

## Potassium Dihydrogen Phosphite (MKP)

Version number: 1.0

### SECTION 1: Identification

#### 1.1 Product identifier

Identification of the substance	potassium hydrogen phosphonate
Trade name	<u>Potassium Dihydrogen Phosphite (MKP)</u>
CAS number	13977-65-6

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

Relevant identified uses	Fertilizer
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#### 1.3 Details of the supplier of the safety data sheet

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

Emergency information	800-535-5053 (Infotrac)
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As above or nearest 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	2	Eye Irrit. 2	H319

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	warning
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## Pictograms

GHS07



## Hazard statements

**H319** Causes serious eye irritation.

## Precautionary statements

**P280** Wear 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.

## 2.3 Other hazards

### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

<b>Name of substance</b>	potassium hydrogen phosphonate
<b>Identifiers</b>	
CAS No	13977-65-6
<b>Molecular formula</b>	KH <sub>2</sub> PO <sub>3</sub>
<b>Molar mass</b>	120.1 g/mol
<b>Purity</b>	≥ 98%

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

Self-protection of the first aider.

Remove affected person from the danger area and lay down.

Do not leave affected person unattended.

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.

Keep affected person warm, still and covered.

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## **Following skin contact**

Wash with plenty of soap and water.

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

## **Following eye contact**

Rinse cautiously with water for several minutes.

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

If eye irritation persists: Get medical advice/attention.

## **Following ingestion**

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

## **Notes for the doctor**

None.

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

This information is 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**

water, foam, alcohol resistant foam, fire extinguishing powder,  
coordinate firefighting measures to the fire surroundings

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

Hazardous decomposition products: Section 10.

#### **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**

Non-combustible.

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**

Wear self-contained breathing apparatus

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## 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 contact with skin and eyes.

Control of dust.

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

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 contain a spill

Take up mechanically.

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

Take up mechanically.

Collect spillage.

#### 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

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

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

Use local and general ventilation.

Keep away from sources of ignition - No smoking.

Measures to prevent aerosol and dust generation.

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## Specific notes/details

None.

## Measures to protect the environment

Avoid release to the environment.

## Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

Remove contaminated clothing and protective equipment before entering eating areas.

## 7.2 Conditions for safe storage, including any incompatibilities

### Flammability hazards

None.

### Incompatible substances or mixtures

Incompatible materials: see section 10.

### Protect against external exposure, such as

heat, humidity

### Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

### Ventilation requirements

Provision of sufficient ventilation.

### Specific designs for storage rooms or vessels

Store in a dry place.

### Packaging compatibilities

Keep only in original container.

## 7.3 Specific end use(s)

Fertilizer.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limit values (Workplace Exposure Limits)

No constituent of the product currently has a known exposure limit.

### 8.2 Exposure controls

#### Appropriate engineering controls

Use local and general ventilation.

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## Individual protection measures (personal protective equipment)

### Eye/face protection

Wear eye/face protection.

### Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
no information available	-	-

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.

### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

### 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

<b>Physical state</b>	solid (crystalline)
<b>Color</b>	white
<b>Odor</b>	odorless
<b>Odor threshold</b>	not determined
<b>Other safety parameters</b>	
<b>pH (value)</b>	not applicable
<b>Melting point/freezing point</b>	189 – 194 °C
<b>Boiling point or initial boiling point and boiling range</b>	not determined
<b>Flash point</b>	not applicable
<b>Evaporation rate</b>	not determined

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<b>Flammability (solid, gas)</b>	non-combustible (ECHA, EU method A.10)
<b>Explosive limits</b>	not determined
Explosion limits of dust clouds	not determined
<b>Vapor pressure</b>	0 Pa at 25 °C (ECHA, Key value for chemical safety assessment)
Density	0.979 g/ml
Relative density	0.979 (water = 1)
Relative vapour density	not applicable
<b>Solubility(ies)</b>	
Water solubility	1,720 g/l
<b>Partition coefficient</b>	
n-octanol/water (log KOW)	not relevant (inorganic)
Auto-ignition temperature	not determined
<b>Decomposition temperature</b>	>200 °C
<b>Viscosity</b>	not relevant (solid)
<b>Explosive properties</b>	none
<b>Oxidizing properties</b>	none
<b>Information for relevant hazard classes according to GHS</b>	hazard classes acc. to GHS (physical hazards): not relevant
<b>9.2 Other information</b>	there is no additional information

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

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## 10.3 Possibility of hazardous reactions

No known hazardous reactions.

## 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

## 10.5 Incompatible materials

acids, bases, oxidizers

## 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

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

##### Acute toxicity

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

##### Inhalation.

Classification could not be established because:

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

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD0	>2,000 mg/kg	rat, female	EU method B.1	ECHA
dermal	LD0	>5,000 mg/kg	rat	OECD Guideline 402	ECHA

##### Skin corrosion/irritation

Classification could not be established because:

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

##### Serious eye damage/eye irritation

Causes serious eye irritation.

(ECHA)

##### Respiratory or skin sensitization

###### Skin sensitization

Classification could not be established because:

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



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## **Respiratory sensitization**

Classification could not be established because:  
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## **Germ cell mutagenicity**

Classification could not be established because:  
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## **Carcinogenicity**

### **IARC Monographs**

not listed

### **National Toxicology Program (United States)**

not listed

### **OSHA Carcinogens**

Not listed.

## **Reproductive toxicity**

Classification could not be established because:  
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## **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**

Classification could not be established because:  
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

## **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)**

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

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End-point	Exposure time	Value	Species	Method	Source	Notes
LC50	96 h	>200 mg/l	zebra fish (Danio rerio)	OECD Guideline 203	ECHA	read-across
ErC50	72 h	137.5 mg/l	algae (Desmod-esmus sub-spicatus)	OECD Guideline 201	ECHA	read-across
EbC50	72 h	101.3 mg/l	algae (Desmod-esmus sub-spicatus)	OECD Guideline 201	ECHA	read-across

## Aquatic toxicity (chronic)

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

End-point	Exposure time	Value	Species	Method	Source	Notes
EC50	3 h	>1,000 mg/l	activated sludge, domestic	OECD Guideline 209	ECHA	read-across
growth (EbCx) 10%	72 h	20.3 mg/l	algae (Desmod-esmus sub-spicatus)	OECD Guideline 201	ECHA	-
biode-gradation 10%	72 h	27.5 mg/l	algae (Desmod-esmus sub-spicatus)	OECD Guideline 201	ECHA	read-across

## 12.2 Persistence and degradability

### Biodegradation

The study does not need to be conducted because the substance is inorganic.

### Persistence

The study does not need to be conducted because the substance is inorganic.

## 12.3 Bioaccumulative potential

### n-octanol/water (log KOW)

not relevant  
(inorganic)

## 12.4 Mobility in soil

No data available.

## 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## 12.6 Endocrine disrupting properties Other adverse effects

Not listed.

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## Remarks

None.

## 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

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 not assigned

14.2 UN proper shipping name -

14.3 Transport hazard class(es) -

14.4 Packing group -

14.5 Environmental hazards -

14.6 Special precautions for user -

14.7 Transport in bulk according to IMO instruments -

### 14.8 Information for each of the UN Model Regulations

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

Not subject to transport regulations.

## 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) Substance is listed (ACTIVE)

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

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

Not listed

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

Not listed

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

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

Not listed

## **Clean Air Act**

Not listed

## **Right to Know Hazardous Substance List**

### **Cleaning Product Right to Know Act Substance List (CA-RTK)**

Not listed

### **Toxic or Hazardous Substance List (MA-TURA)**

Not listed

### **Hazardous Substances List (MN-ERTK)**

Not listed

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

Not listed

### **Hazardous Substance List (Chapter 323) (PA-RTK)**

Not listed

### **Hazardous Substance List (RI-RTK)**

Not listed

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

Not listed

## **Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)**

Not listed

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

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## NPCA-HMIS® III

Hazardous Materials Identification System.  
American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	2	temporary or minor injury may occur
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	-	-

## 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	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard	-	-

## 15.2 Chemical Safety Assessment

For this substance a chemical safety assessment has been carried out.

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

Date of preparation: 2023-05-30

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
EbC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control

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Abbr.	Descriptions of used abbreviations
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
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IARC Monographs	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)
IMDG	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
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
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).

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

Code	Text
H319	Causes serious eye irritation.

## Responsible for the safety data sheet

Chemical Regulatory Compliance Com-	Telephone: +1 (630) 410-1660
pany	e-Mail: GHS@crc-us.com
Jasper, GA	Website: www.crc-us.com
USA	

## Disclaimer

This information is based upon the present state of our knowledge.

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This SDS has been compiled and is solely intended for this product.