



SAFETY DATA SHEET

Product Name **SODIUM ETHYL XANTHATE SOLUTION**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name COOGEE CHEMICALS
Address Cnr of Patterson and Kwinana Beach Roads, Kwinana, WA, AUSTRALIA, 6167
Telephone (08) 9439 8200
Fax (08) 9439 8300
Emergency 1800 800 655
Email businessrelations@coogee.com.au
Web Site <http://www.coogee.com.au>
Synonym(s) CARBONODITHIOIC ACID O-ETHYL ESTER • SEX • SODIUM ETHYL DITHIOCARBAMATE • SODIUM ETHYL XANTHATE
Use(s) GOLD PROCESSING REAGENT • ORE FLOTATION
SDS Date 13 Jul 2009

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO ASSC CRITERIA

RISK PHRASES

R21/22 Harmful in contact with skin and if swallowed.
R31 Contact with acids liberates toxic gas.
R36/38 Irritating to eyes and skin.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

SAFETY PHRASES

S1/2 Keep locked up and out of reach of children.
S16 Keep away from sources of ignition - No smoking.
S33 Take precautionary measures against static discharges.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	2922	DG Class	8	Subsidiary Risk(s)	6.1
Packing Group	III	Hazchem Code	2X	EPG	8C1

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
SODIUM ETHYL XANTHATE	Not Available	140-90-9	40%
CARBON DISULPHIDE (EVOLVED)	C-S2	75-15-0	Not Available
WATER	H2O	7732-18-5	60%

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
Advice to Doctor	Treat symptomatically
First Aid Facilities	Eye wash facilities should be available.

5. FIRE FIGHTING MEASURES

Flammability	Highly flammable vapour (carbon disulphide). Steam pipes may ignite carbon disulphide. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, pilot lights, heaters, naked lights, mobile phones etc. when handling. Earth containers when dispensing fluids.
Fire and Explosion	Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas. Containers may explode in fire.
Extinguishing	Water jets. Prevent contamination of drains or waterways.
Hazchem Code	2X

6. ACCIDENTAL RELEASE MEASURES

Spillage	Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then cover / absorb spill with non-combustible absorbant material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all ignition sources. Use personal protective equipment.
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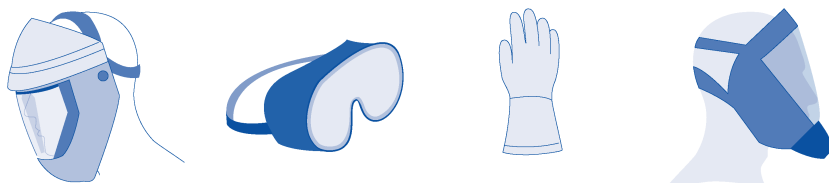
7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from oxidising agents, acids, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation systems.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds	CARBON DISULPHIDE (EVOLVED) ES-TWA: 10 ppm (31 mg/m3) WES-TWA: 10 ppm (31 mg/m3) SODIUM ETHYL XANTHATE ES-TWA: 10ppm (Carbon disulphide)
Biological Limits	No biological limit allocated.
Engineering Controls	Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.
PPE	Wear splash-proof goggles, rubber or PVC gloves, a faceshield and a Type A (Organic vapour) respirator. Wear cotton coveralls. At high vapour levels, wear: air-supplied hood.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	CLEAR ORANGE LIQUID	Solubility (Water)	SOLUBLE
Odour	UNPLEASANT ODOUR	Specific Gravity	1.2
pH	NOT AVAILABLE	% Volatiles	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE (CS2 HIGHLY FLAMMABLE)
Vapour Density	NOT AVAILABLE	Flash Point	NOT RELEVANT (CS2 = -30°C)
Boiling Point	> 100°C	Upper Explosion Limit	60 % (C2S)
Melting Point	NOT AVAILABLE	Lower Explosion Limit	0.6 % (C2S)
Evaporation Rate	NOT AVAILABLE		
Autoignition Temperature	NOT RELEVANT (CS2 = 90°C)		

10. STABILITY AND REACTIVITY

Material to Avoid	Incompatible with oxidising agents (eg. hypochlorites) and acids (eg. nitric acid).
Decomposition	May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Toxic - irritant. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Carbon disulphide (present as a decomposition product) may result in an increased risk of nerve damage, birth defects and heart, liver and kidney damage.
Eye	Irritant. Contact may result in irritation, lacrimation, pain, redness and conjunctivitis. May result in burns with prolonged contact.
Inhalation	Toxic - irritant. Over exposure may result in irritation of the nose and throat, coughing, nausea, headache, fatigue, loss of appetite and vomiting. High level exposure may result in delirium, coma and death from respiratory paralysis. Chronic exposure to carbon disulphide vapour may result in nerve, heart and liver damage, and possible birth defects. Very high vapour pressure increases absorption through inhalation. The higher the temperature of the solution and the older the solution, the more carbon disulphide will be present.
Skin	Irritant. Contact may result in drying and defatting of the skin, rash and dermatitis. Prolonged or repeated contact may result in burns. May be absorbed through skin with harmful effects.
Ingestion	Toxic. Ingestion may result in burns, gastrointestinal irritation, nausea, abdominal pain, vomiting and diarrhoea.
Toxicity Data	SODIUM ETHYL XANTHATE (140-90-9) LD50 (Ingestion): 730 mg/kg (mouse, 10% Solution) LD50 (Skin): < 1000 mg/kg (rabbit) CARBON DISULPHIDE (EVOLVED) (75-15-0) LC50 (Inhalation): 10 g/m ³ /2 hours (mouse) LCLo (Inhalation): 2000 ppm/5 minutes (human) LD50 (Ingestion): 2125 mg/kg (guinea pig) LDLo (Ingestion): 14 mg/kg (human) TCLo (Inhalation): 40 mg/m ³ (man) TDLo (Ingestion): 350 mg/kg (rabbit)

12. ECOLOGICAL INFORMATION

Environment	Xanthates hydrolyse (react with water) readily. If discharged to waterways, xanthates may persist for several days, hydrolysing slowly in the neutral environment. Bioaccumulation is unlikely. Highly toxic to aquatic life. May form complexes with heavy metals, increasing their uptake, ie fish may accumulate heavy metals more readily.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal	For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For larger amounts, contact the manufacturer for additional information. Prevent contamination of drains or waterways as aquatic life may be threatened and environmental damage may result.
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Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Transport Do not transport with Class 8 (Acids).



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Shipping Name	CORROSIVE LIQUID, TOXIC, N.O.S.				
UN No.	2922	DG Class	8	Subsidiary Risk(s)	6.1
Packing Group	III	Hazchem Code	2X	EPG	8C1

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 6 (S6) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information As this product may generate flammable vapour during normal decomposition over time, it is recommended that a hazardous area risk assessment be undertaken and used as the basis for design and construction of any storage facilities.

Good levels of ventilation should be provided around storage areas.

Special attention should be given to eliminating all potential sources of heat and ignition from in and around classified hazardous areas.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, **ENGINEERING CONTROLS** are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European INventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible

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scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared By Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

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End of Report