

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

PRODUCT IDENTIFICATION

PRODUCT NAME: ETHYLENE GLYCOL
COMMON SYNONYMS: 1,2-ETHANEDIOL; EG; GLYCOL; 1,2-DIHYDROXYETHANE
CHEMICAL FAMILY: ALCOHOLS
FORMULA: HOCH₂CH₂OH
FORMULA WT.: 62.07
CAS NO.: 107-21-1
NIOSH/RTECS NO.: KW2975000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 9140,5387,5845,5574,9346,9349,L715,9356,9300

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 #05

PRECAUTIONARY LABELING

BAKER SAF-T-DATA* SYSTEM

HEALTH	-	2	MODERATE
FLAMMABILITY	-	1	SLIGHT
REACTIVITY	-	1	SLIGHT
CONTACT	-	2	MODERATE

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

U.S. PRECAUTIONARY LABELING

WARNING

CAUSES IRRITATION. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR
ABSORBED THROUGH SKIN.
AVOID CONTACT WITH EYES, SKIN, CLOTHING. AVOID BREATHING VAPOR. KEEP IN
TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE VENTILATION. WASH
THOROUGHLY
AFTER HANDLING. IN CASE OF SPILL, SOAK UP WITH SAND OR EARTH. FLUSH
SPILL
AREA WITH WATER.

INTERNATIONAL LABELING

HARMFUL IF SWALLOWED.
KEEP OUT OF REACH OF CHILDREN.

PRECAUTIONARY LABELING (CONTINUED)

SAF-T-DATA* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

COMPONENTS

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

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

ETHYLENE GLYCOL	107-21-1	99-100	50	PPM	50
-----------------	----------	--------	----	-----	----

PPM

THE TLV AND PEL LISTED DENOTE CEILING LIMITS.

PHYSICAL DATA

BOILING POINT: 197 C (386 F) (AT 760 MM HG)	VAPOR PRESSURE (MMHG): 0.06 (20 C)
--	---------------------------------------

MELTING POINT: -13 C (8 F) (AT 760 MM HG)	VAPOR DENSITY (AIR=1): 2.1
--	----------------------------

SPECIFIC GRAVITY: 1.12 (H ₂ O=1)	EVAPORATION RATE: 0.01 (BUTYL ACETATE = 1)
--	---

SOLUBILITY(H ₂ O): 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 VISCOUS LIQUID. LIGHT ODOR.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP): 111 C (232 F)	NFPA 704M RATING: 1-1-0
---	-------------------------

AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: UPPER - 15.3 % LOWER - 3.2 %

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

NONE IDENTIFIED.

TOXIC GASES PRODUCED

CARBON MONOXIDE, CARBON DIOXIDE

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT

NONE IDENTIFIED.

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE
NONE IDENTIFIED.

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV/TWA): 125 MG/M (50 PPM)

TLV LISTED DENOTES CEILING LIMIT.

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 125 MG/M (50 PPM)

PEL LISTED DENOTES CEILING LIMIT.

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR ETHYLENE GLYCOL MG/KG	4700
INTRAPERITONEAL RAT LD50 FOR ETHYLENE GLYCOL MG/KG	5010

SKIN RABBIT LD50 FOR ETHYLENE GLYCOL G/KG	19.5
INTRAVENOUS RAT LD50 FOR ETHYLENE GLYCOL MG/KG	3260

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

CARCINOGENICITY
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS
NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, DROWSINESS,
IRRITATION OF UPPER RESPIRATORY TRACT,
UNCONSCIOUSNESS

SKIN CONTACT: IRRITATION

EYE CONTACT: IRRITATION

SKIN ABSORPTION: MAY BE HARMFUL

INGESTION: HEADACHE, NAUSEA, VOMITING, DIZZINESS,
GASTROINTESTINAL IRRITATION, CONVULSIONS, RESPIRATORY FAILURE,
CENTRAL NERVOUS SYSTEM DEPRESSION, UNCONSCIOUSNESS, AND MAY
BE FATAL.

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

CHRONIC EFFECTS: DAMAGE TO LIVER, KIDNEYS, LUNGS, BLOOD, CENTRAL
NERVOUS
SYSTEM

TARGET ORGANS
RESPIRATORY SYSTEM, LUNGS, LIVER, KIDNEYS, BLOOD, CENTRAL NERVOUS
SYSTEM,
GI TRACT

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, IF CONSCIOUS, GIVE
LARGE AMOUNTS OF WATER. INDUCE VOMITING.

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, FLUSH SKIN WITH WATER.

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: NO PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO

CERCLA HAZARDOUS SUBSTANCE: NO

SARA 313 TOXIC CHEMICALS: YES CONTAINS ETHYLENE GLYCOL
GENERIC CLASS: GENERIC CLASS REMOVED FROM CFR:

7/1/91

TSCA INVENTORY: YES

REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT
OCCUR

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

INCOMPATIBLES: STRONG OXIDIZING AGENTS, STRONG ACIDS,
POLYMERIZATION CATALYSTS & ACCELERATORS, SULFURIC ACID, NITRIC

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

ACID

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE

SPILL & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SUITABLE PROTECTIVE CLOTHING. TAKE UP WITH SAND OR OTHER
NON-COMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CONTAINER FOR
LATER
DISPOSAL. FLUSH SPILL AREA WITH WATER.

DISPOSAL PROCEDURE

DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL
ENVIRONMENTAL REGULATIONS.

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
ABOVE 50
PPM, A SELF-CONTAINED BREATHING APPARATUS IS
ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES, UNIFORM, APRON, RUBBER GLOVES
ARE
RECOMMENDED.

STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA* STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY GENERAL CHEMICAL
STORAGE
AREA. ISOLATE FROM INCOMPATIBLE MATERIALS.

TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)
INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)
MARINE POLLUTANTS: NO

AIR (I.C.A.O.)

PROPER SHIPPING NAME: CHEMICALS, N.O.S. (NON-REGULATED)

U.S. CUSTOMS HARMONIZATION NUMBER: 29053100005

NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS

MATERIAL SAFETY DATA SHEET

ETHYLENE GLYCOL, REAGENT GRADE
CAROLINA BIOLOGICAL

Revised: 09/05/00
Replaces: None
Printed: 04/08/06

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 USER IS RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING 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 EVEN DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEEDED. 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.