

Valid 05/2003 - 07/2003

Sigma Chemical Co.
P.O. Box 14508
St. Louis, MO 63178 USA
Tel: 314-771-5765

M A T E R I A L S A F E T Y D A T A S H E E T

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

CATALOG #: MB1
NAME: METHYLENE BLUE TRIHYDRATE

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

CAS #: 7220-79-3
MF: C16H18CLN3S

SYNONYMS

AIZEN METHYLENE BLUE BH * AIZEN METHYLENE BLUE FZ * BASIC BLUE 9 *
BASIC LAKE BLUE * 3,7-BIS (DIMETHYLAMINO) PHENAZATHONIUM CHLORIDE *
3,7-BIS (DIMETHYLAMINO) PHENOTHIAZIN-5-IUM CHLORIDE * CALCOZINE BLUE ZF
* CHROMOSMON * C.I. 52015 (CZECH) * C.I. BASIC BLUE 9 * D AND C BLUE
NO. 1 * DUASYN BASIC BLUE IAD * EXT D AND C BLUE NO. 1 * EXTERNAL
BLUE 1 * HIDACO METHYLENE BLUE SALT FREE * LEATHER PURE BLUE HB *
METHYLENBLAU (GERMAN) * METHYLENE BLUE (MEDICINAL) * METHYLENE BLUE A
* METHYLENE BLUE B * METHYLENE BLUE 2B * METHYLENE BLUE BB *
METHYLENE BLUE BBA * METHYLENE BLUE BB (ZINC FREE) * METHYLENE BLUE
BD * METHYLENE BLUE 2BF * METHYLENE BLUE 2BN * METHYLENE BLUE BP *
METHYLENE BLUE 2BP * METHYLENE BLUE BPC * METHYLENE BLUE BX *
METHYLENE BLUE BZ * METHYLENE BLUE CHLORIDE (BIOLOGICAL STAIN) *
METHYLENE BLUE D * METHYLENE BLUE FZ * METHYLENE BLUE G * METHYLENE
BLUE GZ * METHYLENE BLUE HGG * METHYLENE BLUE IAD * METHYLENE BLUE I
(MEDICINAL) * METHYLENE BLUE JFA * METHYLENE BLUE N * METHYLENE BLUE
NF (MEDICINAL) * METHYLENE BLUE NZ * METHYLENE BLUE POLYCHROME *
METHYLENE BLUE SG * METHYLENE BLUE SP * METHYLENE BLUE USP (MEDICINAL)
* METHYLENE BLUE USP XII (MEDICINAL) * METHYLENE BLUE ZF * METHYLENE
BLUE ZINC FREE * METHYLENE BLUE ZX * METHYLENIUM CERULEUM *
METHYLTHIONINE * METHYLTHIONINE CHLORIDE * METHYLTHIONIUM CHLORIDE *
MITSUI METHYLENE BLUE * MODR METHYLENOVA (CZECH) * MODR
ROZPOUSTEDLOVA 8 (CZECH) * MODR ZASADITA 9 (CZECH) * PHENOTHIAZIN-5-
IUM, 3,7-BIS (DIMETHYLAMINO)-, CHLORIDE * SANDOCRYL BLUE BRL * SCHULTZ
NO. 1038 * SWISS BLUE * TETRAMETHYLENE BLUE * TETRAMETHYLTHIONINE
CHLORIDE * YAMAMOTO METHYLENE BLUE B * YAMAMOTO METHYLENE BLUE ZF *

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

LABEL PRECAUTIONARY STATEMENTS

HARMFUL
HARMFUL IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
TARGET ORGAN(S):
BLOOD
CENTRAL NERVOUS SYSTEM
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.

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

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER

FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN.

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 - - - - -

EXTINGUISHING MEDIA

WATER SPRAY.

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

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- - - - -

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, 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. EVACUATE AREA.

SECTION 7. - - - - - HANDLING AND STORAGE- - - - -

REFER TO SECTION 8.

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

SAFETY SHOWER AND EYE BATH.

MECHANICAL EXHAUST REQUIRED.

DO NOT BREATHE DUST.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

NIOSH/MSHA-APPROVED RESPIRATOR.

COMPATIBLE CHEMICAL-RESISTANT GLOVES.

CHEMICAL SAFETY GOGGLES.

WASH THOROUGHLY AFTER HANDLING.

KEEP TIGHTLY CLOSED.

STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR

DARK GREEN

SOLID.

PHYSICAL PROPERTIES

MELTING POINT: 190 C

SOLUBILITY:

WATER -Z1076

ETHANOL, CHLORO

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

STABILITY

STABLE.

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

NITROGEN OXIDES

SULFUR OXIDES

HYDROGEN CHLORIDE GAS

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR.

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

ACUTE EFFECTS

CAUSES SKIN IRRITATION.

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

CAUSES EYE IRRITATION.

MAY BE HARMFUL IF INHALED.

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER

RESPIRATORY TRACT.

HARMFUL IF SWALLOWED.

ABSORPTION INTO THE BODY LEADS TO THE FORMATION OF METHEMOGLOBIN WHICH IN SUFFICIENT CONCENTRATION CAUSES CYANOSIS. ONSET MAY BE DELAYED 2 TO 4 HOURS OR LONGER.

EXPOSURE CAN CAUSE:

STOMACH PAINS, VOMITING, DIARRHEA.

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

CHRONIC EFFECTS

TARGET ORGAN(S):

BLOOD

CENTRAL NERVOUS SYSTEM

EYES

RTECS #: SO5600000

3H-PHENOTHIAZINE, 7-(DIMETHYLAMINO)-3-(METHYLIMINO)-, 3-METHOCHLORIDE

TOXICITY DATA

ORL-RAT LD50:1180 MG/KG	85JCAE -,1334,1986
IPR-RAT LD50:180 MG/KG	AEPPAE 204,288,1947
SCU-RAT LD50:190 MG/KG	NIIRDN -,1185,1990
IVN-RAT LD50:1250 MG/KG	ARZNAD 18,676,1968
ORL-MUS LD50:3500 MG/KG	CKFRAY 12,94,1963
IPR-MUS LD50:150 MG/KG	NTIS** AD691-490
IVN-MUS LD50:77 MG/KG	CKFRAY 12,94,1963
IVN-DOM LD50:42300 UG/KG	JVPTD9 7,225,1984

TARGET ORGAN DATA

LUNGS, THORAX OR RESPIRATION (CYANOSIS)

BLOOD (OTHER CHANGES)

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 - - - - -
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 - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

CAUTION: SUBSTANCE NOT YET FULLY TESTED.

HARMFUL

R 22

HARMFUL IF SWALLOWED.

R 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

S 26

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

S 36

WEAR SUITABLE PROTECTIVE CLOTHING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

NOHS 1974: HZD M1469; NIS 35; TNF 4471; NOS 34; TNE 25916

NOHS 1974: HZD T1406; NIS 2; TNF 150; NOS 2; TNE 664

NOES 1983: HZD M1469; NIS 29; TNF 5956; NOS 51; TNE 74208; TFE 43305

EPA GENETOX PROGRAM 1988, POSITIVE/DOSE RESPONSE: IN VITRO SCE-NONHUMAN

EPA GENETOX PROGRAM 1988, NEGATIVE: B SUBTILIS REC ASSAY; S CEREVISIAE GENE CONVERSION

EPA GENETOX PROGRAM 1988, INCONCLUSIVE: B SUBTILIS REC ASSAY; HISTIDINE

REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER SEX-LINKED
LETHAL
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-8826
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001

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

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