



BORTECH

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Monoethylene Glycol (MEG)

SECTION 1: PRODUCT DESCRIPTION

TRADE NAME	Monoethylene Glycol
SYNONYMS	MONOETHYLENE GLYCOL; ETHYLENE ALCOHOL
CHEMICAL NAME	Ethane-1,2-diol
FORMULA	HOCH ₂ CH ₂ OH

SECTION 2: HAZARDS IDENTIFICATION

INHALATION	EXCESSIVE EXPOSURES MAY CAUSE IRRITATION TO EYES, NOSE, THROAT AND LUNGS. IRRITATION TO RESPIRATORY TRACT; CENTRAL NERVOUS SYSTEM (BRAIN) EFFECTS; DISCOMFORT, DISAGREEABLE ODOR, NAUSEA. REPEATED EXCESSIVE EXPOSURES MAY CAUSE LIVER EFFECTS OR DAMAGE. KIDNEY EFFECTS OR DAMAGE. CHRONIC, ADVERSE SYSTEMIC EFFECTS.
SKIN CONTACT	SKIN ABSORPTION OF MATERIAL MAY PRODUCE SYSTEMIC TOXICITY. CONTAINS A MATERIAL(S) WHICH MAY CAUSE IRRITATION WITH PROLONGED OR REPEATED CONTACT.
EYE CONTACT	CONTACT WITH THE EYE MAY CAUSE IRRITATION.
INGESTION	HARMFUL OR FATAL IF SWALLOWED. INGESTION OF THIS MATERIAL MAY CAUSE ABDOMINAL PAIN; CENTRAL NERVOUS SYSTEM (BRAIN) EFFECTS; DIFFICULTY IN BREATHING; RESPIRATORY FAILURE; AND DEATH. INGESTION OF THIS MATERIAL MAY CAUSE DAMAGE TO KIDNEYS.

SECTION 3: FIRST AID MEASURES

INHALATION	MOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, OBTAIN MEDICAL ASSISTANCE.
SKIN CONTACT	WASH WITH SOAP AND WATER UNTIL NO ODOR REMAINS. IF REDNESS OR SWELLING DEVELOPS, OBTAIN MEDICAL ASSISTANCE. OBTAIN MEDICAL ATTENTION. IMMEDIATELY REMOVE SOAKED CLOTHING. WASH CLOTHING BEFORE REUSE.
EYE CONTACT	FLUSH WITH WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ASSISTANCE.
INGESTION	GIVE LIQUIDS AND INDUCE VOMITING UNLESS VICTIM IS UNCONSCIOUS. OBTAIN EMERGENCY MEDICAL ATTENTION. SMALL AMOUNTS WHICH ACCIDENTALLY ENTER MOUTH SHOULD BE RINSED OUT UNTIL TASTE OF IT IS GONE.

SECTION 4: FIRE AND EXPLOSION HAZARDS

FLASHPOINT: 245 CLOSED CUP (° F); 111 CLOSED CUP (° C)
LOWER EXPLOSIVE LIMIT (LEL): 3.2 % VOLUME
UPPER EXPLOSIVE LIMIT (UEL): ESTIMATED @ 15.3 % VOLUME
AUTOIGNITION TEMP.: 748 ° F; 398 ° C
EXTINGUISHING MEDIA: WATER SPRAY. ALCOHOL RESISTANT FOAM. DRY CHEMICAL CARBON DIOXIDE
FIRE FIGHTING PROCEDURES: USE WATER SPRAY. COOL TANK/ CONTAINER. WEAR SELF-CONTAINED BREATHING APPARATUS. WEAR STRUCTURAL FIREFIGHTERS PROTECTIVE CLOTHING.
EXTINGUISHING MEDIA: WATER SPRAY. ALCOHOL RESISTANT FOAM. DRY CHEMICAL CARBON DIOXIDE



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SECTION 5: TOXICOLOGICAL INFORMATION

FOR THE PRODUCT:

INHALATION: OVEREXPOSURE TO MIST OR VAPORS MAY CAUSE EYE NOSE, THROAT & RESPIRATORY TRACT IRRITATION, CNS (BRAIN) EFFECTS, DIZZINESS, DRUNKENNESS, INCOORDINATION, COMA, RESPIRATORY FAILURE, OR DEATH. EXCESSIVE EXPOSURES MAY CAUSE BRAIN, LIVER, AND/OR KIDNEY EFFECTS AND DAMAGE

SKIN & EYE: LARGE ACUTE EXPOSURE MAY CAUSE SYSTEMIC EFFECTS

IRRITANT ON CONTACT:

INGESTION: TOXIC] HARMFUL OR FATAL IF SWALLOWED.

ACUTE POISONING (AS LITTLE AS 100 ML IN HUMANS) CHARACTERIZED BY GI PAIN, NAUSEA, VOMITING, MUSCLE TENDERNESS, CNS DEPRESSION, POSSIBLE RESPIRATORY AND RENAL FAILURE, DEATH. IN LAB ANIMALS BY ORAL AND INHALATION EXPOSURE EMBRYO TOXICITY & TERATOGENICITY WERE REPORTED.

ETHYLENE GLYCOL (COMPONENT):

INHALATION: OVEREXPOSURE TO MIST OR VAPORS GENERATED BY HEATING MAY CAUSE EYE, NOSE, THROAT, & RESPIRATORY IRRITATION, CNS (BRAIN) EFFECTS & DIZZINESS. EXCESSIVE PROLONGED EXPOSURES MAY CAUSE KIDNEY, LIVER, BLOOD, BRAIN EFFECTS OR DAMAGE. **SKIN & EYE:** LARGE ACUTE EXPOSURE MAY CAUSE SYSTEMIC TOXICITY. **IRRITANT ON CONTACT.** **ORAL:** TOXIC] HARMFUL OR FATAL IF SWALLOWED. ACUTE POISONING (AS LITTLE AS 100 ML IN HUMANS HAS PRODUCED LETHALITY) CHARACTERIZED BY GI PAIN, NAUSEA, VOMITING, MUSCLE SPASMS, CONVULSIONS AND CNS DEPRESSION, POSSIBLE RENAL AND RESPIRATORY FAILURE, DEATH. IN LAB ANIMALS BY ORAL & INHALATION EXPOSURE FETAL TOXICITY AND BIRTH DEFECTS WERE REPORTED.

SECTION 6: PHYSICAL DATA

APPEARANCE AND ODOR: COLORLESS LIQUID ODOR SLIGHTLY SWEET.	ODOR THRESHOLD: –
PH: 6-8 @ 558g/l H ₂ O	VAPOR PRESSURE: 0.08 (MM HG @ 20 °c)
SOLUBILITY IN WATER: COMPLETE	BOILING POINT: 388°F, 198°C
SULUB in OTHER: Alcol-Ether- Acetone	MELTING POINT: -11.5°C
EVAPORATION RATE: 1000X SLOWER (ETHYL ETHER=1)	MOLECULAR WEIGHT: 62.07
DECOMO. TEMP: –	DENSITY/SPECIFIC GRAVITY: 1.1 (WATER=1)
VISCOSITY: N.D. SJS@ N.D °F ... N.D. CST@ N.D DEG C	VAPOR DENSITY.: 2.1 (AIR=1)

SECTION 7: HAZARDOUS INGREDIENTS

INGREDIENTS	% (W/W)	T.L.V	TOXICOLIGICAL	CAS NO.
ETHYLENE GLYCOL	99.00	–	Oral LD50 : 20,760 mg/kg in rats	107-21-1



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SECTION 8: HEALTH DATA:

WARNING] HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION. CAUSES EYE IRRITATION. HARMFUL OR FATAL IF SWALLOWED. CAN CAUSE SEVERE CHRONIC TOXICITY.

The major danger from ethylene glycol is from its ingestion. Due to its sweet taste, children and animals will sometimes consume large quantities of it if given access to antifreeze. Symptoms of ethylene glycol poisoning follow a three-step progression. Initially, victims may appear to be intoxicated, exhibiting symptoms such as dizziness, slurred speech, and confusion. Over time, the body metabolizes ethylene glycol into another toxin, [oxalic acid](#). Buildup of this substance results in irregularities in the victim's [heartbeat](#) and [breathing](#). In the final stage, the victim suffers [kidney](#) failure. In developed countries, [denatonium](#) is generally added to ethylene glycol preparations in order to offset the sweet taste.

POTENTIAL HEALTH EFFECTS: PRIMARY ROUTES OF ENTRY- INHALATION(X) SKIN(X) EYE(X) INGESTION(X)

SECTION 9: PROTECTION INFORMATION

CONSULT WITH A HEALTH/SAFETY PROFESSIONAL FOR SPECIFIC SELECTION VENTILATION VENTILATE AS NEEDED TO COMPLY WITH EXPOSURE LIMIT. LOCAL EXHAUST VENTILATION RECOMMENDED. MECHANICAL VENTILATION RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

EYE: SPLASH PROOF CHEMICAL GOGGLES RECOMMENDED TO PROTECT AGAINST SPLASH OF PRODUCT

GLOVES: PROTECTIVE GLOVES RECOMMENDED WHEN PROLONGED SKIN CONTACT CANNOT BE AVOIDED. POLYETHYLENE; NEOPRENE; NITRILE; POLYVINYL ALCOHOL; NATURAL RUBBER; BUTYL RUBBER

RESPIRATOR: CONCENTRATION-IN-AIR DETERMINES PROTECTION NEEDED. USE ONLY NIOSH CERTIFIED RESPIRATORY PROTECTION. RESPIRATORY PROTECTION USUALLY NOT NEEDED UNLESS PRODUCT IS HEATED OR MISTED. HALF-MASK AIR PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES IS ACCEPTABLE TO 10 TIMES THE EXPOSURE LIMIT. FULL-FACE AIR PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES IS ACCEPTABLE TO 50 TIMES THE EXPOSURE LIMIT NOT TO EXCEED THE CARTRIDGE LIMIT OF 1000 PPM. PROTECTION BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE-DEMAND FULL-FACE SUPPLIED AIR RESPIRATOR OR SCBA FOR EXPOSURES ABOVE 50X THE EXPOSURE LIMIT. IF EXPOSURE IS ABOVE IDLH (IMMEDIATELY DANGEROUS TO LIFE & HEALTH) OR THERE IS THE POSSIBILITY OF AN UNCONTROLLED RELEASE OR EXPOSURE LEVELS ARE UNKNOWN THEN USE A POSITIVE PRESSURE-DEMAND FULL-FACE SUPPLIED AIR RESPIRATOR WITH ESCAPE BOTTLE OR SCBA.



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SECTION 10: REACTIVITY DATA

STABILITY	STABLE
CONDITIONS TO AVOID	EXTREME HEAT WILL IGNITE IN AIR A748F. DO NOT STORE AT TEMPERATURES ABOVE 120F (60C).
INCOMPATIBILITY	STRONG OXIDIZING CHEMICALS REACTS VIOLENTLY WITH CHLOROSULFONIC ACIDOLEUM, SULFURIC ACID, STRONG BASES
HAZARDOUS DECOMPOSITION PRODUCTS	CARBON MONOXIDE AND ASPHYXIANTS ARE PRODUCED BY BURNING.
HAZARDOUS POLYMERIZATION	WILL NOT OCCUR

SECTION 11: SPILL AND DISPOSAL PROCEDURES.

FOLLOW FEDERAL, STATE AND LOCAL REGULATIONS

IF UNCONTAMINATED. DO NOT FLUSH TO DRAIN/ STORM SEWER. CONTRACT TO AUTHORIZED DISPOSAL SERVICE

CONTAIN SPILL FOR LARGE SPILL, LEAK OR RELEASE USE PERSONAL PROTECTIVE EQUIPMENT STATED. ADVISE EPA; STATE AGENCY IF REQUIRED. ABSORB ON INERT MATERIAL SHOVEL, SWEEP OR VACUUM SPILL. FLUSH WITH WATER AND REMOVE CONTAMINATED ARTICLES.

SECTION 12: HANDLING AND STORAGE

KEEP IN COOL, DRY PLACE. KEEP IN WELL VENTILATED SPACE. STORAGE HAS TEMPERATURE LIMITS. NFPA CLASS IIIB STORAGE. CONSULT NFPA AND OSHA CODES. AVOID PROLONGED BREATHING OF MIST OR VAPOR. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WASH THOROUGHLY AFTER HANDLING.

SECTION 13: ECOLOGICAL INFORMATION

AQUATIC TOXICITY: TLM96 (CONCENTRATION IN WATER THAT KILLS 50% OF EXPOSED ORGANISMS) IS IN THE RANGE OF 100 TO 1000 PPM. LC50 (24 HRS) TO GOLDFISH: >5,000 MG/L

THE TOXICITY THRESHOLD FOR SCENDESMUS QUADRICAUDA (GREEN ALGAE) TO ETHYLENE GLYCOL IS >10,000 MG/L

SECTION 14: HAZARDS CLASSIFICATION:



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SHIPPING NAME	Environmentally Hazardous Substance, Liquid, N.O.S.(Ethylene Glycol)
HAZARD CLASS	--
UN/NA NUMBER	--
PACKING GROUP	3
SUBSIDIARY HAZARD	--

SECTION 15: ACCIDENTAL RELEASE MEASURES:

SAFEGUARDS (PERSONNEL): Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up. Evacuate personnel, thoroughly ventilate area, and use self-contained breathing apparatus.

INITIAL CONTAINMENT: Remove source of heat, sparks, flame, impact, friction or electricity. Dike spill. Prevent material from entering sewers, waterways, or low areas.

SPILL CLEAN UP: Recover free liquid for reuse or reclamation. Soak up with sawdust, sand, oil dry or other absorbent material.

SECTION 16: OTHER INFORMATION:

NFPA/HMIS CLASSIFICATION

HEALTH : 1 / 1 FIRE : 1 / 1 REACTIVITY : 0 / 0

Prepared by Marketing and sales service Department