

# Phosphorous acid

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Date of issue: 12/16/2019 Version: 1.0

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

#### 1.1. Product identifier

Product form	: Substance
Substance name	: Phosphorous acid
Chemical name	: phosphonic acid
EC Index-No.	: 015-157-00-0
EC-No.	: 237-066-7
CAS-No.	: 13598-36-2
Product code	: 14596568
Formula	: H3O3P
Product group	: Raw material

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

##### 1.2.1. Relevant identified uses

Main use category	: Laboratory use,Industrial use,Professional use
Industrial/Professional use spec	: For professional use only
Use of the substance/mixture	: For analytical purposes Scientific research and development Not for human consumption or veterinary purposes.

##### 1.2.2. Uses advised against

No additional information available

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

##### Supplier

Scafell Organics  
Molekula Ltd  
Lingfield Way  
Darlington - England  
T +44 (0) 1949 823777 / +44 (0) 7590 545705  
[info@molekula.com](mailto:info@molekula.com) / [kbowen@molekula.com](mailto:kbowen@molekula.com) - [www.molekula.com](http://www.molekula.com)

#### 1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 1A	H314
Full text of H statements : see section 16	

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS05

GHS07

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H302 - Harmful if swallowed.  
H314 - Causes severe skin burns and eye damage.

Precautionary statements (CLP)

: P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Name	Product identifier	%
Phosphorous acid	(CAS-No.) 13598-36-2 (EC-No.) 237-066-7 (EC Index-No.) 015-157-00-0	100

Full text of H-statements: see section 16

#### 3.2. Mixtures

Not applicable

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: If possible show this sheet, if not available show packaging or label. Never give anything by mouth to an unconscious person. Do not leave affected person unattended.
First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. If breathing difficulties persist : Get medical advice/attention.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Do not remove clothing if it sticks to the skin. If irritation persists, consult a doctor.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth out with water. Do not induce vomiting. Get medical advice/attention.

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

Symptoms/effects after inhalation	: Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May be harmful if inhaled.
Symptoms/effects after skin contact	: Causes severe burns. May produce skin irritation, blistering, ulcers, and deep scarring. Cracking of the skin. Redness, pain.
Symptoms/effects after eye contact	: Causes serious eye burns. Blurred vision. redness, itching, tears. stinging. More severe symptoms are also possible.
Symptoms/effects after ingestion	: Harmful if swallowed. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Symptoms of ingestion include drowsiness, weakness, headache, dizziness, nausea, vomiting. More severe symptoms are also possible.

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

May cause severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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

Hazardous decomposition products in case of fire	: Phosphines. Phosphorus oxides.
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#### 5.3. Advice for firefighters

Precautionary measures fire	: Keep container tightly closed and away from heat, sparks and flame. Keep away from combustible materials.
Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Warn all persons of toxic hazard.

### SECTION 6: Accidental release measures

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

General measures	: Isolate from fire, if possible, without unnecessary risk. Avoid dust formation. No flames, no sparks. Eliminate all sources of ignition.
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##### 6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not touch or walk on the spilled product. Avoid contact with skin, eyes and clothing.
Measures in case of dust release	: Keep upwind. Avoid creating or spreading dust. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc).

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### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Use self-contained breathing apparatus and chemically protective clothing.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

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

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Shovel or sweep up and put in a closed container for disposal.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Avoid creating or spreading dust. Provide local exhaust or general room ventilation.
- Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

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

- Technical measures : Ensure adequate ventilation, especially in confined areas.
- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources, Direct sunlight. Keep container closed when not in use. Store contents under inert gas. Air and moisture sensitive.
- Incompatible products : Strong oxidizing agents. Strong bases. Metals.
- Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. Air and moisture sensitive.
- Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Storage area : Store below 20 °C. Do not store in aluminium, galvanized or other corrodable containers. Store in dry protected location to prevent any moisture contact.
- Packaging materials : Do not store in corrodable metal.

### 7.3. Specific end use(s)

For analytical purposes. Scientific research and development. Not for human consumption or veterinary purposes.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures.

#### Personal protective equipment:

Avoid all unnecessary exposure.

#### Materials for protective clothing:

Wear suitable protective clothing, gloves and eye/face protection

#### Hand protection:

The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Butyl rubber	6 (> 480 minutes)	0.3		EN 374

#### Eye protection:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against powders and dusts.

Type	Use	Characteristics	Standard
Safety goggles, Face shield	Fine dust, Dust	tightly fitting safety goggles, With side shields	EN 166

#### Skin and body protection:

Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use

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Type	Standard		
Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product	EN ISO 13982		
<b>Respiratory protection:</b>			
Keep self contained breathing apparatus readily available for emergency use. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended			
Device	Filter type	Condition	Standard
Respiratory protective device with a particle filter	Type P3	Dust protection	EN 14387

### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystals. Crystalline powder.
Molecular mass	: 82 g/mol
Colour	: White to off-white.
Odour	: No data available.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 73 °C
Freezing point	: No data available
Boiling point	: 200 °C
Flash point	: > 100 °C
Auto-ignition temperature	: > 180 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Air and moisture sensitive.

### 10.5. Incompatible materials

Strong oxidizers. Strong bases. Metals.

### 10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. Thermal decomposition generates : Phosphines. Phosphorus oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Harmful if swallowed.

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Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

### Phosphorous acid (13598-36-2)

LD50 oral rat	1895 mg/kg
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Skin corrosion/irritation : Causes severe skin burns and eye damage.

Additional information : Based on available data, the classification criteria are not met

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Additional information : Based on available data, the classification criteria are not met

Respiratory or skin sensitisation : Not classified

Additional information : Based on available data, the classification criteria are not met

Germ cell mutagenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Reproductive toxicity : Not classified

Additional information : Based on available data, the classification criteria are not met

STOT-single exposure : Not classified

Additional information : Based on available data, the classification criteria are not met

STOT-repeated exposure : Not classified

Additional information : Based on available data, the classification criteria are not met

Aspiration hazard : Not classified

Additional information : Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

### Phosphorous acid (13598-36-2)

LC50 fish 1	6980 - 9784 mg/l Brachydanio rerio (Zebra Fish) 96hr
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### 12.2. Persistence and degradability

#### Phosphorous acid (13598-36-2)

Persistence and degradability	No data available.
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### 12.3. Bioaccumulative potential

#### Phosphorous acid (13598-36-2)

Bioaccumulative potential	No data available.
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### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Phosphorous acid (13598-36-2)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Other adverse effects

Additional information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.






## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
2834	2834	2834	2834	2834
<b>14.2. UN proper shipping name</b>				
PHOSPHOROUS ACID	PHOSPHOROUS ACID	Phosphorous acid	PHOSPHOROUS ACID	PHOSPHOROUS ACID
<b>Transport document description</b>				
UN 2834 PHOSPHOROUS ACID, 8, III, (E)	UN 2834 PHOSPHOROUS ACID, 8, III	UN 2834 Phosphorous acid, 8, III	UN 2834 PHOSPHOROUS ACID, 8, III	UN 2834 PHOSPHOROUS ACID, 8, III
<b>14.3. Transport hazard class(es)</b>				
8	8	8	8	8
				
<b>14.4. Packing group</b>				
III	III	III	III	III
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR)	: C2
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P002, IBC08, LP02, R001
Special packing provisions (ADR)	: B3
Mixed packing provisions (ADR)	: MP10
Portable tank and bulk container instructions (ADR)	: T1
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Bulk (ADR)	: VC1, VC2, AP7
Hazard identification number (Kemler No.)	: 80
Orange plates	: 

Tunnel restriction code (ADR)	: E
EAC code	: 2X

#### Transport by sea

Packing instructions (IMDG)	: P002, LP02
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW1

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Properties and observations (IMDG) : Colourless to yellow deliquescent crystals. Soluble in water. Mildly corrosive to most metals. Causes burns to skin, eyes and mucous membranes.

### Air transport

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y845  
PCA limited quantity max net quantity (IATA) : 5kg  
PCA packing instructions (IATA) : 860  
PCA max net quantity (IATA) : 25kg  
CAO packing instructions (IATA) : 864  
CAO max net quantity (IATA) : 100kg  
Special provisions (IATA) : A803  
ERG code (IATA) : 8L

### Inland waterway transport

Classification code (ADN) : C2  
Limited quantities (ADN) : 5 kg  
Excepted quantities (ADN) : E1  
Equipment required (ADN) : PP, EP  
Number of blue cones/lights (ADN) : 0

### Rail transport

Classification code (RID) : C2  
Excepted quantities (RID) : E1  
Packing instructions (RID) : P002, IBC08, LP02, R001  
Special packing provisions (RID) : B3  
Mixed packing provisions (RID) : MP10  
Portable tank and bulk container instructions (RID) : T1  
Portable tank and bulk container special provisions (RID) : TP33  
Tank codes for RID tanks (RID) : SGAV  
Transport category (RID) : 3  
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP7  
Colis express (express parcels) (RID) : CE11  
Hazard identification number (RID) : 80

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions  
Phosphorous acid is not on the REACH Candidate List  
Directive 2012/18/EU (SEVESO III)

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

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SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*