

## 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

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#### SECTION 1 - PRODUCT AND COMPANY INFORMATION

PRODUCT NAME CHOLINE CHLORIDE  
PRODUCT NUMBER CB0299

#### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

SUBSTANCE NAME CAS # SARA 313  
CHOLINE CHLORIDE 67-48-1 NO  
FORMULA C5H14NO.CL  
SYNONYMS AMMONIUM, (2-HYDROXYETHYL)TRIMETHYL-, CHLORIDE \*  
BIOCOLINA \* CHOLINE CHLORIDE \* CHOLINE  
CHLORHYDRATE \* CHOLINE HYDROCHLORIDE \* CHOLINIUM  
CHLORIDE \* CHLORIDE DE CHOLINE (FRENCH) \*  
HEPACHOLINE \* (2-HYDROXYETHYL)TRIMETHYLAMMONIUM  
CHLORIDE \* LIPOTRIL  
RTECS NUMBER: KH2975000

#### SECTION 3 - HAZARDS IDENTIFICATION

##### EMERGENCY OVERVIEW

IRRITANT.

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

HMIS RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

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 CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER.

##### EYE EXPOSURE

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS

OF WATER FOR AT LEAST 15 MINUTES.

#### 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(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.

##### SPECIAL REQUIREMENTS

HYGROSCOPIC. STORE UNDER INERT GAS.

#### SECTION 8 - EXPOSURE CONTROLS / PPE

##### ENGINEERING CONTROLS

SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED.

##### 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

COLOR: WHITE

##### PROPERTY VALUE AT TEMPERATURE OR PRESSURE

MOLECULAR WEIGHT 139.63 AMU

PH 5.0 - 6.5

BP/BP RANGE N/A

MP/MP RANGE 302.0 - 305.0 °C

FREEZING POINT N/A

VAPOR PRESSURE N/A  
VAPOR DENSITY N/A  
SATURATED VAPOR CONC. N/A  
SG/DENSITY N/A  
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:1.0 M IN H2O CLEAR,  
COLORLESS  
N/A = NOT AVAILABLE

#### SECTION 10 - STABILITY AND REACTIVITY

##### STABILITY

STABLE: STABLE.

CONDITIONS TO AVOID: MOISTURE.

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS, STRONG ACIDS, STRONG BASES.

##### HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS DECOMPOSITION PRODUCTS: HYDROGEN CHLORIDE GAS, NITROGEN OXIDES CARBON MONOXIDE, CARBON DIOXIDE.

##### 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 EYE IRRITATION.

INHALATION: MAY BE HARMFUL IF INHALED. MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

INGESTION: MAY BE 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.

##### TOXICITY DATA

###### ORAL ORAL

RAT RAT

3400 MG/KG 3400 MG/KG

LD50 LD50

REMARKS: LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION.

BEHAVIORAL:EXCITEMENT. SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND TASTE):EYE:CHROMODACRYORRHEA. SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND

TASTE):EYE:CHROMODACRYORRHEA. BEHAVIORAL:EXCITEMENT. LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION.

INTRAPERITONEAL INTRAPERITONEAL

RAT RAT

450 MG/KG 450 MG/KG

LD50 LD50

ORAL ORAL

MOUSE MOUSE

3900 MG/KG 3900 MG/KG

LD50 LD50

REMARKS: SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND TASTE):EYE:LACRIMATION. BEHAVIORAL:CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD. LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION. LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION. SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND TASTE):EYE:LACRIMATION. BEHAVIORAL:CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD.

INTRAPERITONEAL INTRAPERITONEAL

MOUSE MOUSE

320 MG/KG 320 MG/KG

LD50 LD50

INTRAVENOUS INTRAVENOUS

MOUSE MOUSE

53 MG/KG 53 MG/KG

LD50 LD50

REMARKS: SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND TASTE):EYE:LACRIMATION. BEHAVIORAL:CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD. LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION. LUNGS, THORAX, OR RESPIRATION:RESPIRATORY DEPRESSION. BEHAVIORAL:CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD. SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR, AND TASTE):EYE:LACRIMATION.

CHRONIC EXPOSURE - MUTAGEN

SPECIES: HAMSTER HAMSTER

DOSE: 500 UG/L 500 UG/L

CELL TYPE: OVARY OVARY

MUTATION TEST: CYTOGENETIC ANALYSIS CYTOGENETIC ANALYSIS

SPECIES: HAMSTER HAMSTER

DOSE: 500 UG/L 500 UG/L

CELL TYPE: OVARY OVARY

MUTATION TEST: SISTER CHROMATID EXCHANGE SISTER CHROMATID EXCHANGE

#### 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: XI

INDICATION OF DANGER: IRRITANT.

R: 36/37/38

RISK STATEMENTS: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

S: 26-36

SAFETY STATEMENTS: IN CASE OF CONTACT WITH EYES, RINSE  
IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR  
SUITABLE PROTECTIVE CLOTHING.

US CLASSIFICATION AND LABEL TEXT

INDICATION OF DANGER: IRRITANT.

RISK STATEMENTS: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

SAFETY STATEMENTS: IN CASE OF CONTACT WITH EYES, RINSE  
IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR  
SUITABLE PROTECTIVE CLOTHING.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: NO

TSCA INVENTORY ITEM: YES YES

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: YES

NDSL: NO

#### SECTION 16 - OTHER INFORMATION

DISCLAIMER

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

WARRANTY

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT  
PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. THE  
INFORMATION IN THIS DOCUMENT IS BASED ON THE PRESENT STATE OF OUR  
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