

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**SUBSTANCE: ETHYLENE GLYCOL MONOMETHYL ETHER**

**TRADE NAMES/SYNONYMS:**

MTG MSDS 218; ETHYLENE GLYCOL METHYL ETHER; GLYCOL METHYL ETHER; METHOXYETHANOL; BETA-METHOXYETHANOL; 2-METHOXYETHANOL; 2-METHOXYETHYL ALCOHOL; METHOXYETHYLENE GLYCOL; METHOXYHYDROXYETHANE; METHYL CELLOSOLVE; METHYL GLYCOL; METHYL OXITOL; MONOMETHYLGLYCOL; UN 1188; C3H8O2; MAT14340; RTECS KL5775000

**CHEMICAL FAMILY:** glycol ethers

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Dec 11 2008

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## 2. COMPOSITION, INFORMATION ON INGREDIENTS

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**COMPONENT:** ETHYLENE GLYCOL MONOMETHYL ETHER

**CAS NUMBER:** 109-86-4

**PERCENTAGE:** 100.0

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## 3. HAZARDS IDENTIFICATION

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**NFPA RATINGS (SCALE 0-4):** HEALTH=2 FIRE=2 REACTIVITY=0

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** liquid

**ODOR:** pleasant odor

**MAJOR HEALTH HAZARDS:** central nervous system depression, kidney damage

**PHYSICAL HAZARDS:** Combustible liquid and vapor.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** irritation, headache, drowsiness, dizziness, loss of coordination

**LONG TERM EXPOSURE:** same as effects reported in short term exposure, nausea, vomiting, diarrhea, loss of appetite, weight loss, headache, fatigue, disorientation, difficulty speaking, emotional disturbances, tremors, hearing loss, visual disturbances, sterility, blood disorders, bone disorders, kidney damage, reproductive effects, brain damage

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** same as effects reported in short term inhalation

**LONG TERM EXPOSURE:** same as effects reported in long term inhalation

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** irritation

**INGESTION:**

**SHORT TERM EXPOSURE:** nausea, vomiting, disorientation, internal bleeding, kidney damage, liver damage, effects on the brain, coma

**LONG TERM EXPOSURE:** kidney damage, reproductive effects

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## 4. FIRST AID MEASURES

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**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**SKIN CONTACT:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**EYE CONTACT:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**INGESTION:** If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

**NOTE TO PHYSICIAN:** For ingestion, consider gastric lavage. Consider oxygen.

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## 5. FIRE FIGHTING MEASURES

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**FIRE AND EXPLOSION HAZARDS:** Moderate fire hazard. Vapor/air mixtures are explosive above flash point.

**EXTINGUISHING MEDIA:** alcohol-resistant foam, carbon dioxide, regular dry chemical, water, alcohol-resistant foam

Large fires: Use alcohol-resistant foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile).

**FLASH POINT:** 102 F (39 C) (CC)

**LOWER FLAMMABLE LIMIT:** 1.8%

**UPPER FLAMMABLE LIMIT:** 14%

**AUTOIGNITION:** 545 F (285 C)

**FLAMMABILITY CLASS (OSHA):** II

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## 6. ACCIDENTAL RELEASE MEASURES

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### **WATER RELEASE:**

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

### **OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

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## 7. HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. May form peroxides during prolonged storage. Store in a tightly closed container. Avoid contact with light. Store in a cool, dry place. Check peroxide content before use. Do not evaporate or distill to dryness. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

**ETHYLENE GLYCOL MONOMETHYL ETHER:**

**2-METHOXYETHANOL (EGME):**

25 ppm (80 mg/m<sup>3</sup>) OSHA TWA (skin)

0.1 ppm ACGIH TWA (skin)

0.1 ppm (0.3 mg/m<sup>3</sup>) NIOSH recommended TWA 10 hour(s) (skin)

**VENTILATION:** Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Wear appropriate chemical resistant gloves.

**RESPIRATOR:** The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

**1 ppm**

Any supplied-air respirator.

**2.5 ppm**

Any supplied-air respirator operated in a continuous-flow mode.

**5 ppm**

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

**100 ppm**

Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

**200 ppm**

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

**Escape -**

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**COLOR:** colorless

**ODOR:** pleasant odor

**MOLECULAR WEIGHT:** 76.10

**MOLECULAR FORMULA:** H-O-C-H<sub>2</sub>-C-H<sub>2</sub>-O-C-H<sub>3</sub>

**BOILING POINT:** 255 F (124 C)

**FREEZING POINT:** -121 F (-85 C)

**VAPOR PRESSURE:** 9.7 mmHg @ 20 C

**VAPOR DENSITY (air=1):** 2.6

**SPECIFIC GRAVITY (water=1):** 0.9647

**WATER SOLUBILITY:** soluble

**PH:** Not available

**VOLATILITY:** Not available

**ODOR THRESHOLD:** 60 ppm

**EVAPORATION RATE:** Not available

**VISCOSITY:** 0.85 cP @ 16 C

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**SOLVENT SOLUBILITY:**

**Soluble:** alcohol, ether, acetone, benzene, glycerol, dimethylformamide

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** May form explosive peroxides. Avoid prolonged storage or contact with air, light or storage and use above room temperature.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:** bases, oxidizing materials, combustible materials

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: oxides of carbon

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**ETHYLENE GLYCOL MONOMETHYL ETHER:**

**IRRITATION DATA:** 483 mg/24 hour(s) skin-rabbit mild; 97 mg eyes-rabbit; 500 mg/24 hour(s) eyes-rabbit mild; 10 ug eyes-guinea pig mild

**TOXICITY DATA:** 1500 ppm/7 hour(s) inhalation-rat LC50; 1280 mg/kg skin-rabbit LD50; 2370 mg/kg oral-rat LD50

**ACUTE TOXICITY LEVEL:**

Moderately Toxic: inhalation, dermal absorption, ingestion

**TARGET ORGANS:** central nervous system, kidneys

**MUTAGENIC DATA:** Available.

**REPRODUCTIVE EFFECTS DATA:** Available.

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## 12. ECOLOGICAL INFORMATION

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**ECOTOXICITY DATA:**

**FISH TOXICITY:** 1000000 ug/L 96 hour(s) LC50 (Mortality) Bluegill (*Lepomis macrochirus*)

**INVERTEBRATE TOXICITY:** 23440 ug/L 48 hour(s) LC50 (Mortality) Mussel (*Lamellidens marginalis*)

**ALGAL TOXICITY:** >4000 ug/L 72 hour(s) EC50 (Growth) Blue-green algae (*Anabaena flosaquae*)

**FATE AND TRANSPORT:**

**BIOCONCENTRATION:** 1692 ug/L 4 hour(s) BCF (Residue) Rainbow trout, donaldson trout (*Oncorhynchus mykiss*) 4.2 ug/L

**ENVIRONMENTAL SUMMARY:** Harmful to aquatic life.

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### 13. DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

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### 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**

**PROPER SHIPPING NAME:** Ethylene glycol monomethyl ether

**ID NUMBER:** UN1188

**HAZARD CLASS OR DIVISION:** 3

**PACKING GROUP:** III

**LABELING REQUIREMENTS:** 3

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**

**SHIPPING NAME:** Ethylene glycol monomethyl ether

**UN NUMBER:** UN1188

**CLASS:** 3

**PACKING GROUP/CATEGORY:** III

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### 15. REGULATORY INFORMATION

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**U.S. REGULATIONS:**

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):** Not regulated.

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):** Not regulated.

**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):** Not regulated.

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B**

**and C):**

ACUTE: Yes

CHRONIC: Yes

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: No

**SARA TITLE III SECTION 313 (40 CFR 372.65):**

**2-METHOXYETHANOL (EGME)**

**OSHA PROCESS SAFETY (29 CFR 1910.119):** Not regulated.

**STATE REGULATIONS:**

**California Proposition 65:**

Known to the state of California to cause the following:

**2-METHOXYETHANOL (EGME)**

Developmental toxicity (Jan 01, 1989)

Male reproductive toxicity (Jan 01, 1989)

**CANADIAN REGULATIONS:**

**WHMIS CLASSIFICATION:** Not determined.

**NATIONAL INVENTORY STATUS:**

**U.S. INVENTORY (TSCA):** Listed on inventory.

**TSCA 12(b) EXPORT NOTIFICATION:**

**2-METHOXYETHANOL**

**CAS NUMBER:** 109-86-4

**SECTION 5**

**CANADA INVENTORY (DSL/NDSL):** Not determined.

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