



Material Safety Data Sheet

Product name

Diethylenetriamine Pentamethylene Phosphonic Acid Sodium Salt

1. Identification of the substance/mixture and of the company/undertaking

- 1.1. Product name Diethylenetriamine Pentamethylene Phosphonic Acid Sodium Salt
- 1.2. CAS-No. 22042-96-2
- 1.3. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Used as scale inhibitor, powerful sequestrant and excellent barium sulphate scale inhibitor.
- 1.4. Details of the supplier of the safety data sheet
Company Glory Global CO.,LTD
Address C-208, 10, Nowon-ro 15-gil, Nowon-gu, Seoul, Korea
Emergency Phone +82 2 6223 0862

2. Hazards identification

- 2.1. Classification of the substance or mixture GHS Skin corrosion / Irritation: Category 3
Classification in accordance with 29 CFR 1910 (OSHA HCS) Serious eye damage / eye irritation: Category 2B
Acute hazards to the aquatic environment: Category 2

2.2. GHS Label elements, including precautionary statements

- Signal word Warning
- H316 Causes mild skin irritation.
- H320 Causes eye irritation.
- H401 Toxic to aquatic life.

2.3. Precautionary statement(s)

- P280 Wear protective gloves/clothing, eye protection and face protection.
- P264 Wash hands and contaminated body thoroughly after handling.
- P273 Avoid release to the environment if this is not the intended use.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P501 Dispose of contents / container in accordance with local / regional / national / international regulations.

3. Composition/information on ingredients

3.1. Substances

| Ingredients (Chemical Name) | CAS NO. | Concentration Range |
|---|------------|---------------------|
| Diethylenetriamine Pentamethylene Phosphonic Acid Sodium Salt | 22042-96-2 | 43-49% |
| Sodium Chloride | 7647-14-5 | ≤ 6.0% |
| Formaldehyde | 50-00-0 | < 50 ppm |
| Water | 7732-18-5 | The rest |
| Total | | 100% |

Additional Information

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

4.1. Description of first aid measures

- General advice – Immediate medical attention is not required. Movement of the exposed individual from the area to fresh air is recommended; Removal and handling of clothing & shoes from the individual is recommended; PPE(Personal Protective Equipment) for first-aid is recommended;
- If inhaled – Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Remove material from eyes, skin and clothing.
- In case of skin contact – Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention. Wash clothing before reuse.

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| In case of eye contact | – Flush immediately with plenty of water. If easy to do, remove any contact lenses. Obtain medical attention if irritating persists. Remove material from skin and clothing. |
| If swallowed | – Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention. Contact a Poison Control Center for advice. Never give anything by mouth to an unconscious person. |
| 4.2. Most important symptoms and effects, both acute and delayed | – No data available |
| 4.3. Indication of any immediate medical attention and special treatment needed | – No data available |
| 5. Firefighting measures | |
| 5.1. Extinguishing media | |
| Suitable extinguishing media | – Water spray, foam, dry chemical, or carbon dioxide |
| Unsuitable extinguishing media | – None known |
| 5.2. Special hazards arising from the substance or mixture | – Carbon monoxide (CO), carbon dioxide, nitrogen oxides (NOx), phosphorus oxides (PxOy) Decomposes in a fire giving off irritant fumes |
| 5.3. Special protective equipment and precautions for fire fighters | – Firefighters, and others exposed, wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use |
| 5.4. Further information | – No data available |
| 6. Accidental release measures | |
| 6.1. Personal precautions, protective equipment and emergency procedures | – Avoid contact with the substance. Use personal protection recommended in section 8. |
| 6.2. Environmental precautions | – Keep away from drains and water courses. |
| 6.3. Methods and materials for containment and cleaning up | – Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. – Absorb remaining material or small spills with an inert material and then place in a chemical waste container. – Neutralize washings with soda ash or lime. Flush spill area with water. |
| 6.4. Reference to other sections | – For disposal see section 13. |
| 7. Handling and storage | |
| 7.1. Precautions for safe handling | – Avoid contact with eyes, skin and clothing. – Avoid breathing vapor or mist. – Use with adequate ventilation. – Keep container closed. – Wash thoroughly after handling |
| 7.2. Conditions for safe storage, including any incompatibilities | – Store container tightly closed in a dry and cool place. – Storage temperature > -10 °C; Shelf life: > 24 months. – Qualified materials: Glass lining, PVC, polypropylene, glass reinforced plastic or polyethylene – Unsuitable materials: mild steel, aluminum or any other metals |
| 7.3. Further details | – Containers will enclose product residues and vapors after being emptied. Dispose of in accordance with the regulations. |
| 8. Exposure controls/personal protection | |
| 8.1. Exposure controls | |
| Appropriate engineering controls | – Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Use mechanical handling to reduce human contact with the materials. |
| Personal protective equipment | |
| a) Eye/face protection | – Wear chemical goggles. Have eye flushing equipment available. |
| b) Skin protection | – Although this product does not present a significant skin concern, minimize skin contamination by following good industrial practice. Wash contaminated skin thoroughly after handling. |
| c) Hand Protection | – Wearing protective gloves is recommended. Suitable materials : Nitrile (rubber) PVC |
| d) Respiratory protection | – This material is not likely to present an airborne exposure concern under normal conditions of use. Avoid breathing vapour or mist. Use approved respiratory protection equipment (full facepiece recommended) when airborne exposure is excessive. If used, full facepiece replaces the need for face shield and/or chemical goggles. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer. |
| 9. Physical and chemical properties | |
| 9.1. Information on basic physical and chemical properties | |
| Appearance | clear amber liquid |

| | |
|--|-------------------|
| Odour | Odourless |
| Odour Threshold | No data available |
| pH | 2.0–3.0 |
| Melting / freezing point | –20 °C |
| Initial Boiling Point and Boiling Range | No data available |
| Flash point | No data available |
| Evaporation rate | No data available |
| Flammability (solid, gas) | Not flammable |
| Upper/lower flammability or explosive limits | Not explosive |
| Vapour pressure | No data available |
| Vapour density | No data available |
| Relative Density | 1.39 – 1.43 |
| Water solubility | Soluble |
| Partition coefficient n-octanol/water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |

10. Stability and reactivity

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|--|---|
| 10.1. Reactivity | – May be corrosive to metals. |
| 10.2. Chemical stability | – Stable under normal temperatures and pressures. |
| 10.3. Possibility of hazardous reactions | – Hazardous polymerization does not occur. – May react with steel and aluminum . |
| 10.4. Conditions to avoid | – Do not expose to extreme temperatures. |
| 10.5. Incompatible materials | – Strong oxidizing agents. – Aluminum and mild steel. |
| 10.6. Hazardous decomposition products | – Carbon monoxide (CO), carbon dioxide (CO ₂), nitrogen oxides (NO _x), phosphorus oxides (P _x O _y), phosphines |

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Oral Toxicity (Rats)

LD₅₀, rat, >5,000 mg/Kg
Result: Practically nontoxic.

Dermal Toxicity (Rats)

LD₅₀, rat, >5,000 mg/Kg
Result: Practically nontoxic.

Inhalation Toxicity, Vapor (Rats)

LD₅₀, rat, >5,000 mg/Kg
Result: Practically nontoxic.

Skin corrosion/irritation

Causes mild skin irritation.

Serious eye damage/eye irritation

Causes mild skin irritation.

Respiratory or skin sensitisation

Not Classified

Germ cell mutagenicity

Rat, gavage, Minor variations and/or reduced fetal weight, but no birth defects were observed in rat pups following treatment during pregnancy. Effects only observed at very high dose levels. The active ingredient generally produced no genetic changes in standard tests using animal, bacterial or yeast cells.

11.2. Carcinogenicity

Not available

11.3. Reproductive toxicity

Rat, diet, 1 generation Signs of generalized toxicity (reduced body weight and/or reduced weight gain) were observed in parental animals and offspring with no effect on fertility or reproduction.

Data obtained on similar product.

11.4. Specific target organ toxicity – single exposure

No data available

11.5. Specific target organ toxicity – repeated exposure

No data available

11.6. Aspiration hazard

No data available

12. Ecological information

12.1. Toxicity

Fish

96h LC₅₀ Oncorhynchus mykiss > 180 mg/L

Daphnia and other aquatic invertebrates

48h EC₅₀ Daphnia magna >242mg/L

Algae/aquatic plants

96h EC₅₀ Selenastrum capricornutum 2mg/l

Algal growth inhibition is due to ability of this product to complex materials not to toxicity perse.

12.2. Persistence and degradability

Biodegradability

Modified SCAS Primary degradation 2.2%

River Die-Away theoretical CO₂ evolution :9.55% 60 d

12.3. Bioaccumulative potential
 12.4. Mobility in soil
 12.5. Results of PBT and vPvB assessment
 12.6 Other adverse effects

There is no evidence to suggest bioaccumulation will occur.
 Accidental spillage may lead to penetration in the soil and groundwater. However, there is no evidence that this would cause adverse ecological effects.

– PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Do not empty into drains. Not readily biodegradable.

13. Disposal considerations

13.1 US EPA RCRA Status
 13.2. Disposal Considerations
 13.3. Miscellaneous advice

– This material when discarded is a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. See disposal considerations below for U.S. EPA disposal requirements. Consult regulatory officials for performance standards.

– Deactivation
 Consult 40 CFR 268.48 for concentration based standards.

– Local, State, Provincial and national disposal regulations may be more or less stringent. Consult your attorney or appropriate regulatory officials for information on such disposal. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

14. Transport information

14.1. Transport information

– UN number: 3265
 – Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. DIETHYLENTRIAMINE PENTAMETHYLENE PHOSPHONIC ACID SODIUM SALT
 – Transport Hazard Class: 8
 – Packing Group: III
 – Environmental hazards: Not regulated
 – Transport label:



15. Regulatory information

15.1. National Regulations
 15.2. Canadian WHMIS Classification
 15.3. SARA Hazard Notification

U.S. TSCA, Canadian DSL, EU EINECS, Japanese ENCS, Australian AICS, Korean, Chinese, Phillipine PICCS

D2(B) – Materials Causing Other Toxic Effects
 E – Corrosion Material

Hazard Categories Under Title III Immediate

16. Other information

16.1. Further information

– Always work safely around open hatches on bulk tanks. The low density makes flotation difficult for immersed person.

