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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 #: E26266
 NAME: ETHYLENEDIAMINE, 99%

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

CAS #: 107-15-3
 MF: C2H8N2
 EC NO: 203-468-6

SYNONYMS

AETHALDIAMIN (GERMAN) * AETHYLENEDIAMIN (GERMAN) * 1,2-DIAMINOETHAN
 (GERMAN) * 1,2-DIAMINO-ETHAAN (DUTCH) * 1,2-DIAMINOETHANE (OSHA) * 1,
 2-DIAMINO-ETHANO (ITALIAN) * DIMETHYLENEDIAMINE * ETHYLENEDIAMINE
 (DUTCH) * ETHYLENEDIAMINE * ETHYLENEDIAMINE * 1,2-ETHYLENEDIAMINE *
 ETHYLENEDIAMINE (ACGIH:OSHA) * ETHYLENE-DIAMINE (FRENCH) * NCI-C60402
 *

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

LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE
 CORROSIVE
 CAUSES BURNS.
 HARMFUL IN CONTACT WITH SKIN AND IF SWALLOWED.
 MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
 LACHRYMATOR.
 READILY ABSORBED THROUGH SKIN.
 TARGET ORGAN(S):
 KIDNEYS
 LIVER
 KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
 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 VAPOR.

SECTION 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.
 ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS
 WITH FINGERS.

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

EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
 USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

SPECIAL FIREFIGHTING PROCEDURES

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

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

FLAMMABLE LIQUID.
 VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND
 FLASH BACK.
 EMITS TOXIC FUMES UNDER FIRE CONDITIONS.
 CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS.
 FORMS EXPLOSIVE MIXTURES IN AIR.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -
 EVACUATE AREA.
 SHUT OFF ALL SOURCES OF IGNITION.
 WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
 RUBBER GLOVES.
 COVER WITH DRY-LIME, SAND, OR SODA ASH. PLACE IN COVERED CONTAINERS
 USING NON-SPARKING TOOLS AND TRANSPORT OUTDOORS.

SECTION 7. - - - - - HANDLING AND STORAGE- - - - -
 REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -
 STORE IN A COOL DRY PLACE.
 KEEP TIGHTLY CLOSED.
 KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.
 WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT
 GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
 SAFETY SHOWER AND EYE BATH.
 USE ONLY IN A CHEMICAL FUME HOOD.
 USE NONSPARKING TOOLS.
 DO NOT BREATHE VAPOR.
 DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
 WASH THOROUGHLY AFTER HANDLING.
 REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.
 DISCARD CONTAMINATED SHOES.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -
 PHYSICAL PROPERTIES
 BOILING POINT: 118 C
 MELTING POINT: 8.5 C
 FLASHPOINT 93 F
 EXPLOSION LIMITS IN AIR:
 UPPER 16%
 LOWER 2.7%
 AUTOIGNITION TEMPERATURE: 716 F
 VAPOR PRESSURE: 10MM 20 C
 SPECIFIC GRAVITY: 0.899
 VAPOR DENSITY: 2.07

SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -
 CONDITIONS TO AVOID
 ABSORBS CO2 FROM AIR.
 INCOMPATIBILITIES
 SENSITIVE TO AIR
 PROTECT FROM MOISTURE.
 OXIDIZING AGENTS
 PHOSPHORUS HALIDES
 ALDEHYDES
 ORGANIC HALIDES
 HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
 CARBON MONOXIDE, CARBON DIOXIDE
 AMINES
 AMMONIA
 HAZARDOUS POLYMERIZATION
 WILL NOT OCCUR.

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -
 ACUTE EFFECTS
 MAY BE HARMFUL IF INHALED.
 HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN.
 MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES
 AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
 INHALATION MAY RESULT IN SPASM, INFLAMMATION AND EDEMA OF THE
 LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
 SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
 WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
 VOMITING.
 REPEATED EXPOSURE MAY CAUSE ASTHMA.
 EXPOSURE CAN CAUSE:
 STOMACH PAINS, VOMITING, DIARRHEA.
 MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTIONS.

CHRONIC EFFECTS

TARGET ORGAN(S):

KIDNEYS
LIVER
BLOOD
LUNGS

RTECS #: KH8575000
1,2-ETHANEDIAMINE

IRRITATION DATA

SKN-RBT 450 MG OPEN MOD	UCDS** 12/15/1971
SKN-RBT 10 MG/24H OPEN SEV	AMIHBC 4,119,1951
EYE-RBT 750 UG SEV	AJOPAA 29,1363,1946
EYE-RBT 750 UG/24H SEV	85JCAE -,440,1986

TOXICITY DATA

ORL-RAT LD50:1200 MG/KG	MTPEEI (1),38,1997
IPR-RAT LD50:76 MG/KG	TXAPA9 21,454,1972
SCU-RAT LD50:300 MG/KG	85GMAT -,66,1982
ORL-MUS LD50:1 GM/KG	MTPEEI (1),38,1997
IHL-MUS LC50:300 MG/M3	85GMAT -,66,1982
IPR-MUS LD50:200 MG/KG	CHTPBA 4,136,1969
SKN-RBT LD50:730 UL/KG	AMIHBC 4,119,1951
ORL-GPG LD50:470 MG/KG	JIHTAB 23,259,1941

TARGET ORGAN DATA

PERIPHERAL NERVE AND SENSATION (PARESTHESIA)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (ATAXIA)
GASTROINTESTINAL (OTHER CHANGES)
KIDNEY, URETER, BLADDER (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 - - - - -
BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND
SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY
FLAMMABLE.

OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -
CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

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

EUROPEAN INFORMATION

EC INDEX NO: 612-006-00-6

FLAMMABLE

CORROSIVE

R 10

FLAMMABLE.

R 21/22

HARMFUL IN CONTACT WITH SKIN AND IF SWALLOWED.

R 34

CAUSES BURNS.

R 42/43

MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.

S 23

DO NOT BREATHE VAPOR.

S 26

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

S 36/37/39

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

S 45

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

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI,1999

ACGIH TLV-TWA 10 PPM (SKIN)

DTLVS* TLV/BEI,1999

EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
 FEREAC 54,7740,1989
 MSHA STANDARD-AIR:TWA 10 PPM (25 MG/M3)
 DTLVS* 3,109,1971
 OSHA PEL (GEN INDU):8H TWA 10 PPM (25 MG/M3)
 CFRGBR 29,1910.1000,1994
 OSHA PEL (CONSTRUC):8H TWA 10 PPM (25 MG/M3)
 CFRGBR 29,1926.55,1994
 OSHA PEL (SHIPYARD):8H TWA 10 PPM (25 MG/M3)
 CFRGBR 29,1915.1000,1993
 OSHA PEL (FED CONT):8H TWA 10 PPM (25 MG/M3)
 CFRGBR 41,50-204.50,1994
 OEL-AUSTRALIA: TWA 10 PPM (25 MG/M3), JAN1993
 OEL-AUSTRIA: MAK 10 PPM (25 MG/M3), JAN1999
 OEL-BELGIUM: TWA 10 PPM (25 MG/M3), JAN1993
 OEL-DENMARK: TWA 10 PPM (25 MG/M3), JAN1999
 OEL-FINLAND: TWA 10 PPM (25 MG/M3), STEL 20 PPM (50 MG/M3), JAN1999
 OEL-FRANCE: VME 10 PPM (25 MG/M3), VLE 15 PPM (35 MG/M3), JAN1999
 OEL-GERMANY: MAK 10 PPM (25 MG/M3), JAN1999
 OEL-JAPAN: OEL 10 PPM (25 MG/M3), SKIN, JAN1999
 OEL-THE NETHERLANDS: MAC-TGG 10 PPM (25 MG/M3), JAN1999
 OEL-NORWAY: TWA 10 PPM (25 MG/M3), JAN1999
 OEL-THE PHILIPPINES: TWA 10 PPM (25 MG/M3), JAN1993
 OEL-POLAND: MAC(TWA) 2 MG/M3, MAC(STEL) 6 MG/M3, JAN1999
 OEL-RUSSIA: TWA 10 PPM, STEL 2 MG/M3, JAN1993
 OEL-SWEDEN: NGV 10 PPM (25 MG/M3), KTV 15 PPM (35 MG/M3), JAN1999
 OEL-SWITZERLAND: MAK-W 1000 PPM (6400 MG/M3), JAN1999
 OEL-TURKEY: TWA 10 PPM (25 MG/M3), JAN1993
 OEL-UNITED KINGDOM: TWA 10 PPM (25 MG/M3), SEP2000
 OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV;
 OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
 NIOSH REL TO ETHYLENEDIAMINE-AIR:10H TWA 10 PPM
 NIOSH* DHHS #92-100,1992
 NOHS 1974: HZD 32220; NIS 33; TNF 2126; NOS 35; TNE 15918
 NOES 1983: HZD 32220; NIS 77; TNF 6260; NOS 85; TNE 113007; TFE 29888
 EPA GENETOX PROGRAM 1988, NEGATIVE: CHO GENE MUTATION
 EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
 EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
 ON EPA IRIS DATABASE
 EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001
 NIOSH ANALYTICAL METHOD, 1994: ETHYLENEDIAMINE, 2540
 OSHA ANALYTICAL METHOD #ID-60

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