

BIO BASIC INC.

160 TORBAY ROAD, MARKHAM ONTARIO L3R 1G6 CANADA
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MATERIAL SAFETY DATA SHEET

REQUIRED UNDER SAFETY AND HEALTH REGULATION FOR SHIP REPAIRING

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ADDRESS: 160 TORBAY ROAD, MARKHAM ONTARIO L3R 1G6 CANADA

DATE PREPARED: AUGUST 9, 2007

SECTION 1 - PRODUCT AND COMPANY INFORMATION
PRODUCT NAME DIETHYLDITHIOCARBAMIC ACID SODIUM
TRIHYDRATE CRYSTALLINE
PRODUCT NUMBER SB0846

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT
SUBSTANCE NAME CAS # SARA 313
DIETHYLDITHIOCARBAMIC ACID SODIUM 20624-25-3 NO
TRIHYDRATE CRYSTALLINE
FORMULA C₅H₁₀NNAS₂ · 3H₂O
SYNONYMS DIETHYLDITHIOCARBAMATE SODIUM TRIHYDRATE *
DIETHYLDITHIOCARBAMIC ACID SODIUM SALT TRIHYDRATE
* DIETHYLDITHIOKARBAMAN SODNY TRIHYDRAT (CZECH) *
DITHIOCARB TRIHYDRATE * SODIUM
DIETHYLDITHIOCARBAMATE TRIHYDRATE
RTECS NUMBER: EZ6550000

SECTION 3 - HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW
HARMFUL.
HARMFUL IF SWALLOWED. IRRITATING TO SKIN. RISK OF SERIOUS DAMAGE
TO EYES.
HMIS RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1
NFPA RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1
FOR ADDITIONAL INFORMATION ON TOXICITY, PLEASE REFER TO SECTION 11.

SECTION 4 - FIRST AID MEASURES
ORAL EXPOSURE
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS
CONSCIOUS. CALL A PHYSICIAN.
INHALATION EXPOSURE
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE
ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
DERMAL EXPOSURE
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR
AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES.

CALL A PHYSICIAN.

EYE EXPOSURE

IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

SUITABLE: WATER SPRAY. CARBON DIOXIDE, DRY CHEMICAL POWDER, OR APPROPRIATE FOAM.

FIREFIGHTING

PROTECTIVE EQUIPMENT: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

SPECIFIC HAZARD(S): EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

EVACUATE AREA.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS, AND HEAVY RUBBER GLOVES.

METHODS FOR CLEANING UP

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7 - HANDLING AND STORAGE

HANDLING

USER EXPOSURE: DO NOT BREATHE DUST. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

STORAGE

SUITABLE: KEEP TIGHTLY CLOSED. STORE IN A COOL DRY PLACE. STORE UNDER INERT GAS.

STORE AT -20°C

SPECIAL REQUIREMENTS

HYGROSCOPIC. STORE UNDER INERT GAS.

SECTION 8 - EXPOSURE CONTROLS / PPE

ENGINEERING CONTROLS

MECHANICAL EXHAUST REQUIRED. SAFETY SHOWER AND EYE BATH. GROUND ALL EQUIPMENT, VESSELS, TABLES, AND OTHER METALLIC OBJECTS THAT MAY COME INTO CONTACT WITH THE PRODUCT.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU). WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A DUST MASK TYPE N95 (US) OR TYPE P1 (EN 143)

RESPIRATOR.

HAND: COMPATIBLE CHEMICAL-RESISTANT GLOVES.

EYE: CHEMICAL SAFETY GOGGLES.

GENERAL HYGIENE MEASURES

WASH THOROUGHLY AFTER HANDLING.

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

APPEARANCE PHYSICAL STATE: SOLID
PROPERTY VALUE AT TEMPERATURE OR PRESSURE
MOLECULAR WEIGHT 225.31 AMU
PH N/A
BP/BP RANGE N/A
MP/MP RANGE 95.0 - 98.5 °C
FREEZING POINT N/A
VAPOR PRESSURE N/A
VAPOR DENSITY 5.9 G/L
SATURATED VAPOR CONC. N/A
SG/DENSITY 1.1 G/CM³
BULK DENSITY N/A
ODOR THRESHOLD N/A
VOLATILE% N/A
VOC CONTENT N/A
WATER CONTENT N/A
SOLVENT CONTENT N/A
EVAPORATION RATE N/A
VISCOSITY N/A
SURFACE TENSION N/A
PARTITION COEFFICIENT N/A
DECOMPOSITION TEMP. N/A
FLASH POINT N/A
EXPLOSION LIMITS N/A
FLAMMABILITY N/A
AUTOIGNITION TEMP N/A
REFRACTIVE INDEX N/A
OPTICAL ROTATION N/A
MISCELLANEOUS DATA N/A
SOLUBILITY SOLUBILITY IN WATER: SOLUBLE.
N/A = NOT AVAILABLE

SECTION 10 - STABILITY AND REACTIVITY

STABILITY
STABLE: STABLE.
CONDITIONS TO AVOID: MOISTURE.
MATERIALS TO AVOID: STRONG OXIDIZING AGENTS.
HAZARDOUS DECOMPOSITION PRODUCTS
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE,
NITROGEN OXIDES, SULFUR OXIDES.
HAZARDOUS POLYMERIZATION
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION 11 - TOXICOLOGICAL INFORMATION

ROUTE OF EXPOSURE
SKIN CONTACT: CAUSES SKIN IRRITATION.
SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
EYE CONTACT: CAUSES SEVERE EYE IRRITATION.
INHALATION: MAY BE HARMFUL IF INHALED. MATERIAL MAY BE
IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.
INGESTION: HARMFUL IF SWALLOWED.
SIGNS AND SYMPTOMS OF EXPOSURE
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
SOME DITHIOCARBAMATES HAVE BEEN REPORTED TO HAVE TERATOGENIC
AND/OR CARCINOGENIC POTENTIAL. (1974 EVALUATIONS OF SOME

PESTICIDE RESIDUES IN FOOD. WHO PESTICIDE RESIDUE SERIES, NO. 4, 261 TO 263. GENEVA, 1975; IARC VOL 7, 1974, VOL 12, 1976) AND TO AFFECT MALE REPRODUCTIVE CAPACITY (TARGET ORGAN TOXICITY CENTER REPRODUCTIVE INFORMATION FILE). EXPOSURE TO THIOCARBAMATES OR THIURAMS AND THE INTAKE OF EVEN SMALL AMOUNTS OF ETHYL ALCOHOL RESULTS IN FLUSHING, BREATHING DIFFICULTY, NAUSEA, VOMITING, AND LOW BLOOD PRESSURE. SENSITIZATION TO ALCOHOL MAY LAST AS LONG AS 6 TO 14 DAYS AFTER EXPOSURE TO THESE COMPOUNDS. A SERIOUS TOXIC INTERACTION HAS BEEN OBSERVED IN RATS FED TETRAETHYLTHIURAM AND THEN EXPOSED TO VAPORS OF 1,2-DIBROMOETHANE. (NIOSH CURRENT INTELLIGENCE BULLETIN 23, US DEPT. HEW APRIL 11, 1978). NIOSH STATED THAT SIMILAR TOXIC INTERACTIONS MAY OCCUR BETWEEN CHEMICALS STRUCTURALLY RELATED TO TETRAETHYLTHIURAM AND OTHER HALOGENATED HYDROCARBONS.

TOXICITY DATA

ORAL

RAT

1500 MG/KG

LD50

INTRAPERITONEAL

RAT

1500 MG/KG

LD50

ORAL

MOUSE

1500 MG/KG

LD50

INTRAPERITONEAL

MOUSE

952 MG/KG

LD50

INTRAVENOUS

MOUSE

1700 MG/KG

LD50

SUBCUTANEOUS

RABBIT

500 MG/KG

LD50

CHRONIC EXPOSURE - MUTAGEN

SPECIES: RAT

DOSE: 5100 UMOL/L

CELL TYPE: LIVER

MUTATION TEST: DNA DAMAGE

SPECIES: RAT

DOSE: 1 MG/L

CELL TYPE: LYMPHOCYTE

MUTATION TEST: DNA INHIBITION

SPECIES: HAMSTER

DOSE: 10 UMOL/L

CELL TYPE: OVARY

MUTATION TEST: CYTOGENETIC ANALYSIS

SECTION 12 - ECOLOGICAL INFORMATION

NO DATA AVAILABLE.

SECTION 13 - DISPOSAL CONSIDERATIONS

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER. OBSERVE ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14 - TRANSPORT INFORMATION

DOT

PROPER SHIPPING NAME: NONE

NON-HAZARDOUS FOR TRANSPORT: THIS SUBSTANCE IS CONSIDERED TO BE NON-HAZARDOUS FOR TRANSPORT.

IATA

NON-HAZARDOUS FOR AIR TRANSPORT: NON-HAZARDOUS FOR AIR TRANSPORT.

SECTION 15 - REGULATORY INFORMATION

EU ADDITIONAL CLASSIFICATION

SYMBOL OF DANGER: XN

INDICATION OF DANGER: HARMFUL.

R: 22-38-41

RISK STATEMENTS: HARMFUL IF SWALLOWED. IRRITATING TO SKIN. RISK OF SERIOUS DAMAGE TO EYES.

S: 26-39

SAFETY STATEMENTS: IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR EYE/FACE PROTECTION.

US CLASSIFICATION AND LABEL TEXT

INDICATION OF DANGER: HARMFUL.

RISK STATEMENTS: HARMFUL IF SWALLOWED. IRRITATING TO SKIN. RISK OF SERIOUS DAMAGE TO EYES.

SAFETY STATEMENTS: IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR EYE/FACE PROTECTION.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: NO

CANADA REGULATORY INFORMATION

WHMIS CLASSIFICATION: THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR, AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

DSL: NO

NDSL: NO

SECTION 16 - OTHER INFORMATION

DISCLAIMER

FOR R&D USE ONLY. NOT FOR DRUG, HOUSEHOLD OR OTHER USES.

WARRANTY

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