

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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DATE PREPARED: AUGUST 7, 2007

SECTION 1 - PRODUCT AND COMPANY INFORMATION

PRODUCT NAME METHYL RED
PRODUCT NUMBER MB0627

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

SUBSTANCE NAME CAS # SARA 313
METHYL RED 493-52-7 NO
FORMULA C15H15N3O2
SYNONYMS 2-CARBOXY-4'-(DIMETHYLAMINO)AZOBENZENE * CERVEN
KYESELA 2 (CZECH) * CERVEN METHYLOVA (CZECH) *
C.I. 13020 * C.I. ACID RED 2 *
P-(DIMETHYLAMINO)AZOBENZENE-O-CARBOXYLIC ACID *
4'-DIMETHYLAMINOAZOBENZENE-2-CARBOXYLIC ACID *
O-((P-(DIMETHYLAMINO)PHENYL)AZO)BENZOIC ACID *
2-((4-DIMETHYLAMINO)PHENYL)AZO)BENZOIC ACID *
METHYL RED
RTECS NUMBER: DG8960000

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION: AVOID CONTACT AND INHALATION.

HMIS RATING

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 1

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 BREATHING BECOMES DIFFICULT,
CALL A PHYSICIAN.

DERMAL EXPOSURE

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

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(S) OF PERSONAL PRECAUTION(S)

EXERCISE APPROPRIATE PRECAUTIONS TO MINIMIZE DIRECT CONTACT WITH SKIN OR EYES AND PREVENT INHALATION OF DUST.

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: AVOID INHALATION. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

STORAGE

SUITABLE: KEEP TIGHTLY CLOSED.

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). RESPIRATORY PROTECTION IS NOT REQUIRED. WHERE PROTECTION FROM NUISANCE LEVELS OF DUSTS ARE DESIRED, USE TYPE N95 (US) OR TYPE P1 (EN 143) DUST MASKS.

HAND: PROTECTIVE GLOVES.

EYE: CHEMICAL SAFETY GOGGLES.

GENERAL HYGIENE MEASURES

WASH THOROUGHLY AFTER HANDLING.

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

APPEARANCE PHYSICAL STATE: SOLID

COLOR: DEEP VIOLET

FORM: POWDER

PROPERTY VALUE AT TEMPERATURE OR PRESSURE

MOLECULAR WEIGHT 269.31 AMU

PH N/A

BP/BP RANGE N/A

MP/MP RANGE 179.0 - 182.0 °C

FREEZING POINT N/A
VAPOR PRESSURE N/A
VAPOR DENSITY N/A
SATURATED VAPOR CONC. N/A
SG/DENSITY 0.989 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 N/A
N/A = NOT AVAILABLE

SECTION 10 - STABILITY AND REACTIVITY

STABILITY

STABLE: STABLE.

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE,
NITROGEN OXIDES.

HAZARDOUS POLYMERIZATION

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION 11 - TOXICOLOGICAL INFORMATION

ROUTE OF EXPOSURE

SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

EYE CONTACT: MAY CAUSE EYE IRRITATION.

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

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.

CHRONIC EXPOSURE - CARCINOGEN

RESULT: THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT
CLASSIFIABLE AS TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH,
NTP, OR EPA CLASSIFICATION.

SPECIES: RAT

ROUTE OF APPLICATION: ORAL

DOSE: 12 GM/KG

EXPOSURE TIME: 57W

FREQUENCY: C

RESULT: LIVER:TUMORS. TUMORIGENIC:EQUIVOCAL TUMORIGENIC AGENT BY
RTECS CRITERIA.

IARC CARCINOGEN LIST

RATING: GROUP 3

CHRONIC EXPOSURE - MUTAGEN

RESULT: LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

SPECIES: RAT

DOSE: 10 UMOL/L

CELL TYPE: LIVER

MUTATION TEST: UNSCHEDULED DNA SYNTHESIS

MUTATION TEST: HISTIDINE REVERSION (AMES)

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

S: 22-24/25

SAFETY STATEMENTS: DO NOT BREATHE DUST. AVOID CONTACT WITH SKIN
AND EYES.

US CLASSIFICATION AND LABEL TEXT

US STATEMENTS: CAUTION: AVOID CONTACT AND INHALATION.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: NO

TSCA INVENTORY ITEM: 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
KNOWLEDGE AND IS APPLICABLE TO THE PRODUCT WITH REGARD TO
APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT ANY
GUARANTEE OF THE PROPERTIES OF THE PRODUCT. BIOBASIC,
SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR

FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE
OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.
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CERTIFICATE OF ANALYSIS

Product	Methyl red (acid red 2)
Grade	Indicator Grade
Product Code	MB0627
Formula	$C_{15}H_{15}N_3O_2$
MW	269.3
CAS#	493-52-7
Lot #	

Test Items	Specifications	Results
Appearance	Red to maroon powder	
Melting Point	179-182°C	
Clarity of Alcohol Solution	To Passes Test	
Loss on Drying	<3.0%	
Visual Transition Interval	4.5(pink)-6.2(yellow)	
Absorptivity 1%/1cm	To Pass Test	
(pH 6.2) at λ_{max} 437nm	>700	
(pH 4.2) at λ_{max} 591nm	>1300	

Storage: Store at room temperature.