



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	KEMTEC FT 2644 COLLECTOR
CHEMICAL FAMILY:	Sodium Diisobutyl Monothiophosphate
SYNONYMS:	Diisobutyl Phosphoromonothioate
MOLECULAR FORMULA:	C ₈ H ₁₈ O ₃ PSNa
MOLECULAR WEIGHT:	248.26
MANUFACTURER:	Kemtec Pty Ltd • 15/131 Hall St • Port Melbourne • Australia
PRODUCT INFORMATION:	Tel: +613 9646 3833 • Fax: +61 3 9646 3933 • Web Site: www.Kemtec.com.au
EMERGENCY PHONE:	CHEMTREC • North America: +1.800.424.9300 • International: +1.703.527.3887
ISSUE DATE:	April 30, 2012

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

COMPONENT	CAS No.	% (w/w)	OSHA (PEL)	ACGIH (TLV)	Carcinogen
Sodium hydroxide	1310-73-2	0.5 – 1.5	-	TLV=2 mg/m ³ (ceiling)	-
Sodium di isobutyl monothiophosphate	53378-51-1	35 – 45	-	TWA=N/A	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR

Color:	Clear, amber to dark
Appearance:	Liquid
Odor:	Sulfur odor

STATEMENT OF HAZARD

DANGER! CAUSES BURNS OF EYES AND SKIN

POTENTIAL HEALTH EFFECTS

EFFECTS / ROUTES OF EXPOSURE

Contact with acid may cause liberation on hydrogen sulfide. Hydrogen sulfide has a strong rotten-egg order, however some people are unable to smell the gas and exposure will deaden the sense of smell. Therefore, odor is an unreliable indicator of exposure.

EYES:	This material may cause severe eye irritation. Over exposure to hydrogen sulfide may cause severe eye irritation.
SKIN:	This material may cause severe skin irritation.
INHALATION:	Over exposure to hydrogen gas may cause rapid development of coma and respiratory failure. Low levels of hydrogen gas may cause dizziness, headache, staggering gait, neurological damage and gastritis.
INGESTION:	N/A

4. FIRST AID MEASURES

INGESTION:	Material is not expected to be harmful by ingestion. Only induce vomiting at the instruction of a physician.
SKIN CONTACT:	In case of skin contact, remove contaminated clothing without delay. Wear impervious gloves. Cleanse skin thoroughly with soap and water. Do not omit cleaning hair or under fingernails if contaminated. Do not reuse clothing without laundering.
EYES CONTACT:	In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
INHALATION:	Material is not expected to be harmful if inhaled. If inhaled, remove to fresh air.

5. FIREFIGHTING MEASURES.

EXTINGUISHING MEDIA AND FIRE FIGHTING INSTRUCTIONS

Extinguishing Media:	Use water spray or fog, carbon dioxide or dry chemical to extinguish fires
Protective Equipment:	Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).
Special Hazards:	Sulfur dioxide or hydrogen sulfide may be formed under fire conditions. Do not flush to sewer which may contain acid. This could result in generation of toxic and explosive hydrogen sulfide gas.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:	Where exposure level is not known, wear NIOSH approved, positive pressure, self-contained respirator. Where exposure level is known, wear NIOSH approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8, wear impervious boots and rain suit.
METHODS FOR CLEAN UP:	Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush area with water.
ENVIRONMENTAL PRECAUTIONS:	Dispose of in accordance with EPA rules and regulations.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures :	Do not get in eyes, on skin or on clothing. Wash thoroughly after handling.
Special Handling Statements :	This product should not be mixed with acids or aqueous solutions containing acids since evolution of toxic and explosive hydrogen sulfide gas could result. This precaution does not, of course, apply to addition of this reagent to flotation pulps in amounts customarily used in flotation.

STORAGE None

Storage Temperature: **Reason:**

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING MEASURES Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure. Mechanical ventilation may be necessary if working with product in enclosed areas or at elevated temperatures.

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 or when conditions cause excessive airborne levels of mists or vapors, 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

COLOR:	Clear, amber to dark
APPEARANCE:	Liquid
ODOR:	Slight sulfur
BOILING POINT:	N/A
MELTING POINT:	N/A
VAPOR PRESSURE:	Not Similar to water at 25°C
SPECIFIC GRAVITY:	1.12 – 1.16
VAPOR DENSITY:	Similar to water
% VOLATILE (BY WT.):	Not available
pH:	11.0 (minimum)
SATURATION IN AIR (% by Vol):	Not available
EVAPORATION RATE:	Not available
SOLUBILITY IN WATER:	Complete
VOLATILE ORGANIC CONTENT:	Not available
FLASH POINT:	>200°F; 93°C, TCC
FLAMMABLE LIMITS (% BY VOL.):	Not available
AUTO IGNITION TEMPERATURE:	Not available
DECOMPOSITION TEMPERATURE:	212°F; 100°C
PARTIAL COEFFICIENT (n-octanol/water):	<10
ODOR THRESHOLD:	See Section 2 for exposure limits

10. STABILITY AND REACTIVITY

STABILITY:	Stable
CONDITIONS TO AVOID:	None known
POLYMERIZATION:	Will not occur
CONDITIONS TO AVOID:	None known
MATERIALS TO AVOID:	Avoid contact with strong oxidizing agents and mineral acids.
HAZARDOUS DECOMPOSITION PRODUCTS:	Thermal decomposition or combustion (of dried solids) may produce carbon monoxide, carbon dioxide, sulfur oxides, hydrogen sulfide and/or oxides of phosphorus.

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:

Acute overexposure to sodium hydroxide mists or dusts causes severe respiratory irritation. A solution of sodium hydroxide can produce irreversible damage to eyes and skin. Direct contact with di isobutyl monothiophosphate can cause skin corrosion and eye burns.

Sodium di isobutyl monothiophosphate has estimated acute oral (rat) and dermal (rabbit) LD50 values of greater than 5,000 mg/kg and 2,000 mg/kg, respectively.

12. ECOLOGICAL INFORMATION

Physical-chemical degradability:	N/A
Behavior in sewage treatment plant:	Obtain approval of relevant authorities prior to discharge
General:	Do not discharge product unmonitored into the environment
LC₅₀	Bluegill, 96 hour: 42mg/L Trout, 96 hour: 30mg/L Daphnia, 48 hour: 47mg/L

ALGAE TEST RESULTS

Test	Duration	Procedure	Species	Results

FISH TEST RESULTS

Test	Duration	Procedure	Species	Results

INVERTEBRATE TEST RESULTS

Test	Duration	Procedure	Species	Results

ACCUMULATION TEST RESULTS

Test	Duration	Procedure	Species	Results

DEGRADATION

Test	Duration	Procedure	Results
COMMENTS:			

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION INFORMATION

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

U.S. DOT

PROPER SHIPPING NAME:	CAUSTIC ALKALI LIQUID, N.O.S.
HAZARD CLASS	8
PACKING GROUP:	II
UN/ID NUMBER:	UN1719
TRANSPORT LABEL REQUIRED:	CORROSIVE
TECHNICAL NAME (N.O.S.):	Contains sodium hydroxide and monothiophosphate salt
HAZARDOUS SUBSTANCE:	Not applicable
COMMENTS:	-

TRANSPORT CANADA

PROPER SHIPPING NAME:	CAUSTIC ALKALI LIQUID, N.O.S.
HAZARD CLASS	8
PACKING GROUP:	II
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TRANSPORT LABEL REQUIRED:	CORROSIVE
TECHNICAL NAME (N.O.S.):	Contains sodium hydroxide and monothiophosphate salt

ICAO/IATA

PROPER SHIPPING NAME:	CAUSTIC ALKALI LIQUID, N.O.S.		
HAZARD CLASS:	8		
PACKING GROUP:	II		
UN NUMBER:	1719		
TRANSPORT LABEL REQUIRED:	CORROSIVE		
PACKING INSTRUCTIONS/ MAXIMUM NET QUANTITY:	PASSENGER AIRCRAFT	809	1L
	CARGO AIRCRAFT	813	30L
TECHNICAL NAME (N.O.S.):	Contains sodium hydroxide and monothiophosphate salt		

IMO

PROPER SHIPPING NAME:	CAUSTIC ALKALI LIQUID, N.O.S.
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TRANSPORT LABEL REQUIRED:	CORROSIVE
TECHNICAL NAME (N.O.S.):	Contains sodium hydroxide and monothiophosphate salt

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA)	All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.
Canada	All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.
European Union (EU)	All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.
Australia	All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.
China	All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
Japan	All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.
Korea	All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.
Philippines	All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory

OTHER ENVIRONMENTAL INFORMATION

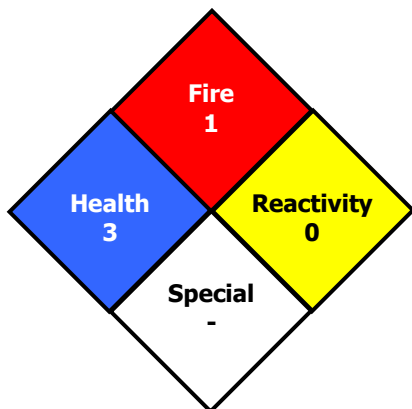
The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste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

Component	CAS NO.	% (w/w)	TPQ (lbs)	RQ (lbs)	S313	TSCA 12B
Sodium hydroxide	1310-73-2	0.5 – 1.5	NONE	1000	NO	NO

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA

ACUTE (Y)	CHRONIC (N)	FIRE (N)	REACTIVE (N)	PRESSURE (N)
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16. OTHER INFORMATION



NFPA HAZARD RATING (National Fire Protection Association)

HEALTH - 3 -	Materials that, under emergency conditions, can cause serious or permanent injury.
FIRE - 1 -	Materials that must be preheated before ignition can occur.
REACTIVITY - 0 -	Materials which in themselves are normally stable, even under fire exposure conditions.

REASON FOR REVISION: Triennial review

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Revised By: C. Yuen

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.