

BIO BASIC INC.

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MATERIAL SAFETY DATA SHEET

REQUIRED UNDER SAFETY AND HEALTH REGULATION FOR SHIP REPAIRING

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SECTION 1. ----- CHEMICAL IDENTIFICATION-----

CODE#: DB0044 &BB7867

NAME: BORIC ACID

SECTION 2. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

CHEMICAL NAME: CAS#: RTECS #: %:

BORIC ACID 10043-35-3 ED4550000 >99.5

FOR MORE INFORMATION SEE COMPLETE RTECS ENTRY.

EC NO: 233-139-2

SYNONYMS

BORACIC ACID * BOROFAX * BORSAURE (GERMAN) * NCI-C56417 * ORTHOBORIC
ACID * THREE ELEPHANT *

SECTION 3. ----- HAZARDS IDENTIFICATION -----

LABEL PRECAUTIONARY STATEMENTS

IRRITANT

POSSIBLE RISK OF HARM TO THE UNBORN CHILD.

POSSIBLE RISK OF IMPAIRED FERTILITY.

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

TARGET ORGAN(S):

CENTRAL NERVOUS SYSTEM

KIDNEYS

LIVER

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.

DO NOT BREATHE DUST.

SECTION 4. ----- FIRST-AID MEASURES-----

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
WATER FOR AT LEAST 15 MINUTES.

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

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.

CALL A PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. ----- FIRE FIGHTING MEASURES -----

EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

WATER SPRAY.

SPECIAL FIREFIGHTING PROCEDURES

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

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-----

REFER TO SECTION 8.

SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

USE ONLY IN A CHEMICAL FUME HOOD.

SAFETY SHOWER AND EYE BATH.

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

WASH THOROUGHLY AFTER HANDLING.

KEEP TIGHTLY CLOSED.

HYGROSCOPIC

STORE IN A COOL DRY PLACE.

SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----

APPEARANCE AND ODOR

WHITE CRYSTALLINE POWDER

PHYSICAL PROPERTIES

VAPOR PRESSURE: 2.6MM 20 C

SPECIFIC GRAVITY: 1.435

SECTION 10. ----- STABILITY AND REACTIVITY -----

INCOMPATIBILITIES

REACTS VIOLENTLY WITH:

POTASSIUM

ACID ANHYDRIDES

SENSITIVE TO MOISTURE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

BORON OXIDES.

SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

ACUTE EFFECTS

MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.

CAUSES EYE AND SKIN IRRITATION.

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER

RESPIRATORY TRACT.

CHRONIC EFFECTS

POSSIBLE RISK OF CONGENITAL MALFORMATION IN THE FETUS.

OVEREXPOSURE MAY CAUSE REPRODUCTIVE DISORDER(S) BASED ON TESTS WITH LABORATORY ANIMALS.

TARGET ORGAN(S):

CENTRAL NERVOUS SYSTEM

KIDNEYS

TESTES

LIVER

ADDITIONAL INFORMATION

TOXICITY REPORTED FOR BORATES IN HUMANS: INGESTION OR ABSORPTION MAY CAUSE NAUSEA, VOMITING, DIARRHEA, ABDOMINAL CRAMPS, ERYTHEMATOUS LESIONS ON THE SKIN AND MUCOUS MEMBRANES. OTHER SYMPTOMS INCLUDE: CIRCULATORY COLLAPSE, TACHYCARDIA, CYANOSIS, DELIRIUM, CONVULSIONS AND COMA. DEATH HAS BEEN REPORTED TO OCCUR IN INFANTS FROM LESS THAN 5 GRAMS AND IN ADULTS FROM 5 TO 20 GRAMS.

RTECS #: ED4550000

BORIC ACID

IRRITATION DATA

SKN-HMN 15 MG/3D-I MLD 85DKA8 -,127,1977

TOXICITY DATA

ORL-MAN LDLO:429 MG/KG JTCTDW 31,345,1993

ORL-WMN LDLO:200 MG/KG LANCAO 2,162,1917

ORL-INF LDLO:934 MG/KG JAMAAP 90,382,1928

SKN-INF LDLO:1200 MG/KG JAMAAP 129,332,1945

SKN-CHD LDLO:4 GM/KG/4D MMWOAU 52,763,1905

SKN-MAN LDLO:2430 MG/KG JAMAAP 128,266,1945

SKN-CHD LDLO:1500 MG/KG QJPPAL 6,714,1933

SCU-INF LDLO:1100 MG/KG MDSR** #2,1950

UNR-MAN LDLO:147 MG/KG 85DCAI 2,73,1970

ORL-RAT LD50:2660 MG/KG JAMAAP 128,266,1945

SCU-RAT LD50:1400 MG/KG 14KTAK -,693,1964

IVN-RAT LD50:1330 MG/KG MDSR** #2,1950

ORL-MUS LD50:3450 MG/KG JAMAAP 128,266,1945

SCU-MUS LD50:1740 MG/KG JAMAAP 128,266,1945

IVN-MUS LD50:1240 MG/KG JPETAB 134,117,1961

SCU-GPG LD50:1200 MG/KG MDSR** #2,1950

TARGET ORGAN DATA

BRAIN AND COVERINGS (MENINGEAL CHANGES)

PERIPHERAL NERVE AND SENSATION (FLACCID PARALYSIS WITHOUT ANESTHESIA)

SENSE ORGANS AND SPECIAL SENSES (CONJUNCTIVA IRRITATION)

BEHAVIORAL (WAKEFULNESS)

BEHAVIORAL (SOMNOLENCE)

BEHAVIORAL (TREMOR)

BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)

BEHAVIORAL (ANOREXIA, HUMAN)

BEHAVIORAL (FLUID INTAKE)

BEHAVIORAL (ATAXIA)

CARDIAC (OTHER CHANGES)

LUNGS, THORAX OR RESPIRATION (CYANOSIS)

LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)

GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)

GASTROINTESTINAL (NAUSEA OR VOMITING)

GASTROINTESTINAL (OTHER CHANGES)

KIDNEY, URETER, BLADDER (CHANGES IN TUBULES)

SKIN AND APPENDAGES (AFTER SYSTEMIC EXPOSURE: DERMATITIS, OTHER)

PATERNAL EFFECTS (SPERMATOGENESIS)

PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)

MATERNAL EFFECTS (UTERUS, CERVIX, VAGINA)

MATERNAL EFFECTS (OTHER EFFECTS ON FEMALE)

NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE INCREASE)

NUTRITIONAL AND GROSS METABOLIC (BODY TEMPERATURE DECREASE)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES

(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR

COMPLETE INFORMATION.

SECTION 12. ----- ECOLOGICAL INFORMATION -----

DATA NOT YET AVAILABLE.

SECTION 13. ----- DISPOSAL CONSIDERATIONS -----

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----

NOT REGULATED.

SECTION 15. ----- REGULATORY INFORMATION -----

EUROPEAN INFORMATION

IRRITANT

R 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FEREAC 54,7740,1989

OEL-RUSSIA:STEL 10 MG/M3 JAN 1993

NOES 1983: HZD X7080; NIS 187; TNF 27071; NOS 128; TNE 489668; TFE 211838

NOES 1983: HZD X8324; NIS 3; TNF 84; NOS 4; TNE 2919; TFE 1712

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY

EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1997

NTP CARCINOGENESIS STUDIES (FEED);NO EVIDENCE:MOUSE

NTPTR* NTP-TR-324,87

SECTION 16. ----- OTHER INFORMATION-----

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