



**Kemai(Tianjin) Chemical Technical Co.,Ltd.**

Gongnong Village, Gulin Street, Dagang Dist, Tianjin 300272, China

**Kemai**

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## Material Safety Data Sheet

**KEMAI002**

Revision Date: 04/29/2004

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** MBT

**MSDS NO.** KEMAI002

**Chemical Name:** 2-Mercaptobenzothiazole

**Synonyms:** Thiotax; Thiotax O; MBT; 2-Benzothiazolethiol; 2(3H)-benzothiazolethione

**Use:** Accelerator. Water treatment. Intermediate.

**Manufactured By:** Kemai(Tianjin) Chemical Technical Co.,Ltd.

**Emergency Telephone:** CHEMTREC: 0086-22-6334-9929 FAX 0086-22-6334-9991

**Prepared By:** Kemai(Tianjin) Chemical Technical Co.,Ltd.

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Components/CAS#**

**Percent**

2-Mercaptobenzothiazole

149-30-4

97-100

White Mineral Oil

8042-47-5

0-3

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:** WARNING! Combustible dust - explosion potential. Keep away from heat, sparks, and flame.

Dust may be irritating to eyes and upper respiratory tract.

**Eye Contact:** May cause mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.

**Skin Contact:** May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.

**Inhalation:** May cause mild respiratory irritation.

**Ingestion:** Swallowing a relatively large amount of this material is unlikely to produce serious illness or death.

### 4. FIRST AID MEASURES

**In Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**On Skin:** Remove contaminated clothing. Wash skin with water, using soap if available. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.

**Inhaled:** Remove person to fresh air. If not breathing, give artificial respiration. If breathing is



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difficult, get immediate medical attention.

**Swallowed:** If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician.

Never give anything by mouth to an unconscious person.

**Notes To Physician:** Provide symptomatic/supportive care as necessary. Treatment based on sound judgment of physician and individual reactions of patient.

## **5. FIRE FIGHTING MEASURES**

**Flash Point (°F/C):** 485°F / 252°C

**Flash Point Method:** Cleveland Open Cup

**Autoignition Temp. (°F/C):** Not determined.

**Lower Explosion Limit in Air (LEL):** Dust cloud at 0.2 oz/ft<sup>3</sup>

**Upper Explosion Limit in Air (UEL):** Not determined.

**Extinguishing Media:** Water fog, carbon dioxide, foam, dry chemical

**Special Exposure Hazards:** Fight fire from a safe distance and from a protected location.

Flammable dust when in finely divided and highly suspended state. Use water spray to cool fire exposed surfaces. Do not allow runoff to enter waterways.

**Special Protective Equipment:** Fire fighters should wear full protective clothing, including self-contained breathing equipment:

**Unusual Fire/Explosion Hazards:** Toxic emissions may result if product is involved in a fire. Fire produces highly toxic sulfur dioxide gas.

## **6. ACCIDENTAL RELEASE MEASURES**

**Spill Procedures:** Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Procedure for Cleaning/Absorption:** Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe.

Remove ignition sources and work with non-sparking tools. Scoop up and remove solids. Do NOT spread spilled product with water.

**CERCLA Reportable Quantity (RQ):** Not Applicable.

## **7. HANDLING AND STORAGE**

**Handling:** Good hygienic practices should be observed. Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded with material.

Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Reclose containers of unused product. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Do not reuse this container.

**Storage:** Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials.

Avoid exposure to direct sunlight.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Eye Protection:** Wear safety glasses or goggles to protect against exposure. Eye protection is not required during typical product use conditions

**Skin Protection:** Normal work coveralls. Launder contaminated clothing before reuse.

**Gloves:** Use gloves as a standard industrial handling procedure. All cleanable impervious



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glove types are acceptable.

**Respiratory Protection:** Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure. Firefighting; use a Positive Pressure

Demand Full Face Self Contained Breathing Apparatus.

**Ventilation:** General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollution control regulations.

Eliminate ignition sources.

**Airborne Exposure Limits:** Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m<sup>3</sup> (Total Dust).

OSHA PEL/8-Hr TWA =

05 mg/m<sup>3</sup> (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m<sup>3</sup>. White Mineral Oil

OSHA PEL/8-Hr TWA = 5mg/m<sup>3</sup> ACGIH TLV/8-Hr TWA = 5mg/m<sup>3</sup>.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Off-white powder. White to off-white granules.

**Odor:** SLIGHT AROMATIC

**pH:** Not Applicable

**Specific Gravity:** 1.4-1.5 @ 25°C

**Density:** 1.42

**Bulk Density:** 400-440 kg/m<sup>3</sup> (oiled) 480-520 kg/m<sup>3</sup> (unoiled)

**Melting Point (°F/C):** 169-171°C

**Boiling Point (°F/C):** 260°C

**Vapor Pressure:** 0.000464 mm Hg @ 25°C

**Vapor Density (Air=1):** Not Determined

**% Volatile by Volume:** <0.5%

**Solubility in Water:** 0.032 g/100ml @ 25°C

**Other Solubility:** Soluble in Acetone Dilute base (NaOH) Slightly soluble in Ethanol

**Viscosity:** Not Applicable.

**Other Data:** Decomposes above boiling point

**Molecular Weight:** 167.25

**Molecular Formula:** C<sub>7</sub>H<sub>5</sub>S<sub>2</sub>N

## **10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable when stored at room temperature in closed, original container.

Stable under normal conditions of handling, use and transportation.

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid:** Keep away from heat, sparks and flame. Dispersion of dust.

Temperatures above 250°C. Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen.

**Materials to Avoid:** Strong oxidizing agents. Strong acids.

**Hazardous Decomposition Products:** Carbon monoxide. Oxides of nitrogen. Oxides of sulfur.



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**Additional Guidelines:** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

### Target Organs

**Acute Oral LD50 (mg/kg):** 3800 mg/kg (Rat)

**Acute Dermal LD50 (mg/kg):** >7940 mg/kg (Rabbit)

**Acute Inhalation LC50 (mg/l):** No mortalities at 1270 mg/kg for 4 hours (Rat)

**Principle Routes of Exposure:** Eyes. Inhalation. Dermal - skin.

**Ingestion:** Swallowing a relatively large amount of this material is unlikely to produce serious illness or death.

**Skin Contact:** May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.

**Inhalation:** May cause mild respiratory irritation.

**Eye Contact:** May cause mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.

**Aggravated Conditions:** Pulmonary disorders. Dermal ailments. Eye ailments.

**Carcinogenicity Comment:** This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA. Carcinogenic: Category 3

**Other:** No other first aid needed. Only hazard is a dust hazard.

**Primary Irritation Effect:** Slightly irritating to skin and eyes. Possible sensitizer.

**Carcinogenicity:** Negative in standard tests using bacteria and/or yeast cells. A National Toxicology Program (NTP) 2-year study concluded that there was some evidence of carcinogenic activity in treated rats but no evidence in treated mice.

**Genotoxicity:** Negative for genetic activity - in vitro tests. Negative for genetic activity - in vivo tests.

### Reproductive/Developmental

#### Toxicity:

No evidence of teratogenicity in animal studies using rats, mice and/or hamsters.

No birth defects observed in several animal studies. Fetal toxicity noted only at levels that produced maternal toxicity.

## 12. ECOLOGICAL INFORMATION

**Acute Fish Toxicity:** 96Hr LC50 Rainbow Trout = 0.75 mg/l. 96Hr LC50 Bluegill Sunfish = 1.50 mg/l.

96Hr LC50 Fathead Minnow = 11.0 mg/l.

**Acute Crustaceans Toxicity:** 48Hr LC50 Daphnia Magna = 4.10 mg/l

**Acute Algae Toxicity:** 96Hr EC50 Algae = 0.25 mg/l

**Octanol/Water Coefficient:** Log P = 2.41

**Chemical Fate Information:** Biodegradability: 2% CO<sub>2</sub> evolution. River Water Biodegradation: None in 8 weeks. Soil Mobility: Medium to low. Sediment mobility: Slight to nil.

**Other Information:** Marginally susceptible to indirect photolysis. Bioconcentration Factor (Carp) =<8.

## 13. DISPOSAL CONSIDERATIONS



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**Disposal of Waste Method:**

This material is not a RCRA hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Empty containers should be handled in a manner not to cause dusting during collection, transportation and disposal.

**Contaminated Packaging:**

If empty container retains product residues, all label precautions must be observed. Store away from ignition sources.

Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Dispose of container according to national or local regulations.

**14. TRANSPORT INFORMATION**

**DOT:DOT Status:** Not Regulated

**DOT Shipping Name:** NONE

**DOT Reportable Quantity (lbs):** None

**ICAO/IATA:Status:** NOT REGULATED FOR TRANSPORTATION

**Proper Shipping Name:** None

**UN/NA Number:** NONE

**IMDG:Status:** Not Regulated

**Proper Shipping Name:** None

**TDG (Canada):Status:** Not Regulated

**Proper Shipping Name:** None

**15. REGULATORY INFORMATION**

**Worldwide Inventory Status**

**TSCA (USA):** Listed

**Canadian DSL:** Listed

**Canadian NDSL:** Not Applicable. Listed on the DSL.

**EINECS/ELINCS (Europe):** Listed

**Japanese Inventory (ENCS):** Listed

**Korean Chemical Inventory (ECL):** Listed

**Australian Chemical Inventories (AICS):** Listed

**New Zealand (NZ):** Listed

**Phillipines (PICCS) Inventory:** Listed

**China (CLECS):** Listed

**US Regulatory Rules**

**SARA Section 302:** None Found

**SARA 311/312 Hazard Categories:** Delayed Fire

**SARA 313 Chemical:** 2-Mercaptobenzothiazole.

**RCRA Status:** Not a RCRA waste.

**Other Regulations:**

**California Proposition 65:** NONE

**New Jersey Right-to-Know List:** Component 2-Mercaptobenzothiazole: New Jersey Substance ID# 3710.



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**Pennsylvania Right to Know List:** Not Applicable.

**Florida Right to Know:** Not Applicable.

**Minnesota Right to Know:** Not Applicable.

**MA Right to Know Law:** Not Applicable.

**FDA Status 21 CFR:** Regulated for Use under the following sections of 21 CFR: 177.2600  
Rubber

Articles Intended for Repeated Use in Food Contact. 175.105 Components of  
Adhesives. 176.300 Slimicides in Paper and Paperboard.

#### **Canadian Regulations**

**WHMIS Hazard Class:** D2B TOXIC MATERIALS / Materials Causing Other Toxic Effects

**NPRI:** Component 2-Mercaptobenzothiazole: NPRI Part 1, Group 1, ID# 148, minimum  
concentration 1%.

### **16. OTHER INFORMATION**

#### **Hazard Rating Systems:**

**HMIS Classification:** HEALTH 1, FLAMMABILITY 1, REACTIVITY 0

**NFPA Rating:** HEALTH 1, FLAMMABILITY 1, REACTIVITY 0

#### **The following has been revised since the last issue of this MSDS:**

Add toxicology information. Periodic worldwide chemical regulatory status review.

**Additional Information:** NPRI List [Canada]. WHMIS Ingredient Disclosure List (Canada):  
WHMIS Concentration threshold = 1%.

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**\*\*\*END OF MSDS\*\*\***