Nan Ya Plastics Corporation

Safety Data Sheet

1. PRODUCT IDENTIFICATION

Product Name:	**Diethylene Glycol**
Synonyms:	(2-hydroxyethoxy)-ethan-2-ol; dihydroxy diethyl ether; bis(hydroxyethyl) ether; DEG; 2,2-oxydiethanol
Manufacturer:	Nan Ya Plastics Corporation Petrochemicals 3rd Division EG Plant Formosa Industrial Park No.2, Mai Liao Country,Yun Lin County,Taiwan R.O.C
Telephone:	(886-5) 681-8255
Fax:	(886-5) 681-1011
Emergency Contact:	(886-5) 681-8258
NPC Product Code:	EG002
Product Use:	Various industrial uses.
Physical Description:	Clear liquid
Formula:	$C_4H_{10}O_3$

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.
- Toxic to aquatic life.
- Not fit for human and animal consumption.

3. PRODUCT INGREDIENTS

Components	Percent (%)
Diethylene Glycol	99-100
CAS Number: 111-46-6	
GHS Classification: Acute Tox. 4, Eye Irrit. 2B, Skin Irrit. 3, STOT-SE3, STOT-RE2, Aquatic Acute 2; H302, H316, H320, H333, H335, H373, H401	

4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with water for at least 15 minutes. Hold eyelids open to ensure adequate flushing. Get immediate medical attention.
Skin Contact:	Remove contaminated clothing and shoes. Wash affected skin area with soap and water. Get immediate medical attention.
Inhalation:	Remove to fresh air. Get immediate medical attention.

Ingestion: If ingested, dilute swallowed material by drinking water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Other Instructions: Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas. Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Flash Point: 253 ℉ (123 ℃) (Closed Cup)

Autoignition Temperature: 444 ℉ (229 ℃)

Flammable Limits, in Air:

Lower Explosive Limit (LEL): 1.7%

Upper Explosive Limit (UEL): 12.3%

Extinguishing Media: Water spray, 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.

Special Fire Fighting Procedure: 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.

Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel to an ignition source and flash back.

Hazardous Combustion Products Carbon monoxide, carbon dioxide, hydrogen chloride, phosgene and other irritating and harmful gases and fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: 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.

Environmental Precautions: Keep spilled material away from sewage/drainage systems and waterways. 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:

OSHA PEL:	Not Established.
ACGIH TLV:	Not Established.
AIHA WEEL-TWA:	10 mg/m^3
UK WEL-TWA:	101 mg/m^3 (23 ppm)

9. PHYSICAL / CHEMICAL PROPERTIES

Physical Form: Liquid
Color: Clear

Odor:	Mild sweet odor.
Molecular Weight:	106
Boiling Point:	473 ℉ (245 ℃)
Melting Point:	21 ℉ (-6 ℃)
Solubility in Water:	No data available.
Specific Gravity:	1.1 *(water = 1)*
Vapor Density:	3.66 (*air = 1*)
Evaporation Rate:	0.001 *(butyl acetate = 1)*
Vapor Pressure:	< 0.01 mmHg @ 68 ℉
pH:	5.0 – 8.0 at 500 g/l at 20 ℃ (68 ℉)
Partition Coefficient log Pow:	-1.98 *(n-octanol – water)*

10. STABILITY & REACTIVITY

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Keep away from heat, sparks and open flames. Not compatible with strong oxidizers, strong acids, and strong bases.

Hazardous Decomposition: No data available.

Hazardous Polymerization: Not expected to occur.

11. TOXICOLOGY INFORMATION

Primary Route(s) of Exposure: Eye, skin contact, inhalation

Potential Health Effects:

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.

Target Organ Effects: This material may cause adverse effects to the kidneys.

Reproductive Effects: No data available.

Carcinogenicity: No data available.

Mutagenicity: No data available.

Medical Conditions Aggravated by Overexposure: Asthma and other respiratory conditions, skin disorders, gastrointestinal disorders, kidney disorders.

Toxicological Data:

Eye Irritation (Rabbit): Mild Irritant

Skin Irritation (Rabbit):	Mild Irritant
Oral LD50 (Rat):	12,565 mg/kg
Dermal LD50 (Rabbit):	11,890 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:

Diethylene Glycol

96 hr LC50 (Minnow):	1,370 mg/L
48 hr EC50 (Daphnia Magna):	55 mg/L
96 hr EC50 (Algae):	2.2 mg/L
Biodegradability:	No data available.
Bioaccumulation:	No data available.
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

This product is not regulated as a hazardous material/dangerous good for transportation.

15. REGULATORY INFORMATION

U.N. GHS Classification & Labeling Information:

Classification:
- Acute Toxicity 4
- Eye irritant 2B
- Skin Irritant 3
- Specific Target Organ Toxicity (STOT) – Single Exposure 3
- Repeated Exposure 2
- Aquatic Acute 2

Signal Word: **DANGERS**

H Statements:
- H302: Harmful if swallowed.
- H316: Causes mild skin irritation.
- 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.
H401: Toxic to aquatic life.

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

U.S. Federal Regulatory Information:

TSCA:	Listed
RCRA ID Number:	Not Listed
CERCLA RQ:	None
SARA Title III § 302:	None
SARA Title III § 311/312:	Acute Health Hazard, Chronic Health Hazard
SARA Title III § 313:	Not Listed

16. OTHER INFORMATION

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