

Nan Ya Plastics Corporation  
**Safety Data Sheet**

**1. PRODUCT IDENTIFICATION**

**Product Name:** Ethylene Glycol  
**Synonyms:** 1,2-ethanediol; glycol; EG; MEG; ethane-1,2-diol

**Manufacturer:** Nan Ya Plastics Corporation Petrochemicals 3<sup>rd</sup> Division EG Plant  
Formosa Industrial Park No.2, Mai Liao Country, Yun Lin County, Taiwan R.O.C

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**NPC Product Code:** EG001  
**Product Use:** Various industrial uses.  
**Physical Description:** Clear liquid  
**Formula:** C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>

**2. HAZARD IDENTIFICATION****Emergency Overview:****DANGERS**

- Harmful if swallowed.
- May be harmful if inhaled.
- May cause damage to organs by prolonged or repeated exposure if swallowed.
- Causes eye irritation.
- May cause respiratory irritation.
- Not fit for human and animal consumption.

**3. PRODUCT INGREDIENTS**

<b>Components</b>	<b>Percent (%)</b>
<b>Ethylene Glycol</b>	99-100
CAS Number:	107-21-1
GHS Classification:	Acute Tox. 4, Eye Irrit. 2B, STOT-SE3; STOT-RE2; H302, H320, H333, H335, H373

#### 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Immediately flush eyes with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Get immediate medical attention.
<b>Skin Contact:</b>	Remove contaminated clothing and shoes. Wash affected skin area with soap and water. Get immediate medical attention.
<b>Inhalation:</b>	Remove to fresh air. Get immediate medical attention.
<b>Ingestion:</b>	If ingested, dilute swallowed material by drinking water. Never give anything by mouth to an unconscious person. Get immediate medical attention.
<b>Other Instructions:</b>	Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas. Treat symptomatically and supportively.

#### 5. FIRE-FIGHTING MEASURES

<b>Flash Point:</b>	231 °F (111 °C) (Closed Cup)	
<b>Autoignition Temperature:</b>	752 °F (400 °C)	
<b>Flammable Limits, in Air:</b>		
Lower Explosive Limit (LEL):	3.2%	
Upper Explosive Limit (UEL):	15.3%	
<b>Extinguishing Media:</b>	Dry chemical, foam, or carbon dioxide. Water spray may be used to cool fire exposed containers, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.	
<b>Special Fire Fighting Procedure:</b>	In the event of a fire, wear a NIOSH (US) or CEN (EU) approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all non-essential personnel from the danger area.	
<b>Unusual Fire and Explosion Hazards:</b>	Vapors are heavier than air and may travel to an ignition source and flash back.	
<b>Hazardous Combustion Products</b>	Carbon monoxide, carbon dioxide, hydrogen chloride, phosgene and other irritating and harmful gases and fumes.	

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Restrict access to keep out unauthorized or unprotected personnel. Stay upwind of spilled material. Wear appropriate personal protective equipment during all clean-up activities. Avoid inhalation and direct contact.
<b>Environmental Precautions:</b>	Keep spilled material away from sewage/drainage systems and waterways. This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center (800) 424-8802 is required. See Section 15 for more information.

**Methods for Clean-Up:** All clean-up personnel must be properly trained. Confine the spill and remove incompatible materials and ignition sources. Ensure adequate ventilation. Secure the source of the leak if conditions are safe. Collect using an appropriate absorbent material such as clay or vermiculite. Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.

## 7. HANDLING AND STORAGE

**Handling:** Use with adequate ventilation. Wear proper personal protective equipment. Open containers carefully.

**Storage:** Store in closed, properly labeled containers. Protect containers from heat, physical damage, ignition sources and incompatible materials. Have emergency equipment for fires and spills readily available.

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

**Eye Protection:** Wear safety glasses with side shields, goggles or face shield.

**Skin Protection:** Minimize contact with product. Wear gloves, apron and/or suitable long-sleeved clothing. Consult protective equipment manufacturer for chemical resistance information.

**Respiratory Protection:** An industrial hygiene risk assessment is required to determine the appropriate respiratory protection. A NIOSH (US) or CEN (EU) approved full-face, air-purifying cartridge respirator may be appropriate under limited exposure conditions. Wear an approved supplied air respirator if there is a potential for an uncontrolled release, exposure levels are not known, or in other circumstances where air-purifying respirators may not provide adequate protection.

**Engineering Controls:** Ensure adequate ventilation. Emergency eyewash and safety shower facilities should be available in the immediate work area.

**Required Work/Hygiene Procedure:** Wash hands thoroughly after handling. Do not eat, drink or smoke in work area. If unusual exposures are expected, an industrial hygiene review of work practices, engineering controls and personal protective equipment is recommended.

### Exposure Guidelines:

ACGIH TLV-Ceiling: 100 mg/m<sup>3</sup> (aerosol)

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Physical Form:** Liquid  
**Color:** Clear  
**Odor:** Mild sweet odor  
**Molecular Weight:** 62  
**Boiling Point:** 379 °F (193 °C)  
**Melting Point:** 9 °F (-13 °C)  
**Solubility in Water:** Completely Soluble  
**Specific Gravity:** 1.1 (*water* = 1)

<b>Vapor Density:</b>	2.14 ( <i>air = 1</i> )
<b>Evaporation Rate:</b>	< 0.002 ( <i>butyl acetate =1</i> )
<b>Vapor Pressure:</b>	0.05 mmHg @ 68 °F (20 °C)
<b>% Volatile:</b>	Negligible
<b>pH:</b>	7 @ 77 °F (25 °C)
<b>Partition Coefficient log Pow:</b>	-1.36 ( <i>n-octanol – water</i> )

## 10. STABILITY & REACTIVITY

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Conditions to Avoid:</b>	Keep away from heat, sparks and open flames. Not compatible with strong oxidizers, strong acids, strong bases, aluminum and aldehydes.
<b>Hazardous Decomposition:</b>	No data available.
<b>Hazardous Polymerization:</b>	Not expected to occur.

## 11. TOXICOLOGY INFORMATION

<b>Primary Route(s) of Exposure:</b>	Eye, skin contact, inhalation
<b>Potential Health Effects:</b>	
Eye Contact:	Causes eye irritation.
Skin Contact:	Contact may cause skin irritation and/or dermatitis. May be harmful if absorbed through the skin.
Inhalation:	May be harmful if inhaled. Inhalation may cause respiratory tract irritation, dizziness, headache, nausea, drowsiness, difficulty breathing and other adverse effects.
Ingestion:	Harmful if swallowed. Ingestion may cause abdominal pain, dizziness, headache, nausea, agitation, weakness, difficulty breathing, vomiting, convulsions and other adverse effects.
<b>Target Organ Effects:</b>	This material may cause adverse effects to the kidneys, liver and brain.
<b>Reproductive Effects:</b>	This material has been shown to cause adverse reproductive and developmental effects in experimental animals.
<b>Carcinogenicity:</b>	No data available.
<b>Mutagenicity:</b>	No data available.
<b>Medical Conditions Aggravated by Overexposure:</b>	Asthma and other respiratory conditions, skin disorders, gastrointestinal disorders, liver & kidney disorders.
<b>Toxicological Data:</b>	
Eye Irritation (Rabbit):	Mild Irritant
Oral LD50 (Rat):	5,840 mg/kg
Dermal LD50 (Rabbit):	9,530 mg/kg

**12. ECOLOGICAL INFORMATION****Ecotoxicological Data:****Ethylene Glycol**

96 hr LC50 (Rainbow Trout):	18,500 mg/L
96 hr NOEC (Minnow):	39, 140 mg/L
24 hr EC50 (Daphnia Magna):	74,000 mg/L
Biodegradability:	Readily biodegradable.
Bioaccumulation:	Does not bioaccumulate.
German Water Hazard Class:	Class I: Slightly hazardous to water.

**13. DISPOSAL CONSIDERATIONS**

**Disposal Method:** This product must be disposed of in accordance with Federal, state and local environmental regulations.

It is the responsibility of the product user to determine at the time of disposal whether a material containing, or derived from, this product should be classified as hazardous waste.

**14. TRANSPORTATION INFORMATION**

<b>Proper Shipping Name:</b>	Environmentally Hazardous Substance, Liquid, n.o.s. (ethylene glycol)
<b>Hazard Label:</b>	Class 9
<b>Hazard Class:</b>	9
<b>UN/NA Number:</b>	UN 3082
<b>Packing Group:</b>	III
<b>EPA Reportable Quantity (RQ):</b>	5000 lbs.
<b>Marine Pollutant:</b>	No
<b>Emergency Response Guide:</b>	171

**15. REGULATORY INFORMATION****U.N. GHS Classification & Labeling Information:**

Classification:	Acute Toxicity 4 Eye irritant 2B Specific Target Organ Toxicity (STOT) – Single Exposure 3 Repeated Exposure 2
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Signal Word: **DANGERS**

H Statements: H302: Harmful if swallowed.  
H320: Causes eye irritation. H333:  
May be harmful if inhaled. H335: May  
cause respiratory irritation.  
H373: May cause damage to organs by prolonged or repeated exposure if  
swallowed.

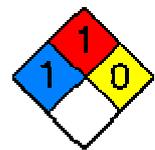


P Statements:

P301+315: If SWALLOWED: Get immediate medical attention.  
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+313: If eye irritation persists: Get medical attention.  
P280: Wear gloves/eye protection/face protection.  
P264: Wash thoroughly after handling.  
P273: Avoid release into the environment.

**NFPA 704 Information:**

Health Rating:	1
Flammability Rating:	1
Reactivity Rating:	0
Other Hazards:	Not applicable



**U.S. Federal Regulatory Information:**

EPA Clean Air Act:	Listed
EPA Clean Water Act:	Not Listed
TSCA:	Listed
RCRA ID Number:	Not Listed
CERCLA RQ:	5000 lbs.
SARA Title III § 302:	None
SARA Title III § 311/312:	Acute Health Hazard, Chronic Health Hazard
SARA Title III § 313:	Listed

**16. OTHER INFORMATION**

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