

## HEDP solution

Version number: 1.0

### SECTION 1: Identification

#### 1.1 Product identifier

**Trade name** HEDP solution  
**CAS number** not relevant (mixture)

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

**Relevant identified uses**  
 Corrosion inhibitors  
 Chelating agent  
 Textile auxiliary  
 Washing and cleaning product  
 Formulation additive

#### 1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC Telephone: +1 (760) 635 8500  
 179 Calle Magdalena Suite 100 e-mail: info@valudor.com  
 Encinitas, California CA 92024 Website: www.valudor.com  
 United States

#### 1.4 Emergency telephone number

**Emergency information service** 800-535-5053 (Infotrac)  
 As above or next toxicological information centre.

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
B.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290

For full text of abbreviations: see SECTION 16

#### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

**Signal word** danger

# HEDP solution

## Pictograms

GHS05



## Hazard statements

**H290** May be corrosive to metals.

**H318** Causes serious eye damage.

## Precautionary statements

**P234** Keep only in original container.

**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.

**P310** Immediately call a poison center/doctor/...

**P390** Absorb spillage to prevent material damage.

**P406** Store in corrosive resistant container with a resistant inner liner.

**Hazardous ingredients for labelling** 1-hydroxyethane-1,1-diphosphonic acid

## 2.3 Other hazards

### Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.



## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture).

### 3.2 Mixtures

#### Description of the mixture

Hazardous ingredients				
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
1-hydroxyethane-1,1-diphosphonic acid	CAS No 2809-21-4	58 - 62	Acute Tox. 4 / H302 Eye Dam. 1 / H318 Met. Corr. 1 / H290	 

The specific exact percentage (concentration) of composition has been withheld as a trade secret.

# HEDP solution

---

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

Self-protection of the first aider.

Remove victim out of the danger area.

Take off immediately all contaminated clothing.

In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

#### Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

If skin irritation or rash occurs: Get medical advice/attention.

#### Following eye contact

Rinse immediately carefully and thoroughly with eye shower or water.

Remove contact lenses, if present and easy to do. Continue rinsing.

Get immediate medical advice/attention.

#### Following ingestion

Rinse mouth with water (only if the person is conscious).

Do NOT induce vomiting.

Get medical advice/attention.

#### Notes for the doctor

None.

### 4.2 Most important symptoms and effects, both acute and delayed

These information are not available.

### 4.3 Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

fire extinguishing powder, coordinate firefighting measures to the fire surroundings

#### Unsuitable extinguishing media

none

### 5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Substance or mixture corrosive to metals.

# HEDP solution

---

## **Hazardous combustion products**

carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), phosphorus oxides (P<sub>x</sub>O<sub>y</sub>)

### **5.3 Advice for firefighters**

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

### **Special protective equipment for firefighters**

chemical protection suit, self-contained breathing apparatus (SCBA)

## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

#### **For non-emergency personnel**

Remove persons to safety.

Ventilate affected area.

Avoid inhaling sprayed product.

Do not get in eyes, on skin, or on clothing.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

#### **For emergency responders**

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

### **6.2 Environmental precautions**

In case of formation of gases/vapors/mists suppress with water spray

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

### **6.3 Methods and material for containment and cleaning up**

#### **Advice on how to clean up a spill**

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

#### **Appropriate containment techniques**

Neutralization techniques.

Use of adsorbent materials.

#### **Other information relating to spills and releases**

Place in appropriate containers for disposal.

Ventilate affected area.

## 6.4 Reference to other sections

Hazardous combustion products: see section 5.  
Personal protective equipment: see section 8.  
Incompatible materials: see section 10.  
Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

#### Specific notes/details

None.

#### Handling of incompatible substances or mixtures

Do not mix with alkali.

#### Measures to protect the environment

Avoid release to the environment.

#### Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.  
Remove contaminated clothing and protective equipment before entering eating areas.  
Do not breathe mist/vapors/spray.  
Do not get in eyes, on skin, or on clothing.  
Wash hands thoroughly after handling.  
Preventive skin protection (barrier creams/ointments) is recommended.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

#### Flammability hazards

None.

#### Incompatible substances or mixtures

Incompatible materials: see section 10.

#### Protect against external exposure, such as

heat, frost, UV-radiation/sunlight

#### Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

#### Ventilation requirements

Provision of sufficient ventilation.

# HEDP solution

## Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.  
Keep in a cool place.

**Storage temperature** minimum storage temperature: 0 °C

## Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

## 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Relevant PNECs of components of the mixture					
Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	0.068 mg/l	freshwater	short-term (single instance)
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	0.007 mg/l	marine water	short-term (single instance)
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	40 mg/l	sewage treatment plant (STP)	short-term (single instance)
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	136 mg/kg	freshwater sediment	short-term (single instance)
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	13.6 mg/kg	marine sediment	short-term (single instance)
1-hydroxyethane-1,1-di-phosphonic acid	2809-21-4	PNEC	10 mg/kg	soil	short-term (single instance)

### 8.2 Exposure controls

#### Appropriate engineering controls

General ventilation.

#### Individual protection measures (personal protective equipment)

##### Eye/face protection

Wear eye/face protection.

# HEDP solution

## Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
NBR: acrylonitrile-butadiene rubber	≥ 0,11 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

## Body protection

Protective clothing against liquid chemicals.

## Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Type: ABEK (combined filters against gases and vapors, color code: Brown/Grey/Yellow/Green).

## Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	liquid
Color	colourless to pale yellow - transparent
Odor	characteristic

#### Other safety parameters

pH (value)	≤2 (in aqueous solution: 1 wt%)
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	>100 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant (fluid)
Explosive limits	not determined

## HEDP solution

---

<b>Vapor pressure</b>	not determined
Density	1.43 – 1.47 g/cm <sup>3</sup> at 20 °C
Vapor density	this information is not available
Relative density	information on this property is not available
<b>Solubility(ies)</b>	
Water solubility	miscible in any proportion
<b>Partition coefficient</b>	
n-octanol/water (log KOW)	not determined
Auto-ignition temperature	not determined
<b>Decomposition temperature</b>	>200 °C
<b>Viscosity</b>	
<b>Kinematic viscosity</b>	not determined
<b>Dynamic viscosity</b>	not determined
<b>Explosive properties</b>	none
<b>Oxidizing properties</b>	none
<b>Information for relevant hazard classes according to GHS</b>	there is no additional information

**9.2 Other information** there is no additional information

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Substance or mixture corrosive to metals.

#### 10.2 Chemical stability

See below "Conditions to avoid".

#### 10.3 Possibility of hazardous reactions

Strong exothermic reaction with strong alkalis.

#### 10.4 Conditions to avoid

Keep away from heat.  
UV-radiation/sunlight.

#### 10.5 Incompatible materials

bases, oxidizers, metal



# HEDP solution

## 10.6 Hazardous decomposition products

Carbon monoxide (CO).  
Carbon dioxide (CO<sub>2</sub>).  
Phosphorus oxides (P<sub>x</sub>O<sub>y</sub>).  
Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Classification procedure

If not otherwise specified the classification is based on:  
Ingredients of the mixture (additivity formula).

#### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

#### Acute toxicity

Test data are not available for the complete mixture.

#### Acute toxicity of components of the mixture

Acute toxicity of components of the mixture						
Name of substance	CAS No	Exposure route	Endpoint	Value	Species	Method
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	oral	LD50	1,878 mg/kg	rat	OECD Guideline 401
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	dermal	LD50	>5,000 mg/kg	rabbit	OECD Guideline 402

#### Skin corrosion/irritation

#### The classification criteria for this hazard class are not met

The classification is based on tested mixture.

#### Serious eye damage/eye irritation

Causes serious eye damage.

#### Respiratory or skin sensitization

#### Skin sensitization

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

#### Respiratory sensitization

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

#### Germ cell mutagenicity

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

# HEDP solution

## Carcinogenicity

### IARC Monographs

None of the ingredients are listed.

### National Toxicology Program (United States)

None of the ingredients are listed.

### OSHA Carcinogens

None of the ingredients are listed.

## Reproductive toxicity

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

## Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## Specific target organ toxicity - repeated exposure

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

## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## 11.2 Other information

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Aquatic toxicity (acute)

Test data are not available for the complete mixture.

#### Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Exposure time
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	LC50	195 mg/l	rainbow trout (Oncorhynchus mykiss)	OECD Guideline 204	96 h
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	EC50	527 mg/l	daphnia magna	OECD Guideline 202	48 h

#### Aquatic toxicity (chronic)

Test data are not available for the complete mixture.

# HEDP solution

## Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Method	Exposure time
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	LC50	180 mg/l	rainbow trout (Oncorhynchus mykiss)	OECD Guideline 204	14 d
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	NOEC	6.75 mg/l	daphnia magna	EPA 66013-75-009	28 d
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	NOEC	60 mg/l	rainbow trout (Oncorhynchus mykiss)	OECD Guideline 204	14 d

## 12.2 Persistence and degradability

### Biodegradation

Not readily biodegradable.

### Persistence

No data available.

## 12.3 Bioaccumulative potential

### Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW
1-hydroxyethane-1,1-diphosphonic acid	2809-21-4	71	-3.5

## 12.4 Mobility in soil

No data available.

## 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

## 12.6 Other adverse effects

This information is not available.

### Remarks

Wassergefährdungsklasse, WGK (water hazard class): 2

# HEDP solution

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used.

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

### 14.1 UN number

DOT	UN3265
IMDG-Code	UN3265
ICAO-TI	UN3265

### 14.2 UN proper shipping name

DOT	Corrosive liquid, acidic, organic, n.o.s.
IMDG-Code	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
ICAO-TI	Corrosive liquid, acidic, organic, n.o.s.
Technical name (hazardous ingredients)	etidronic acid

### 14.3 Transport hazard class(es)

DOT	8
IMDG-Code	8
ICAO-TI	8

### 14.4 Packing group

DOT	III
IMDG-Code	III
ICAO-TI	III

### 14.5 Environmental hazards

-

### 14.6 Special precautions for user

-

# HEDP solution

---

## 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code -

## 14.8 Information for each of the UN Model Regulations

### Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

Particulars in the shipper's declaration UN3265, Corrosive liquid, acidic, organic, n.o.s., (etidronic acid), 8, III

Danger label(s) 8



Special provisions (SP) 386, IB3, T7, TP1, TP28

ERG No 153

### International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant -

Danger label(s) 8



Special provisions (SP) 223, 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

EmS F-A, S-B

Stowage category A

Segregation group 1 - Acids.

### International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Danger label(s) 8



Special provisions (SP) A3

Excepted quantities (EQ) E1

Limited quantities (LQ) 1 L

# HEDP solution

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### National regulations (United States)

**Toxic Substance Control Act (TSCA)** all ingredients are listed

#### Superfund Amendment and Reauthorization Act (SARA TITLE III )

**The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)**

none of the ingredients are listed

#### Specific Toxic Chemical Listings (EPCRA Section 313)

none of the ingredients are listed

#### Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

**List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)**

none of the ingredients are listed

#### Clean Air Act

none of the ingredients are listed

#### Right to Know Hazardous Substance List

##### Hazardous Substance List (NJ-RTK)

none of the ingredients are listed

#### California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

#### Industry or sector specific available guidance(s)

##### NPCA-HMIS® III

Hazardous Materials Identification System.

American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	0	material that will not burn under typical fire conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	-

# HEDP solution

## NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	0	material that will not burn under typical fire conditions
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard	-	-

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

## SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2021-07-16

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
BCF	Bioconcentration factor
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)

## HEDP solution

Abbr.	Descriptions of used abbreviations
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Met. Corr.	Substance or mixture corrosive to metals
NOEC	No Observed Effect Concentration
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties.

Health hazards.

Environmental hazards.

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H318	Causes serious eye damage.



## HEDP solution

---

### **Responsible for the safety data sheet**

Chemical Regulatory Compliance Company Telephone: +1 (630) 410-1660  
Chicago, IL e-Mail: GHS@crc-us.com  
USA Website: www.crc-us.com

### **Disclaimer**

This information is based upon the present state of our knowledge.  
This SDS has been compiled and is solely intended for this product.