



## MATERIAL SAFETY DATA SHEET

### Product name : MEG, MONOETHYLENE GLYCOL

#### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

**Product identification :** MEG / T°C  
**Product Use:** Antifreeze/Coolant  
**Product Number(s):** MEG20F/T°C or MEG220F/T°C

#### Company Identification

**AEROCHEM**  
Address: ZA DU TOUCHEMORIN  
F-35420 LA BAZOUGE DU DESERT  
FRANCE  
Phone : 33 (0)2 99 98 11 03 . Fax :33(0)2 99 98 15 33

#### Health Emergency

Europe: 0044/(0)18 65 407333  
Poison Control Center: 0032/(0)70 245 245

#### SECTION 2 HAZARDS IDENTIFICATION

**CLASSIFICATION:** Xn; R22

#### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to be harmful.

**Ingestion:** May be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

**DELAYED OR OTHER HEALTH EFFECTS:** Not classified.

**ENVIRONMENTAL EFFECTS:** Not classified.

#### SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	EC NUMBER	SYMBOL / RISK PHRASES	AMOUNT
Ethylene glycol	203-473-3	Xn/R22	25 - 98 %weight
Sodium 2-ethylhexanoate	243-283-8	Xn/Repro. Cat. 3/R63	1 - 5.00 %weight

The full text of all R-phrases is shown in Section 16. This product contains a bittering agent.



#### SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

#### SECTION 5 FIRE FIGHTING MEASURES

##### FLAMMABLE PROPERTIES:

**Flashpoint:** (Pensky-Martens Closed Cup) 115 °C (239 °F) (M in)

**Autoignition:** No data available

**Flammability (Explosive) Limits (% by volume in air):** Lower: No data available Upper: No data available

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames. Dry Chemical, CO<sub>2</sub>, AFFF Foam or alcohol resistant foam.

##### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

#### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities as appropriate or required.

#### SECTION 7 HANDLING AND STORAGE

**Specific Use:** Antifreeze/Coolant

**Precautionary Measures:** Do not taste or swallow. Do not breathe vapor or fumes. Keep out of the reach of children.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.



**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

### ENGINEERING CONTROLS:

Use in a well-ventilated area.

### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

**Respiratory Protection:** No respiratory protection is normally required.

### Occupational Exposure Limits:

Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Ethylene glycol	EU-Indicative	52 mg/m <sup>3</sup>	104 mg/m <sup>3</sup>	--	Skin
Ethylene glycol	United Kingdom	52 mg/m <sup>3</sup>	104 mg/m <sup>3</sup>	--	Skin

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Attention: the data below are typical values and do not constitute a specification.**

**Color:** Pink

**Physical State:** Liquid

**Odor:** Faint or Mild

**pH:** No data available

**Vapor Pressure:** No data available

**Vapor Density (Air = 1):** No data available

**Boiling Point:** No data available

**Solubility:** Soluble in water.

**Freezing Point:** -20°C (-4°F) (Approximate)

**Density:** 1.1 kg/l @ 20°C (68°F)

**Viscosity:** No data available



## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products:** Aldehydes (Elevated temperatures), Ketones (Elevated temperatures)

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly in the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

## SECTION 12 ECOLOGICAL INFORMATION

### ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

### MOBILITY

No data available.



#### **PERSISTENCE AND DEGRADABILITY**

This material is expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

#### **POTENTIAL TO BIOACCUMULATE**

Bioconcentration Factor: No data available.  
Octanol/Water Partition Coefficient: No data available

### **SECTION 13 DISPOSAL CONSIDERATIONS**

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations. In accordance with European Waste Catalogue (E.W.C.) the codification is the following: 16 01 14

### **SECTION 14 TRANSPORT INFORMATION**

The description shown may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**ADR/RID Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ADR

**ICAO/IATA Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

**IMO/IMDG Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

### **SECTION 15 REGULATORY INFORMATION**

#### **REGULATORY LISTS SEARCHED:**

01=EU. Directive 76/769/EEC: Restrictions on the marketing and use of certain dangerous substances.  
02=EU Directive 90/394/EEC: Carcinogens at work.  
03=EU Directive 92/85/EEC: Pregnant or breastfeeding workers.  
04=EU Directive 96/82/EC (Seveso II): Article 9.  
05=EU Directive 96/82/EC (Seveso II): Articles 6 and 7.  
06=EU Directive 98/24/EC: Chemical agents at work.

The following components of this material are found on the regulatory lists indicated.

Ethylene glycol 06

#### **CHEMICAL INVENTORIES:**

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

#### **COUNTRY REGISTRATION:**

Denmark: YES  
Italy: YES  
Norway: YES (P-68550)  
Sweden: YES (425413-2)

#### **CLASSIFICATION - LABELING:**

Under the criteria of the directive EEC/67/548 (dangerous substances) and EEC/1999/45 (dangerous preparations):

**Symbols:** Xn – Harmful



## SECTION 16 OTHER INFORMATION

### Full text of R-phrases:

R22; Harmful if swallowed.

R63; Possible risk of harm to the unborn child.

### ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.