



EU SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 and Regulation (EC) No. 453/2010

Date of print: 8/4/2015

Revision date: 6/29/2015

Date of first version:
1/10/2011

1-Hydroxy Ethylidene-1,1-Diphosphonic Acid HEDP

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

1.1 Product identifier

Trade name: 1-Hydroxy Ethylidene-1,1-Diphosphonic Acid HEDP

1.2 Relevant identified uses of the substance or mixture and uses advised against

General use Water treatment chemicals

1.3 Details of the supplier of the safety data sheet

Company name: Shandong Taihe Chemicals Co., Ltd
Street/POB-No.: No. 10 Guangming Road, Shizhong District,
State/city/postal code: ZaoZhuang City, Shandong
Telephone: +86 0632 5113066
Telefax: +86 0632 5112055

1.4 Emergency telephone number

China, Telephone: 0086-632-5113066

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP):

Met. Corr. 1; H290 May be corrosive to metals.

Eye Irrit. 2; H319 Causes serious eye irritation.

Classification according to Directive 67/548/EEC or 1999/45/EC

Xi; R36 Irritating to eyes.

2.2 Label elements

Libeling (CLP)



Signal word

Warning

Hazard Statements

H290 May be corrosive to metals.
H319 Causes serious eye irritation.

Safety precautions

P234 Keep only in original container.
P264 Wash hands and face thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P390 Absorb spillage to prevent material damage.
P406 Store in corrosive resistant Glass, PVC, PP or PE container / in container with a resistant inner liner.



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Libeling (67/548/EEC or 1999/45/EC)



Xi

irritant

R phrase(s):	R 36	Irritating to eyes.
S phrase(s):	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S 37	Wear suitable gloves.
	S 60	This material and its container must be disposed of as hazardous waste.

Text for libeling Contains phosphonates > 30 %.

2.3 Other hazards

A corrosive effect cannot be ruled out because of the pH value.

SECTION 3: Composition/ information on ingredients

3.1 Mixtures

Chemical characterization (preparation)

1-Hydroxy Ethylidene-1,1-Diphosphonic Acid HEDP

Hazardous ingredients:

Ingredient	Chemical name	Content	classification
EINECS 220-552-8 CAS 2809-21-4	1-Hydroxy Ethylidene-1,1- Diphosphonic Acid HEDP)	58-62 %	EU: Xi; R36. CLP: Eye Irrit. 2; H319. Met. Corr. 1; H290.
EINECS 237-066-7 CAS 13598-36-2	Phosphonic acid	< 0.8 %	EU: C; R35. Xn; R22. CLP: Acute Tox. 4; H302. Eye Dam. 1; H318. Met. Corr. 1; H290. Skin Corr. 1A; H314.

SECTION 4: First aid measures

4.1 Description of first aid measures

After inhalation:	Move victim to fresh air. In case of respiratory difficulties seek medical attention.
In case of skin contact:	After contact with skin, wash immediately with plenty of water. Change contaminated clothing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses. Subsequently seek the immediate attention of an ophthalmologist.
After swallowing:	Rinse mouth and drink large quantities of water. Consult physician.

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 special measures are required.



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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water fog, alcohol resistant foam, extinguishing powder, carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Phosphorus oxides, carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained breathing apparatus.

Additional information:

Hazchem-Code: 2X

Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Provide adequate ventilation.

Do not breathe gas/fumes/vapour/spray.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.

6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.

6.4 Reference to other sections

Refer additionally to chapter 8 and 1

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes.

Do not breathe vapour. Provide adequate ventilation, and local exhaust a

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container dry, tightly closed and store at cool and aired place. Store carefully closed containers upright to prevent any leaks.

Further details:

Containers will enclose product residues and vapours after being emptied. Dispose of in accordance with the regulations.

Storage class:

8B = Non-combustible corrosive substances



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7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Additional information: Contains no substances with occupational exposure limit values.

DNEL Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID):
DNEL long-term, workers, oral: 13 mg/kg bw/d.
DNEL short-term, workers, oral: 13 mg/kg bw/d.
DNEL Long-term, consumers, oral: 6.5 mg/kg bw/d.
DNEL Short-term, consumers, oral: 6.5 mg/kg bw/d.

PNEC Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID):
PNEC water (freshwater): 0,136 mg/L.
PNEC water (marine water): 0,0136 mg/L.
PNEC sediment (freshwater): 59 mg/kg dwt.
PNEC sediment (marine water): 5,9 mg/kg dwt.
PNEC soil: 96 mg/kg dwt.
PNEC sewage treatment plant: 20 mg/L.

8.2 Exposure controls

Respiratory protection: When vapours form: Withdraw by suction. Execute works under fume hood.
If vapours form, use respiratory protection.
Use filter type ABEK according to EN 14387.

Hand protection: Protective gloves according to EN 374.
Glove material: Nitrile rubber
Layer thickness: 0,11 mm.
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and break

Eye protection: Tightly sealed safety glasses according to EN 166.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:
Take off immediately all contaminated clothing.
When using do not eat or drink.
Wash hands before breaks and after work.
Avoid contact with skin and eyes.
Work place should be equipped with a shower and an eye rinsing apparatus.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

Physical state: liquid
Colour: Colourless up to light yellow, transparent
Odour: no data available

Boiling temperature / boiling range (HEDP, anhydrous): Thermal decomposition
Melting point / melting range 8 - 199 ° C, Decomposition at approx. 228 ° C
Flash point / flash point range: not combustible

Density: at 20 ° C: 1.43-1.47 g/mL
pH value: (1 % solution) <= 2
Water solubility: 90 g/L: 60% w/w, pH 6-9 >= 5



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9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

May be corrosive to metals.

10.2 Chemical stability

Product is stable under normal storage conditions.

Shelf life: > 12 months (storage temperature > -10 °C).

10.3 Possibility of hazardous reactions

Reacts with steel and aluminium.

10.4 Conditions to avoid

Protect from excessive heat.

10.5 Incompatible materials

strong oxidizing agents

10.6 Hazardous decomposition products

In the event of a fire, the following may be produced when the water evaporates: Phosphorus oxides, Phosphine, nitrogen oxides (NO_x), carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: LD50 Rat, oral: 2910 mg/kg (1-Hydroxy Ethylidene-1,1-Diphosphonic Acid)
LD50 Rabbit, dermal: > 6310 mg/kg(1-Hydroxy Ethylidene-1,1-Diphosphonic Acid)

After swallowing: After ingestion of high quantities:
May be harmful if swallowed.

In case of skin contact: May cause irritations.
Information about HEDP: Rabbit: mild irritant (58-62%-
solution, OECD 404).

After eye contact: Causes serious eye irritation.
Information about HEDP: Rabbit: irritant (OECD 405).



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General remarks

Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID)

Sensitization:

Guinea pig not sensitising (OECD 406).

Mutagenicity:

Bacterial mutagenicity: negative.

gene-mutations mammalian cells negative.

Based on available data, the classification criteria are not met.

Carcinogenicity:

Rat-longterm animal experiment: No visible effects.

Based on available data, the classification criteria are not met.

Reproduction toxicity/developmental toxicity/teratogenicity:

Based on available data, the classification criteria are not met.

STOT SE:

Based on available data, the classification criteria are not met.

STOT RE:

Based on available data, the classification criteria are not met.

Danger of aspiration:

Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID)

Algae toxicity:

NOEC Selenastrum capricornutum: 13 mg/L/14d.

Daphnia toxicity:

EC50 Daphnia magna: 527 mg/L/48h (OECD 202).

NOEC Daphnia magna: 6,8 mg/L/21d.

Fish toxicity:

LC50 Lepomis macrochirus (bluegill): 868 mg/L/96h (OECD 203). LC50 Oncorhynchus mykiss: 200 mg/L/72h.

NOEC Oncorhynchus mykiss: 60 mg/L/14d.

Water Hazard Class:

1 = slightly hazardous to water

12.2. Persistence and degradability

Further details:

Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID)

Biodegradation: 0 %/30 d (closed bottle test)

Not readily biodegradable (according to OECD criteria).

Effects in sewage plants:

Information about 1-Hydroxy Ethylidene-1,1-Diphosphonic Acid:

EC 0 Bacteria in activated sludge: 200 mg/L/30 min.

12.3 Bioaccumulative potential

Information about HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID):

Bioaccumulative potential low.

Secondary poisoning via the food chain is unlikely to occur.



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12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6 Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number 06 01 06* = Other acids
*= Evidence for disposal must be provided.

Recommendation: Special waste. Dispose of waste according to applicable legislation.

Contaminated packaging

Recommendation: Containers will enclose product residues and vapours after being emptied.
Dispose of waste according to applicable legislation.
same way as the substance itself. Non-contaminated packages may b

SECTION 14: Transport information

14.1 UN number

ADR/RID, IMDG, IATA: 3265

14.2 UN proper shipping name

ADR/RID, IMDG, IATA: UN 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (1-Hydroxy Ethylidene-1,1-Diphosphonic Acid)

14.3 Transport hazard class(es)

ADR/RID: Class 8, Code: C3
IMDG: Class 8, Code -
IATA: Class 8

14.4 Packing group

ADR/RID, IMDG, IATA: III

14.5 Environmental hazards

Marine Pollutant No

14.6 Special precautions for user



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Land transport (ADR/RID)

Warning board:	ADR/RID: Kemmler-number 80, UN number 3265
Hazard label	8
Special provisions	274
Limited quantities	5 L
EQ	E1
Contaminated packaging: Instructions	P001 IBC03 LP01 R001
Special provisions for packing together	MP19
Portable tanks: Instructions	T7
Portable tanks: Special provisions	TP1 TP28
Tank coding	L4BN
Tunnel restriction code:	E



Sea transport (IMDG)

EmS:	F-A, S-B
Special provisions	223, 274
Limited quantities	5 L
EQ	E1
Contaminated packaging: Instructions	P001, LP01
Contaminated packaging: Provisions	-
IBC: Instructions	IBC03
IBC: Provisions	-
Tank instructions: IMO	-
Tank instructions: UN	T7
Tank instructions Provisions	TP1, TP28
Stowage and segregation	Category A. Clear of living quarters.
Properties and observations	Causes burns to skin, eyes and mucous membranes.

Air transport (IATA)

Hazard	Corrosive
EQ	E1
Passenger Ltd.Qty.:	Y841 - Maximum quantity: 1 L
Passenger:	852 - Maximum quantity: 5 L
Cargo:	856 - Maximum quantity: 60 L
ERG	8L

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations - Great Britain

Hazchem-Code: 2X

National regulations - Germany

Storage class: 8B = Non-combustible corrosive substances

Water Hazard Class: 1 = slightly hazardous to water

Informations on working limitations:

Observe employment restrictions concerning young persons.



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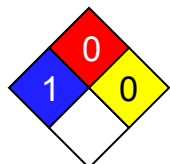
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National regulations - USA

Hazard rating systems



All ingredients of this product are listed on the TSCA inventory.

NFPA Hazard Rating:

Health: 1 (Slight)

Fire: 0 (Minimal)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 0 (Minimal)

Physical Hazard: 0 (Minimal)

Personal Protection: B

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	
	B

15.2 Chemical Safety Assessment

For the following substances of this mixture a chemical safety assessment has been carried out: HEDP 60% (1-HYDROXY ETHYLIDENE-1,1-DIPHOSPHONIC ACID)

SECTION 16: Other information

Further remarks

Hazard Statements

H290 = May be corrosive to metals.

H319 = Causes serious eye irritation.

R phrase(s):

R 22 = Harmful if swallowed.

R 35 = Causes severe burns.

R 36 = Irritating to eyes.

Reason of change:

Changes in section 2: classification/labeling

Changes in section 3: classification CAS 2809-21-4

Changes in section 12: Aquatic toxicity

Changes in section 15: Change in transport regulations

General revision

Group that issues data sheet

Contact person:

see chapter 1, department responsible for information.

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.