATORY INFORMATION
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15.1 OSHA:	This product is listed as a hazardous material under criteria of the Federal	OSHA Hazard Communication Standard, 29 CFR 1910.1200.										
15.2 SARA TITLE III:	a. EHS (Extremely Hazardous Substance) List:	No										
	b. Section 311/312, (Tier I,II) Categories:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Immediate (acute)</td> <td>Yes</td> </tr> <tr> <td>Fire</td> <td>Yes</td> </tr> <tr> <td>Sudden release</td> <td>No</td> </tr> <tr> <td>Reactivity</td> <td>Yes</td> </tr> <tr> <td>Delayed (chronic)</td> <td>No</td> </tr> </table>	Immediate (acute)	Yes	Fire	Yes	Sudden release	No	Reactivity	Yes	Delayed (chronic)	No
Immediate (acute)	Yes											
Fire	Yes											
Sudden release	No											
Reactivity	Yes											
Delayed (chronic)	No											
	c. Section 313 (Toxic Release Reporting-Form R):	No										
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><u>Chemical Name</u></td> <td style="width: 33%;"><u>CAS Number</u></td> <td style="width: 33%;"><u>Concentration</u></td> </tr> </table>	<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration</u>								
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	d. TPQ (Threshold Planning Quantity):	No										
15.3 CERCLA/SUPERFUND:	RQ (Reportable Quantity)	100 lbs (Waste solution only)										
15.4 TSCA (Toxic Substance Control Act) Inventory List:	Yes											
15.5 RCRA (Resource Conservation and Recovery Act) Status:		D001, (solution)										
15.6 WHMIS (Canada) Hazard Classification:	B6	E, B3,										
15.7 DOT Hazardous Material: (See Section 14)		Yes										
15.8 CAA Hazardous Air Pollutant (HAP)		No										

Section	16:	OTHER INFORMATION
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<p>THE INFORMATION PUBLISHED IN THIS MATERIAL SAFETY DATA SHEET HAS BEEN COMPILED FROM OUR EXPERIENCE AND OSHA, ANSI, NFPA, DOT, ERG, AND CHRIS. IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SUITABILITY OF THIS INFORMATION FOR THE ADOPTION OF NECESSARY SAFETY PRECAUTIONS. WE RESERVE THE RIGHT TO REVISE MATERIAL SAFETY DATA SHEETS PERIODICALLY AS NEW INFORMATION BECOMES AVAILABLE.</p>
