

SAFETY DATA SHEET

HYDROXY ETHYLIDENE DIPHOSPHONIC ACID (HEDP) 60%

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:	2809-21-4
EC number:	220-552-8
1.2 SYNONYMS:	<ul style="list-style-type: none">• 1-Hydroxyethane-1,1-diphosphonic acid• Hydroxyethylidene diphosphonic acid• HEDP• 1-Hydroxy-1,1-ethanediphosphonic acid• HEDP Acid

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Corrosive to metals (Category 1) Skin corrosion/irritation (Category 1C) Serious eye damage/eye irritation (Category 1) Specific target organ toxicity - Single exposure (Category 2)
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	H290: May be corrosive to metals. H314: Causes severe skin burns and eye damage. H371: May cause damage to organs
Precautionary Statements:	P260: Do not breathe mist, vapours or spray.

	<p>P280: Wear protective gloves, protective clothing, face protection.</p> <p>P301+P330+P331+P310: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.</p> <p>P303+P361+P353+P310+P363: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.</p> <p>P304+P340+P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.</p> <p>P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.</p> <p>P405: Store locked up.</p> <p>P501: Dispose of contents/ container to an approved waste disposal plant.</p>
2.3 Other hazards:	
Inhalation:	can cause respiratory irritation, coughing, and difficulty breathing, and prolonged exposure may lead to more severe respiratory issues.
Ingestion:	may cause gastrointestinal irritation, nausea, vomiting, and abdominal pain.
Skin Contact:	may cause irritation, redness, and discomfort, and prolonged

	exposure could lead to more severe skin
	damage. It's recommended to wash the affected area thoroughly with soap and water and seek medical attention if irritation persists.
Eye contact:	can cause severe irritation, redness, pain, and potential damage to the eye tissue. Immediate rinsing with water for at least 15 minutes is recommended, and medical attention should be sought if irritation persists or if there is any damage.
Chronic Exposure:	may lead to long-term health effects such as persistent skin or eye irritation, respiratory issues, and potential damage to internal organs with prolonged or repeated exposure, especially if safety precautions are not followed.
Aggravation of pre-existing conditions:	may aggravate pre-existing conditions such as respiratory disorders (e.g., asthma or bronchitis), skin conditions (e.g., eczema), or eye disorders, potentially leading to worsening symptoms or more severe reactions.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 2809-21-4 HYDROXY ETHYLIDENE DIPHOSPHONIC ACID (60%) 7664-38-2 PHOSPHORIC ACID (2%) 16887-00-6 CHLORIDE (1%) 7732-18-5 WATER(37%)
Identification number(s):	EC number: 220-552-8 (HEDP) 231-633-2 PHOSPHORIC ACID

	690-375-2 CHLORIDE 231-791-2 WATER
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SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing immediately. Wash with plenty of water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. If conscious, make victim drink two glasses at most immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	The most important symptoms and effects of HEDP exposure include acute irritation of the skin, eyes, and respiratory system, with delayed effects potentially involving persistent respiratory issues or skin damage with prolonged exposure.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
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5.2 Special hazards arising from the substance or mixture:	Phosphorus oxides.
5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/remove them into safety.
5.4 further information:	no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection.
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	Minimize dust generation and accumulation. Avoid ingestion and inhalation.
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area. Do not handle in flammable atmospheres.
Requirements to be met by storerooms and receptacles:	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.
7.3 Specific end uses:	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.

Protection of hands:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance: Form:	Liquid
Colour:	Colourless to pale yellow
Odour:	Faint acidic
pH-value:	2
Melting point/Melting range:	300°C
Boiling point/Boiling range:	Not determined
Flammability (solid, gaseous):	Non-Flammable
Ignition temperature:	No data available
Decomposition temperature:	200°C
Self-igniting:	None
Flash point:	Not applicable
Danger of explosion:	None
Explosion limits: Lower:	Not applicable
Explosion limits: Upper:	Not applicable
Vapour pressure:	Not determined
Density at 20 °C:	1.32 g/cm ³
Relative density:	1.32
Vapour density:	Not determined
Evaporation rate:	Not determined
Solubility in / Miscibility with-water at 20 °C:	Readily Soluble
Partition coefficient:(n-octanol/water)	No data available
Viscosity:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity	Can react with strong oxidizers to form phosphorus oxides.
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	Can react with strong oxidizing agents, acids and bases to form phosphorus oxides.
10.4 Conditions to avoid	Heat, moisture, strong acids, bases
10.5 Incompatible materials	Strong oxidizing agents, strong acids and bases metals.
10.6 Hazardous decomposition products	Carbon monoxides, carbon dioxides, phosphorus oxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	LD50 (Oral, Rat): 1800 mg/kg LD50 (Dermal, Rabbit): no data available LC50 (Inhalation Rat): no data available
Skin corrosion/Irritation:	Causes serious skin corrosion.
Serious eye damage/irritation:	Causes serious eye damage
Respiratory damage/irritation:	No data available
Ingestion:	No data available
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	No data available
Specific target organ toxicity - single exposure:	No data available
Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	Low Biodegradable

SECTION 12: Ecological information

12.1 Toxicity	LC50(fish): no data available
Aquatic toxicity:	EC50(daphnia): no data available

	ErC50(algae): no data available
12.2 Persistence and degradability:	Low Biodegradable
12.3 Bioaccumulative potential:	low bioaccumulative
12.4 Mobility in soil:	High mobility
12.5 Other adverse effects:	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Water, diluted sodium bicarbonate, commercial detergents, acid- resistant cleaning agents.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	3265
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	HYDROXY ETHYLIDENE DIPHOSPHONIC ACID (HEDP)
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	8
14.4 Packing group · ADR, IMDG, IATA:	3
14.5 Environmental hazards:	Yes, harmful for aquatic life.
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is not classified in listed substance
Named dangerous substances:	This substance is not listed in the annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all

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