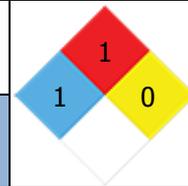




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1 Identification of the substance or mixture and of the supplier

1.1. Product name or GHS product identifier

1.1.1. Common name :	Diethylene glycol
1.1.2. Chemical formula :	$C_4H_{10}O_3$ or $(CH_2CH_2OH)_2O$
1.1.3. Commercial name :	Diethylene glycol; DEG
1.1.4. CAS number :	111-46-6
1.1.5. Molecular weight :	106.12
1.2. Other product identifier :	2,2'-Oxydiethanol, Bis(2-hydroxyethyl) ether, Diglycol
1.2.1. UN Number :	-
1.2.2. REACH Registration Number :	01-2119457857-21-0149
1.2.3. EC number :	203-872-2

1.3. Recommendation for use and other prohibitions for use

- Substances that may become unstable at elevated temperatures and pressures.
- Irritation or minor injury would result from exposure to this substance.
- Storage in a cool, dry, well-ventilated area away from heat.
- Use non-sparking tools to open containers.

1.4. Manufacturer or Supplier Details

1.4.1. Manufacturer or Supplier	1.4.2. Address
PTT Global Chemical Public Company Limited	9-9/1 Soi G 12 WHA Eastern Industrial Estate (MapTa Phut), Pakornsongkrohraj Road, Map Ta Phut, Muang Rayong, Rayong 21150
1.4.3. Telephone number :	(+66)-38-994-000
1.5. Emergency telephone number :	+66(0)38994000 Ext. 7095

1.6. Other information

1.6.1. Hazardous substance

Yes 1 No

1.6.2. Max quantity storage 8000 m3

1.6.3. Uses

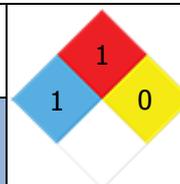
Diethylene glycol (DEG) is most commonly used as the chemical Intermediate for the production of unsaturated polyester resins, polyester polyol, Thermoplastic polyurethanes, emulsifiers and Morpholine. Moreover, DEG is used in applications which require hygroscopicity, lubricants, and low volatility such as plasticizer, solvent in printing ink, textile lubricant, humectants and dehydrating agents.

1.6.4. Other



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2

Hazards identification

2.1. GHS classification of the substance/mixture and any national or regional information

2.1.1. Hazard classification according to the GHS

Acute toxicity - Category 4 - Oral - H302

2.2. GHS label elements, including precautionary statements

2.2.1. Chemical name :

Diethylene glycol

2.2.2. Product name or GHS product identifier :

Diethylene glycol (Eng)

2.2.3. Symbol and Hazard pictograms



2.2.4. Signal words : Warning

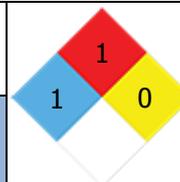
2.2.5. Hazard statement

H302 - Harmful if swallowed



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2

Hazards identification

2.2.6. Precautionary information

Prevention

- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.

Response

- P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P330 Rinse mouth.

Disposal

- P501 Dispose of contents/container to industrial combustion plant.

2.2.7. Supplemental information

None

2.3. Other hazards which do not result in classification or are not covered by the GHS

2.3.1. Potential Chronic Health Effects

2.3.1.1. Carcinogen effects

- | | | | |
|--|----------------------------------|--------------------------------------|--------------------------------------|
| <input type="radio"/> Maybe-Carcinogen | <input type="radio"/> Carcinogen | <input type="radio"/> Non-Carcinogen | <input checked="" type="radio"/> N/A |
|--|----------------------------------|--------------------------------------|--------------------------------------|

N/A

2.3.1.2. Mutagenic effects

- | | | | | |
|---------------------------------|-------------------------------------|--------------------------------------|--|--|
| <input type="radio"/> Mutagenic | <input type="radio"/> Non-Mutagenic | <input checked="" type="radio"/> N/A | | |
|---------------------------------|-------------------------------------|--------------------------------------|--|--|

N/A

2.3.1.3. Other information

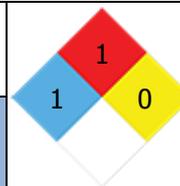
Special danger of slipping by leaking/spilling product.

2.4. Environmental Hazards



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Composition / information on ingredients

3.1. Homogeneous substance

3.1.1. Chemical identity :	Diethylene Glycol
3.1.2. Common name :	Diethylene glycol
3.1.3. Synonym :	DEG
3.1.4. CAS number and other unique identifiers :	111-46-6

3.1.5. Impurities and stabilizing additives

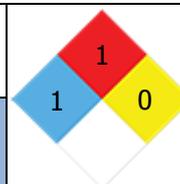
Composition:

Composition name:	Diethylene glycol
General name:	Diethylene glycol
Synonym:	DEG
UN number:	-
CAS number :	111-46-6
EC number:	203-872-2
Impurities and stabilizing additive % weight:	-
OSHA-PEL:	100
ACGIH-TLV:	-
Thai standard:	-
LD/LC:	Oral,rat
Carcinogen:	; n/a



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4

First-aid measures

4.1. First-aid

4.1.1. Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.1.2. Skin contact

Wash off with soap and plenty of water. Consult a physician.

4.1.3. Eyes contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.1.4. Ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms/effects

4.2.1. Acute Effects

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

4.2.2. Delayed effects

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

4.3. Indication of immediate medical attention

No further relevant information available

4.4. Special treatment needed, if necessary.

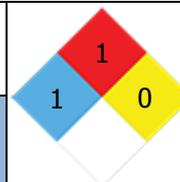
No further relevant information available

4.5. Other



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5

Firefighting measures

- 5.1. Unsuitable extinguishing media : N/A
- 5.2. Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.3. Specific hazards arising from the chemical.
Carbon oxides
- 5.4. Special protective equipment and precautions for fire-fighters.
N/A
- 5.5. Precautions for fire fighters.
Wear self-contained breathing apparatus.Wear full protective suit.
- 5.6. Other.
Cool containers/tanks with water spray.

6

Accidental release measures

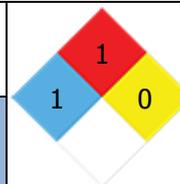
- 6.1. Personal precautions
Use personal protective equipment. Avoid breathing vapour, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas
- 6.2. Protective equipment
- 

- 6.3. Emergency procedures
- | | |
|--------------------|--|
| 6.3.1. Large Spill | 6.3.2. Small Spill |
| - | Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). |
- 6.4. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
- 6.5. Methods and materials for containment and cleaning up.
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.



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7

Handling and storage

7.1. Precautions for safe handling.

Ensure good ventilation/exhaustion at the workplace.

7.2. Incompatibility.

7.2.1. Safe storage condition.

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.2.2. Incompatible chemicals condition.

hygroscopic Store under nitrogen. Heat sensitive.
Storage class (TRGS 510): Combustible liquids

7.3. Storage area :

Process Area and Truck Loading

7.4. Incompatible chemicals condition.

Keep ignition sources away- Do not smoke

7.5. Hazard Class by UN :

7.6. Classification :

8

Exposure controls/personal protection

8.1. Occupational exposure limit values or biological limit values

Name	TLV-TWA	TLV-STEL	TLV-C	PEL	IDLH	Thai	biological limit values
Diethylene Glycol	10 mg/m3						

8.2. Appropriate engineering controls

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute

8.3. Personal protective equipment



8.4. Personal hygiene

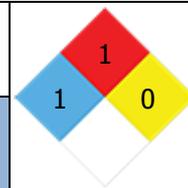
The usual precautionary measures should be adhered to in handling the chemicals.Keep away from foodstuffs, beverages and food.Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work.

8.5. Other protection



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Physical and chemical properties

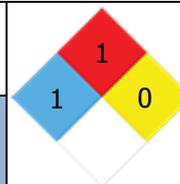
9.1. Appearance :	Viscous liquid and Colourless		
9.2. Odour :	slight		
9.3. Odour threshold limit :	no data available		
9.4. pH-value :	5.0-8 at 500g/L at 20C		
9.5. Melting point &Freezing point :	Melting point	-10 °C	
	Freezing point	-10 °C	
9.6. Initial boiling point/Boiling range	Boiling/condensation point	245 °C	
	Evaporation rate	< 0.01 - Butyl acetate	
9.7. Flash point :	143 °C (Close cup)		
9.8. Evaporation rate :	< 0.01 - Butyl acetate		
9.9. Flammability (solid, gas) :	Burning time	sec	
	Burning Rate	mm/sec	
9.10. Upper/lower flammability or explosive limits :	2 % LEL - 12.3 %UEL		
9.11. Vapour pressure :	0.008 hPa at 25 °C Literature		
9.12. Vapour density :	3.66 - (Air = 1.0)		
9.13. Specific gravity :	1.1183 at 20/20 °C		
9.14. Solubility(ies) :	Fully miscible		
9.15. Partition coefficient : n-octanol/water :	-1.999		
9.16. Auto-ignition temperature :	372 C °C		
9.17. Decomposition temperature :	240 °C		
9.18. Viscosity :	Dynamic viscosity 35.7 cP, Kinematic viscosity 31.9 cSt at 20°C		
9.19. Heat of Combustion :			
9.20. The ignition distance test :			
9.21. The enclosed space ignition test	s/m ³		
9.22. The foam test :	Vapor density	-	cm
	Flames burning up		sec

Detail	Type of Substance		Unit
	Other substance	Powders or dusts	
Use water spray to blanket fire, cool fire exposed containers, to stop leak, and burn			minute
Burning time			sec
Burning rate			mm/s



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Stability and reactivity

10.1. Reactivity

No dangerous reactions known

10.2. Chemical Stability :

- Stability
 Instability and emit gas
 N/A

10.3. Possibility of Hazardous reaction :

10.4. Conditions to avoid :

Heating in air. Exposure to moisture.

10.5. Incompatible materials :

Strong oxidizing agents, Strong acids, Zinc

10.6. Hazardous decomposition products :

Other decomposition products - no data available
In the event of fire: see section 5

10.7. Corrosively :

-

11

Toxicological information

11.1. Route of Exposure Inhalation Ingestion Skin contact Eye contact

11.2. Symptoms related to the physical, chemical and toxicological characteristics

11.2.1. Symptom related with physical characteristic

- Prolonged contact is essentially nonirritating to skin.
- Slight irritation after inhalation
- May cause slight temporary eye irritation

11.2.2. Symptom related with chemical characteristic

- May cause liver and kidney damage. May cause central nervous system depression if after ingestion of high quantities

11.2.3. Symptom related with toxicology

May cause damage to organs through prolonged or repeated exposure.

11. The impact of acute and delayed (delayed and immediate effects) including chronic (chronic effects) exposure (Contact delayed, immediate and chronic effects)

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Skin rash/inflammation. Decreased renal function. Affection of the renal tissue

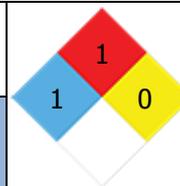
11.4. Numerical measures of toxicity

- 11.4.1. Acute oral toxicity : LD50 Oral - Rat - 12,565 mg/kg, Human - 1,000 mg/kg
- 11.4.2. Acute dermal toxicity : LD50 Dermal - Rabbit - 11,890 mg/kg
- 11.4.3. Acute inhalation toxicity: LC50, Rat, 4 Hour, Aerosol, > 4.6 mg/l



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Ecological information

12.1. Eco toxicity (aquatic and terrestrial, where available)

12.1.1. Toxicity to fish :	LC50 - Pimephales promelas (fathead minnow) - 75,200 mg/l - 96 h
----------------------------	--

12.1.2. Crustaceans / Toxicity to crustaceans :	LC50 - Carassius auratus (goldfish) - 5,000 mg/l - 24 h
---	---

12.1.3. Algae / Toxicity to algae :	Not harmful to algae
-------------------------------------	----------------------

12.2. Degradability and persistence

Biodegradability: anaerobic - Exposure time 28 d

Result: 90 - 100 % - Readily biodegradable. (OECD Test Guideline 301B)

12.3. Bio-accumulative potential :	Leuciscus idus melanotus - 3 d - 0.05 mg/l
------------------------------------	--

12.4. Mobility in soil :	No further relevant information available
--------------------------	---

12.5. Other adverse effects :

No further relevant information available

13

Disposal considerations

13.1. Waste information :

-

13.2. Remain materials :

-

13.3. Waste disposal :

Dispose of as unused product.

13.4. Package contaminated disposal :

Dispose of contaminated material as waste according to item 13.Clean up affected area.

14

Transport information

14.1. UN Number :	Not applicable (Not dangerous goods)	Pictogram
-------------------	--------------------------------------	------------------

14.2. UN Proper Shipping Name :	Not applicable (Not dangerous goods)
---------------------------------	--------------------------------------

14.3. Transport Class/Division :	Not applicable
----------------------------------	----------------

14.4. Package group (if any) :	Not applicable
--------------------------------	----------------

14.5. Marine pollution :	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
--------------------------	---

14.6. Special precautionary for user :	no data available
--	-------------------

14.7. Transport in bulk :	
---------------------------	--

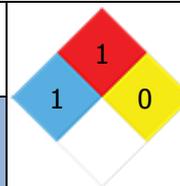
14.8. Classification code :	
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14.9. Other :	
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Regulatory information

15.1. Safety, health and environmental regulations

Safety, health and environmental regulations/ legislation specific for the substance or mixture Labelling according to Regulation (EC) No 1272/2008: The substance is classified and labelled according to the CLP regulation.

16

Regulatory information

16.1. Date of latest issue

01/07/2022

16.2. Description of point of Safety Data Sheet changing

Company name

16.3. Abbreviation explanation

EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service The CLP Regulation[1] (for "Classification, Labelling and Packaging"[2]) is a European Union regulation

NFPA Hazard Code	HMIS Hazard		Rating System
Hazardous decomposition products Health hazard Specific hazards Possibility of hazardous reactions arising from the chemical	1	Health	0 = No hazard 1 = Slight hazard 2 = Moderate hazard 3 = Serious hazard 4 = Severe hazard
	1	Flammability	
	0	Reactivity	

16.4. Information Safety Data Sheet files

Primary Reference :

Secondary Reference : [Diethylene-glycol Sigma \(2\)_139.pdf](#)

16.5. Local Legislation Related

16.6. Reference

[Diethylene-glycol Sigma \(2\)_139.pdf](#)

16.7. Other details