

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

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

1.1. Product identifier

Product name : Phosphoric acid
SDS-number : 000000020139
Type of product : Mixture
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company : Honeywell International Inc. Honeywell International, Inc.
115 Tabor Road 115 Tabor Road
07950-2546 Morris Plains Morris Plains, NJ 07950-2546
USA USA

Telephone :
For further information, please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)
Country based Poison Control Center : see chapter 15.1

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Phosphoric acid

30417-1L


Version 1.4

Revision Date 17.12.2022

Corrosive to metals Category 1
H290 May be corrosive to metals.
Skin corrosion Category 1B
H314 Causes severe skin burns and eye damage.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.
Precautionary statements	:	P234 Keep only in original container. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 In case of inadequate ventilation wear respiratory protection. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P302 + P352 IF ON SKIN: Wash with plenty of water. P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Hazardous components which must be listed on the label	:	Orthophosphoric acid

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

2.3. Other hazards

The product is hygroscopic. Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
Orthophosphoric acid	7664-38-2 015-011-00-6 231-633-2	Skin Corr. 1B; H314 Met. Corr. 1; H290	$\geq 50\%$ - $\leq 100\%$	Eye Irrit. 2; H319:10 - $< 25\%$ Skin Irrit. 2; H315:10 - $< 25\%$ Skin Corr. 1B; H314: $\geq 25\%$

Remaining components of this product are non-hazardous and/or are present at concentrations below reportable limits.

Occupational Exposure Limit(s), if available, are listed in Section 8.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation:

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician immediately.

Skin contact:

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician immediately.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Ingestion:

Rinse mouth with water. Drink 1 or 2 glasses of water. Do NOT induce vomiting. Call a physician immediately.

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

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Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

Extinguishing media which shall not be used for safety reasons:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Contact with metals liberates hydrogen gas.
In case of fire hazardous decomposition products may be produced such as:
Oxides of phosphorus

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided. Do not flush into surface water or sanitary sewer system. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6.3. Methods and materials for containment and cleaning up

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Ventilate the area.

With acids neutralization takes place under development of heat.

Neutralise with the following product(s):

lime

soda ash

Soak up with inert absorbent material.

Sweep up and shovel into suitable containers for disposal.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Provide sufficient air exchange and/or exhaust in work rooms. Use only acid resistant equipment.

Advice on protection against fire and explosion:

Normal measures for preventive fire protection.

Hygiene measures:

When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately. Remove and wash contaminated clothing before re-use. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:

Store in original container. Keep container tightly closed in a dry and well-ventilated place. Protect from extreme heat and cold. Do not leave vessels/containers open. Avoid product residues in/on containers.

7.3. Specific end use(s)

no additional data available

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits:

Components	Basis / Value type	Value / Form of exposure	Exceeding Factor	Remarks
Orthophosphoric acid	EH40 WEL TWA	1 mg/m ³		
Orthophosphoric acid	EH40 WEL			Listed
Orthophosphoric acid	EU ELV TWA	1 mg/m ³		Indicative
Orthophosphoric acid	EU ELV STEL	2 mg/m ³		Indicative
Orthophosphoric acid	EH40 WEL STEL	2 mg/m ³	15 minutes	

TWA - Time weighted average
STEL - Short term exposure limit

DNEL/ PNEC-Values

Component	End-use/impact	Exposure duration	Value	Exposure routes	Remarks
Orthophosphoric acid	Workers / Long-term systemic effects		70 mg/m ³	Inhalation	
Orthophosphoric acid	Workers / Long-term local effects		1 mg/m ³	Inhalation	
Orthophosphoric acid	Consumers / Long-term systemic effects		4,57 mg/m ³	Inhalation	
Orthophosphoric acid	Consumers / Long-term local effects		0,36 mg/m ³	Inhalation	

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Orthophosphoric acid	Consumers / Long-term systemic effects		0,1mg/kg bw/d	Skin contact	
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No PNEC data available.

Orthophosphoric acid	:	No hazard identified
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8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Engineering measures

Use with local exhaust ventilation.
acid resisting floor
Emergency sprinkling nozzle

Personal protective equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Hand protection:

Glove material: Natural Latex
Break through time: > 480 min
Glove thickness: 0,6 mm
Lapren®706
Gloves must be inspected prior to use.
Replace when worn.

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.
Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.
Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.
Manufacturer's directions for use should be observed because of great diversity of types .
Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:
Safety goggles

Skin and body protection:
Complete suit protecting against chemicals
Wear suitable protective equipment.

Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	colourless
Odour	:	odourless
molecular weight	:	98 g/mol
Freezing point	:	ca. 21 °C
Boiling point/boiling range	:	158 °C at 1.013 hPa
Flammability	:	Not applicable

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	300 °C Decomposition temperature
pH	:	1,0 at 20 °C
Viscosity, kinematic	:	No data available
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	16 hPa at 50 °C
Vapour pressure	:	2 hPa at 20 °C
Density	:	ca. 1,71 g/cm ³ at 20 °C
Bulk density	:	Not applicable

9.2 Other Information

The product is hygroscopic.

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Corrosive to metals	:	Corrosive to metals
Evaporation rate	:	No data available

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Viscosity, dynamic : No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

ca.300 °C
Decomposition temperature

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.
Corrosive in contact with metals

10.4. Conditions to avoid

Protect from atmospheric moisture and water.

10.5. Incompatible materials

Metals
Powdered metals
Gives off hydrogen by reaction with metals.
Strong bases

10.6. Hazardous decomposition products

In case of fire hazardous decomposition products may be produced such as:
Oxides of phosphorus

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:
No data available

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Acute dermal toxicity:

No data available

Acute inhalation toxicity:

No data available

Skin irritation:

Classification: Causes burns.

Eye irritation:

Classification: Causes burns.

Respiratory or skin sensitisation:

Classification: non-sensitizing

Germ cell mutagenicity:

Test Method: Ames test

Result: negative

Aspiration hazard:

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

No data available

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

No data available

Toxicity to aquatic plants:

EC50

Species: *Desmodesmus subspicatus* (green algae)

Value: > 100 mg/l

Exposure time: 72 h

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Method: OECD Test Guideline 201

Toxicity to Microorganisms:

EC50

Species: activated sludge

Value: 250 mg/l

Toxicity to aquatic invertebrates:

Immobilization

Species: Daphnia magna (Water flea)

Value: > 100 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

12.2. Persistence and degradability

Biodegradability:

The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Does not bioaccumulate.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.

Neutralisation will reduce ecotoxic effects.

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:

Dispose according to legal requirements.

Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number

ADR/RID:1805

IMDG:1805

IATA:1805

14.2 UN proper shipping name

ADR/RID:PHOSPHORIC ACID, SOLUTION

IMDG:PHOSPHORIC ACID SOLUTION

IATA:Phosphoric acid, solution

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID:no

Marine pollutant: no

14.6 Special precautions for user

IMDG Code segregation group (SGG1) – ACIDS,

14.7 Maritime transport in bulk according to IMO instruments

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC		Not applicable
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222
Ireland	+353(1)8092166

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär Giftinformation); +46104566786
Switzerland	145

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

Italy	0382 24444	United Kingdom	(+44) 844 892 0111
Germany	Berlin : 030/19240		
	Bonn : 0228/19240		
	Erfurt : 0361/730730		
	Freiburg : 0761/19240		
	Göttingen : 0551/19240		
	Homburg : 06841/19240		
	Mainz : 06131/19240		
	Munich : 089/19240		
Latvia	+37167042473		

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Inventory of Industrial Chemicals (AIIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)

Phosphoric acid

30417-1L

Version 1.4

Revision Date 17.12.2022

On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Orthophosphoric acid : H314 Causes severe skin burns and eye damage.
H290 May be corrosive to metals.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very bioaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

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