

PERIAL SAFETY DATA SHEET

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abase Version May 01, 1996

CTION 1. - - - - - CHEMICAL IDENTIFICATION- - - - -

CATALOG #: E9129
NAME: ETHYLENE GLYCOL

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

CAS #: 107-21-1
MF: C2H6O2
EC NO: 203-473-3

SYNONYMS

ATHYLENGLYKOL (GERMAN) * 1,2-DIHYDROXYETHANE * 1,2-ETHANDIOL * 1,2-ETHANEDIOL * ETHANE-1,2-DIOL * ETHYLENE ALCOHOL * ETHYLENE DIHYDRATE * ETHYLENE GLYCOL (ACGIH) * GLYCOL ALCOHOL * LUTROL-9 * MACROGOL 400 BPC * M.E.G. * MONOETHYLENE GLYCOL * NCI-C00920 * NORKOOL * TESCOL * DOWTHERM SR 1 * UCAR 17 *

CTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS

TOXIC (USA DEFINITION)
HARMFUL (EUROPEAN DEFINITION)
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
REPRODUCTIVE HAZARD.
TARGET ORGAN(S):

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.

CTION 4. - - - - - FIRST-AID MEASURES- - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
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.

CTION 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.

USUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

CTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.
ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.

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.

MECHANICAL EXHAUST REQUIRED.

SAFETY SHOWER AND EYE BATH.

DO NOT BREATHE VAPOR.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

WASH THOROUGHLY AFTER HANDLING.

TOXIC.

IRRITANT.

REPRODUCTIVE HAZARD.

KEEP TIGHTLY CLOSED.

HYGROSCOPIC

STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR

VISCOUS COLORLESS LIQUID

PHYSICAL PROPERTIES

BOILING POINT: 196 C TO 198 C

MELTING POINT: -13 C

FLASHPOINT >230
109C

EXPLOSION LIMITS IN AIR:

UPPER 15.3%

LOWER 3.2%

AUTOIGNITION TEMPERATURE: 752 F 399C

VAPOR PRESSURE: 0.08MM 20 C

SPECIFIC GRAVITY: 1.113

VAPOR DENSITY: 2.1 (AIR=1)

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

COMPATIBILITIES

STRONG OXIDIZING AGENTS

STRONG BASES

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

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

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

CAUSES SKIN IRRITATION.

MAY CAUSE NERVOUS SYSTEM DISTURBANCES.

PROLONGED EXPOSURE CAN CAUSE:

NAUSEA, HEADACHE AND VOMITING

CHRONIC EFFECTS

MAY CAUSE REPRODUCTIVE DISORDERS.

TARGET ORGAN(S):

LIVER, KIDNEYS

CENTRAL NERVOUS SYSTEM

ADDITIONAL INFORMATION

WHEN INGESTED EARLY SYMPTOMS MIMIC ALCOHOL INEBRIATION AND ARE FOLLOWED BY NAUSEA, VOMITING, ABDOMINAL PAIN, WEAKNESS, MUSCLE TENDERNESS, RESPIRATORY FAILURE, CONVULSIONS, CARDIOVASCULAR COLLAPSE, PULMONARY EDEMA, HYPOCALCEMIC TETANY AND SEVERE METABOLIC ACIDOSIS.

WITHOUT TREATMENT, DEATH MAY OCCUR IN 8 TO 24 HOURS. VICTIMS WHO SURVIVE THE INITIAL TOXICITY PERIOD USUALLY DEVELOP RENAL FAILURE ALONG WITH BRAIN AND LIVER DAMAGE.

TECS #: KW2975000

ETHYLENE GLYCOL

IRRITATION DATA

EYE-RAT 12 MG/M3/3D

SKN-RBT 555 MG OPEN MLD

EYE-RBT 500 MG/24H MLD

TXAPA9 16,646,70

UCDS** 7/21/65

85JCAE -,205,86

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EYE-RBT 100 MG/1H MLD
EYE-RBT 12 MG/M3/3D
EYE-RBT 1440 MG/6H MOD

NTIS** LMF-69
TXAPA9 16,646,70
BUYRAI 31,25,77

TOXICITY DATA

ORL-HMN LDLO:786 MG/KG
ORL-HMN LDLO:398 MG/KG
NR-MAN LDLO:1637 MG/KG
ORL-RAT LD50:4700 MG/KG
IHL-RAT LC50:10876 MG/KG
IPR-RAT LD50:5010 MG/KG
SCU-RAT LD50:2800 MG/KG
IVN-RAT LD50:3260 MG/KG
UNR-RAT LD50:13 GM/KG
ORL-MUS LD50:5500 MG/KG
IPR-MUS LD50:5614 MG/KG
IVN-MUS LD50:3 GM/KG
UNR-MUS LD50:8050 MG/KG
ORL-DOG LD50:5500 MG/KG
ORL-CAT LD50:1650 MG/KG
SKN-RBT LD50:9530 UL/KG
UNR-RBT LD50:5017 MG/KG
ORL-GPG LD50:6610 MG/KG
UNR-GPG LD50:11150 MG/KG

EJTXAZ 9,373,76
SMEZA5 26(2),48,83
85DCAI 2,73,70
GTPZAB 26(6),28,82
GISAAA 39(9),106,74
KRKRDT 9,36,81
NPIRI* 1,49,74
KRKRDT 9,36,81
GISAAA 33(3),16,68
GISAAA 32(3),31,67
FEPRA7 6,342,47
JPETAB 65,89,39
GISAAA 33(3),16,68
RMVEAG 154,137,78
RMVEAG 154,137,78
34ZIAG -,731,69
GISAAA 33(3),16,68
JIHTAB 23,259,41
GISAAA 33(3),16,68

TARGET ORGAN DATA

PERIPHERAL NERVE AND SENSATION (SENSORY CHANGE INVOLVING PERIPHERAL NERVE
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (MUSCLE WEAKNESS)
BEHAVIORAL (COMA)
BEHAVIORAL (HEADACHE)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)
GASTROINTESTINAL (NAUSEA OR VOMITING)
LIVER (OTHER CHANGES)
KIDNEY, URETER, BLADDER (RENAL FUNCTION TESTS DEPRESSED)
KIDNEY, URETER, BLADDER (OTHER CHANGES)
ENDOCRINE (HYPOGLYCEMIA)
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.

CTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -
DATA NOT YET AVAILABLE.

CTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -
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.

CTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

CTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 603-027-00-1

HARMFUL

R 22

HARMFUL IF SWALLOWED.

S 36

WEAR SUITABLE PROTECTIVE CLOTHING.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-CL 50 PPM, VAPOR

85INA8 6,612,91

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION

FFEREAC 54,7740,89

MSHA STANDARD-AIR:TWA 10 MG/M3 (PARTICULATE)

DTLWS* 3,19,73

OEL-AUSTRALIA:TWA 60 MG/M3;STEL 120 MG/M3 JAN93

OEL-BELGIUM:STEL 50 PPM (127 MG/M3) JAN93

OEL-DENMARK:STEL 50 PPM (130 MG/M3) JAN93

OEL-DENMARK:TWA 10 MG/M3 JAN93

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OEL-FINLAND:TWA 10 MG/M3;STEL 20 MG/M3 JAN93
OEL-FINLAND:TWA 50 PPM (125 MG/M3);STEL 75 PPM (190 MG/M3) JAN93
OEL-FRANCE:STEL 50 PPM (125 MG/M3) JAN93
OEL-HUNGARY:STEL 50 MG/M3;SKIN JAN93
OEL-THE NETHERLANDS:TWA 10 MG/M3 JAN93
OEL-THE NETHERLANDS:TWA 50 PPM (125 MG/M3) JAN93
OEL-RUSSIA:STEL 5 MG/M3 JAN93
OEL-SWEDEN:TWA 50 PPM (130 MG/M3);STEL 75 PPM (190 MG/M3) JAN93
OEL-SWITZERLAND:TWA 1 MG/M3 JAN93
OEL-SWITZERLAND:TWA 50 PPM (125 MG/M3) JAN93
OEL-UNITED KINGDOM:TWA 10 MG/M3 JAN93
OEL-UNITED KINGDOM:TWA 60 MG/M3;STEL 125 MG/M3 JAN93
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NOHS 1974: HZD 32385; NIS 308; TNF 69314; NOS 174; TNE 743782
NOES 1983: HZD 32385; NIS 340; TNF 102395; NOS 214; TNE 1511087; TFE
446607
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-SA7/SHE; N
CRASSA-ANEUPLOIDY
EPA GENETOX PROGRAM 1988, NEGATIVE: HISTIDINE REVERSION-AMES TEST
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER-WHOLE SEX CHROM.
LOSS
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: D MELANOGASTER-NONDISJUNCTION
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA SECTION 8(E) RISK NOTIFICATION, 8EHQ-0892-9100;8EHQ-0892-9252
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, OCTOBER 1995
NIOSH ANALYTICAL METHOD, 1994: ETHYLENE GLYCOL, 5500
NTP CARCINOGENESIS STUDIES (FEED);NO EVIDENCE:MOUSE
NTPTR* NTP-TR-413,93

U.S. INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.
SECTION 16. - - - - - OTHER INFORMATION- - - - -
THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
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