

MATERIAL SAFETY DATA SHEET

ETHYLENEDIAMINE, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 07/08/06

PRODUCT IDENTIFICATION

PRODUCT NAME: ETHYLENEDIAMINE
COMMON SYNONYMS: 1,2-ETHANEDIAMINE; 1,2-DIAMINOETHANE
CHEMICAL FAMILY: AMINES
FORMULA: $\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2$
FORMULA WT.: 60.10
CAS NO.: 107-15-3
NIOSH/RTECS NO.: KH8575000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 9299
CHEMTREC # (800) 424-9300 NATIONAL RESPONSE CENTER # (800) 424-8802
J.T.BAKER INC. 222 RED SCHOOL LANE PHILLIPSBURG, NJ 08865 24-HOUR
EMERGENCY TELEPHONE -- (201) 859-2151
EFFECTIVE: 01/04/94 ISSUED: 04/08/95
REVISION #03

PRECAUTIONARY LABELING

BAKER SAF-T-DATA* SYSTEM

HEALTH	-	3	SEVERE (POISON)
FLAMMABILITY	-	3	SEVERE (FLAMMABLE)
REACTIVITY	-	2	MODERATE
CONTACT	-	3	SEVERE (CORROSIVE)

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

U.S. PRECAUTIONARY LABELING

POISON DANGER

FLAMMABLE. CAUSES BURNS. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR

ABSORBED THROUGH SKIN.

KEEP AWAY FROM HEAT, SPARKS, FLAME. DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID BREATHING VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE

VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, USE WATER SPRAY, ALCOHOL FOAM, DRY CHEMICAL, OR CARBON DIOXIDE. FLUSH SPILL AREA WITH

WATER SPRAY.

INTERNATIONAL LABELING

FLAMMABLE. HARMFUL IN CONTACT WITH SKIN AND IF SWALLOWED. CAUSES BURNS. MAY

CAUSE SENSITIZATION BY SKIN CONTACT.

KEEP CONTAINER IN A WELL-VENTILATED PLACE. 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.

SAF-T-DATA* STORAGE COLOR CODE: RED (FLAMMABLE)

COMPONENTS

COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL
ACGIH/TLV			

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ETHYLENEDIAMINE 107-15-3 90-100 10 PPM 10
PPM

PHYSICAL DATA

BOILING POINT: 117 C (242 F) VAPOR PRESSURE (MMHG): 10
(AT 760 MM HG) (20 C)
MELTING POINT: 11 C (51 F) VAPOR DENSITY (AIR=1): 2.07
(AT 760 MM HG)
SPECIFIC GRAVITY: 0.90 EVAPORATION RATE: .91
(H2O=1) (BUTYL ACETATE = 1)
SOLUBILITY(H2O): COMPLETE (100%) % VOLATILES BY VOLUME: 100
(21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): N/A

PHYSICAL STATE: LIQUID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: COLORLESS LIQUID. AMMONIA ODOR.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP): 33 C (93 F) NFPA 704M RATING: 3-2-0
AUTOIGNITION TEMPERATURE: 384 C (725 F)
FLAMMABLE LIMITS: UPPER - 14.4 % LOWER - 4.2 %

FIRE EXTINGUISHING MEDIA

USE WATER SPRAY, ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED

BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE

MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE

WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE & EXPLOSION HAZARDS

VAPORS MAY FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES AND FLASH BACK.

CLOSED CONTAINERS EXPOSED TO HEAT MAY EXPLODE. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE.

TOXIC GASES PRODUCED

OXIDES OF NITROGEN, CARBON MONOXIDE, CARBON DIOXIDE

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT

NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE

NONE IDENTIFIED.

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV/TWA): 25 MG/M (10 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 25 MG/M (10 PPM)

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR ETHYLENEDIAMINE 1160
MG/KG

SKIN RABBIT LD50 FOR ETHYLENEDIAMINE 730
MG/KG

INTRAPERITONEAL RAT LD50 FOR ETHYLENEDIAMINE 76
MG/KG

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CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO
CARCINOGENICITY

NONE IDENTIFIED.

REPRODUCTIVE EFFECTS

NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: IRRITATION OF MUCOUS MEMBRANES, HEADACHE, NAUSEA,
VOMITING, DIZZINESS

SKIN CONTACT: IRRITATION, BURNS, SKIN SENSITIZATION

EYE CONTACT: IRRITATION, BURNS

SKIN ABSORPTION: RAPID ABSORPTION

INGESTION: NAUSEA, VOMITING, GASTROINTESTINAL IRRITATION,
BURNS TO

MOUTH AND THROAT

CHRONIC EFFECTS: KIDNEY DAMAGE, LIVER DAMAGE

TARGET ORGANS

RESPIRATORY SYSTEM, LIVER, KIDNEYS, SKIN

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY

INHALATION, INGESTION, ABSORPTION, SKIN CONTACT, EYE CONTACT

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, DO NOT INDUCE
VOMITING. IF

CONSCIOUS, GIVE WATER, MILK, OR MILK OF MAGNESIA.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING,
GIVE

ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT,

GIVE

OXYGEN. PROMPT ACTION IS ESSENTIAL.

SKIN CONTACT: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY
OF

WATER FOR AT LEAST 15 MINUTES WHILE REMOVING

CONTAMINATED

CLOTHING AND SHOES. WASH CLOTHING BEFORE RE-USE.

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY
OF

WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: YES PRESSURE: NO REACTIVITY: NO
EXTREMELY HAZARDOUS SUBSTANCE: YES CONTAINS ETHYLENEDIAMINE (RQ = 5,000
LBS,

TPQ = 10,000 LBS)

CERCLA HAZARDOUS SUBSTANCE: YES CONTAINS ETHYLENEDIAMINE (RQ = 5000
LBS)

SARA 313 TOXIC CHEMICALS: NO

TSCA INVENTORY: YES

REACTIVITY DATA

STABILITY: STABLE
OCCUR

HAZARDOUS POLYMERIZATION: WILL NOT

CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION

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INCOMPATIBLES: STRONG ACIDS, STRONG OXIDIZING AGENTS, HALOGEN ACIDS
AND HALOGEN COMPOUNDS, COPPER, COPPER ALLOYS,
COPPER
SALTS
DECOMPOSITION PRODUCTS: OXIDES OF NITROGEN, CARBON MONOXIDE, CARBON DIOXIDE

SPILL & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. SHUT OFF IGNITION SOURCES; NO FLARES, SMOKING OR FLAMES IN AREA. STOP LEAK IF YOU CAN DO SO WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. TAKE UP WITH SAND OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CONTAINER FOR LATER DISPOSAL. FLUSH AREA WITH WATER.
DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D001, D002 (IGNITABLE, CORROSIVE WASTE)

INDUSTRIAL PROTECTIVE EQUIPMENT

VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS.
RESPIRATORY PROTECTION: RESPIRATORY PROTECTION REQUIRED IF AIRBORNE CONCENTRATION EXCEEDS TLV. AT CONCENTRATIONS UP TO 500 PPM, A CHEMICAL CARTRIDGE RESPIRATOR WITH AMMONIA/AMINE CARTRIDGE IS RECOMMENDED. ABOVE THIS LEVEL, A SELF-CONTAINED BREATHING APPARATUS IS ADVISED.
EYE/SKIN PROTECTION: SAFETY GOGGLES AND FACE SHIELD, UNIFORM, PROTECTIVE SUIT, BUTYL RUBBER GLOVES ARE RECOMMENDED.

STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA* STORAGE COLOR CODE: RED (FLAMMABLE)
STORAGE REQUIREMENTS
KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA.
SPECIAL PRECAUTIONS
BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID. PRODUCT MAY SOLIDIFY AT ROOM TEMPERATURE.

TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)
PROPER SHIPPING NAME: ETHYLENEDIAMINE
HAZARD CLASS: 8, 3

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UN/NA: UN1604 REPORTABLE QUANTITY: 5000 LBS. PACKAGING GROUP: II
LABELS: 8 CORROSIVE, FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101

INTERNATIONAL (I.M.O.)
PROPER SHIPPING NAME: ETHYLENEDIAMINE
HAZARD CLASS: 8, 3.3 I.M.O. PAGE: 8170
UN: UN1604 MARINE POLLUTANTS: NO PACKAGING GROUP: II
LABELS: 8 CORROSIVE, FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR PART 176; IMDG CODE

AIR (I.C.A.O.)
PROPER SHIPPING NAME: ETHYLENEDIAMINE
HAZARD CLASS: 8, 3 PACKAGING GROUP: II
UN: UN1604
LABELS: 8 CORROSIVE, FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR PART 175; ICAO=== WE BELIEVE THE
TRANSPORTATION

FACTUAL AND DATA AND REFERENCES CONTAINED HEREIN TO BE
MEANT AS THE OPINION OF QUALIFIED EXPERTS. THE DATA IS
PRODUCT A GUIDE TO THE OVERALL CLASSIFICATION OF THE
BE AND IS NOT PACKAGE SIZE SPECIFIC, NOR SHOULD IT
THE TAKEN AS A WARRANTY OR REPRESENTATION FOR WHICH
CONSIDERATION, COMPANY ASSUMES LEGAL RESPONSIBILITY.=== THE
IN INFORMATION IS OFFERED SOLELY FOR YOUR
LOCAL INVESTIGATION, AND VERIFICATION. ANY USE OF THE
49CFR INFORMATION MUST BE DETERMINED BY THE USER TO BE
TRAINING 49 ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND
CFR 171.2, CERTIFICATION 172.204, AND EMPLOYEE
CFR 173.1(B).

U.S. CUSTOMS HARMONIZATION NUMBER: 29212100007

NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS
MUST BE USED FOR CARRYING. N/A = NOT APPLICABLE, OR NOT AVAILABLE N/E =
NOT ESTABLISHED. THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET
MEETS THE REQUIREMENTS OF THE UNITED STATES OCCUPATIONAL SAFETY AND
HEALTH ACT AND REGULATIONS PROMULGATED THEREUNDER (29 CFR 1910.1200 ET.
SEQ.) AND THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM.
THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE
PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN, OR
SUPERVISED BY A PERSON TRAINED IN, CHEMICAL HANDLING. THE USE IS
RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL

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FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHIN INCLUDING EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING CHEMICAL VAPORS/FUMES. EXPOSURE TO THIS PRODUCT MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. THIS CHEMICAL MAY INTERACT WITH OTHER SUBSTANCES. SINCE THE POTENTIAL USES ARE SO VARIED, BAKER CANNOT WARN OF ALL OF THE POTENTIAL DANGERS OF USE OR INTERACTION WITH OTHER CHEMICALS OR MATERIALS. BAKER WARRANTS THAT THE CHEMICAL MEETS THE SPECIFICATIONS SET FORTH ON THE LABEL. BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE. THE USER SHOULD RECOGNIZE THAT THIS PRODUCT CAN CAUSE SEVERE INJURY AND EVE DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET. NOTE: CHEMTREC, CANUTEC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER ASSISTANCE. COPYRIGHT 1995 J.T.BAKER INC. * TRADEMARKS OF J.T.BAKER INC. APPROVED BY QUALITY ASSURANCE DEPARTMENT.