

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name

PH Min

Product code

[v.3.1], A33483, A31124, A31053, A33459, A33460, A33461

UFI:

9D5M-TC16-500P-75K5

<https://my.chemius.net/p/kj6nC0/en/pd/en>

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

Relevant identified uses

Acidity regulator. Fertiliser.

Uses advised against

Do not use for purposes other than those prescribed.

1.3 Details of the supplier of the safety data sheet

Supplier

Bertels B.V.

Ommelpad 2

6035 PC Ospel, The Netherlands

31 (0)495 63 15 59

info@bertelsholland.com

1.4 Emergency Telephone Number

Emergency

111

Supplier

31 (0)495 63 15 59

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

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

Acute Tox. 4; H302 Harmful if swallowed.

Skin Corr. 1A; H314 Causes severe skin burns and eye damage.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)**Signal word: DANGER**

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

P102 Keep out of reach of children.

P234 Keep only in original packaging.

P270 Do not eat, drink or smoke when using this product.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P405 Store locked up.

P501 Dispose of contents/container in accordance with national regulation.

Contains:

phosphoric acid

2.3 Other hazards**PBT/vPvB**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties

The substance is not included in the list of substances with endocrine disrupting properties established in accordance with Article 59 of the REACH Regulation. The substance is not identified as a substance with endocrine disrupting properties according to the criteria of Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

Additional information

No information.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

For mixtures see 3.2.

3.2 Mixtures

Name	CAS EC Index Reach	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Concentration Limits	Notes for substances
phosphoric acid	7664-38-2 231-633-2 015-011-00-6	59-85	Met. Corr. 1; H290 Acute Tox. 4; H302 Skin Corr. 1B; H314	Skin Corr. 1B; H314; C ≥ 25% Skin Irrit. 2; H315; 10% ≤ C < 25% Eye Irrit. 2; H319; 10% ≤ C < 25%	B

Notes for substances

B	<p>Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.</p> <p>In Part 3 entries with Note B have a general designation of the following type: "nitric acid ... %".</p> <p>In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.</p>
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SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****General notes**

Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency. When in doubt or if feeling unwell seek medical assistance. Show the safety data sheet and label to the physician. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. When it is suspected, that there may still be harmful vapours/fumes present in the air, respiratory protection (mask; self contained breathing apparatus) must be used. Wash contaminated clothing with water before removing or use gloves.

Following inhalation

Remove patient to fresh air - move out of dangerous area. Keep at rest in a position comfortable for breathing. If symptoms develop and persist, seek medical attention.

Following skin contact

Wash affected skin areas immediately with plenty of water and soap. Take off all contaminated clothing. Immediately obtain professional medical help!

Following eye contact

Immediately flush eyes with plenty of water while keeping eyelids apart (at least 15 minutes). After 5 minutes of rinsing, remove contact lenses, if present, and continue rinsing. Consult a physician immediately!

Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Immediately consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed**Following inhalation**

Excessive exposure to spray mist, fog, or vapours may cause respiratory irritation. Coughing, sneezing, nasal discharge, labored breathing.

Following skin contact

Skin burns: Signs/symptoms may include localised redness, swelling, itching, dryness, blistering.

Following eye contact

Redness, pain, burning sensation, tearing, can cause permanent damage to the eyes.

Following ingestion

May cause nausea/vomiting and diarrhea. May cause abdominal discomfort. If ingested, may cause burns of the mouth and throat, as well as perforation of the esophagus and stomach. Harmful to health.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the substance or mixture**Hazardous combustion products**

Product is not flammable. In case of a fire toxic gases can be generated; do not inhale gases/smoke. In contact with metals can release hydrogen – risk of forming an explosive mixture.

5.3 Advice for firefighters**Protective actions**

In case of fire or heating do not breathe fumes/vapours. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (BS EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (BS EN 137).

Additional information

Contaminated firefighting water and fire residues must be disposed of in accordance with the local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel****Protective equipment**

No information.

Precautionary measures

Ensure adequate ventilation.

Emergency procedures

No action shall be taken involving any personal risk or without suitable training. Prevent access to unprotected personnel. Evacuate the danger zone. Do not breathe vapour or mist. Avoid contact with skin, eyes and clothing.

For emergency responders

Use personal protective equipment.

6.2 Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. In case of release into the environment, inform the relevant authorities.

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

Stem the spill if this does not pose risks.

For cleaning up

Absorb product (with inert material), collect it in special container and dispose it to a licensed hazardous-waste disposal contractor. Prevent release into the sewer, water, basements or confined areas. Ventilate the premises. Clean contaminated area with plenty of water. Apply neutralizing agent (sodium carbonate).

Other information

No information.

6.4 Reference to other sections

See also sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling**Protective measures****Measures to prevent fire**

Ensure adequate ventilation.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Do not discharge into drains, surface water and soil. After use immediately close container tightly.

Other measures

No information.

Advice on general occupational hygiene

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Do not breathe vapours/mist. Avoid contact with skin, eyes and clothes. Remove contaminated clothes and wash them before reuse. Wear suitable protective equipment; see Section 8.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Keep in a cool, dry and well ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from alkaline substances. Do not store together with metals.

Packaging materials

Store only in original container. HDPE (high density polyethylene) Stainless steel. Glass.

Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

Storage temperature

0 - 35 °C

Storage class

No information.

Further information on storage conditions

No information.

7.3 Specific end use(s)**Recommendations**

See identified uses in Section 1.2.

Industrial sector specific solutions

No information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Occupational Exposure limit values**

Name	mg/m ³	ml/m ³	Short-term value mg/m ³	Short-term value ml/m ³	Remark	Biological Tolerance Values
Orthophosphoric acid (7664-38-2)	1	/	2	/	/	/

Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

DNEL/DMEL values**For product**

No information.

For components

Name	Type	Exposure route	exp. frequency	Remark	Value
phosphoric acid	Worker	inhalation	long term systemic effects	/	10.7 mg/m ³
phosphoric acid	Worker	inhalation	long term local effects	/	1 mg/m ³
phosphoric acid	Worker	inhalation	short term local effects	/	2 mg/m ³
phosphoric acid	Consumer	inhalation	long term systemic effects	/	4.57 mg/m ³
phosphoric acid	Consumer	inhalation	long term local effects	/	0.36 mg/m ³
phosphoric acid	Consumer	oral	long term systemic effects	/	0.1 mg/kg bw/day

PNEC values**For product**

No information.

For components

No information.

8.2 Exposure controls**Appropriate engineering control****Substance/mixture related measures to prevent exposure during identified uses**

Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothes. Do not eat, drink or smoke while working. Do not breathe vapours/aerosols.

Structural measures to prevent exposure

No information.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse. Keep eyewash bottles or personal eyewash units and emergency showers available.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

Personal protective equipment**Eye and face protection**

Wear tight fitting protective goggles and/or face protection (EN 166).

Hand protection

Protective gloves (EN ISO 374-1:2016). Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. The penetration time is determined by the protective glove manufacturer and must be observed.

Appropriate materials

Material	Thickness	Penetration Time	Remark
Nitril rubber (NBR)	0.35 mm	> 480 min	EN 374 – 3
fluoroelastomer (FKM)	0.4 mm	> 480 min	EN 374 – 3
Butyl rubber	0.5 mm	> 480 min	EN 374 – 3
polyvinyl chloride	0.5 mm	> 480 min	EN 374 – 3
Natural rubber	0.5 mm	> 480 min	EN 374 – 3
chloroprene rubber	0.5 mm	> 480 min	EN 374 – 3

Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345:2022). At high risk of skin exposure chemical suits (EN 13034:2005+A1:2009) and boots may be required (EN ISO 20345:2022).

Respiratory protection

In case of insufficient ventilation wear suitable respiratory protection. Wear suitable protective breathing mask (EN 136) with filter A2-P2 (EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard BS EN 137, BS EN 138.

Thermal hazards

No information.

Environmental exposure controls**Substance/mixture related measures to prevent exposure**

No information.

Instruction measures to prevent exposure

No information.

Organisational measures to prevent exposure

No information.

Technical measures to prevent exposure

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties****Important health, safety and environmental information**

Physical state	liquid
Shape	No information.
Colour	colourless
Odour	odourless
Odour threshold	No information.

Melting/freezing point or softening point	No information.
Boiling point or initial boiling point and boiling range	135 °C (75% w/w)
Flammability	No information.
Lower and upper explosion limit	No information.
Flash point	No information.
Auto-ignition temperature	No information.
Decomposition temperature	> 200 °C
pH	< 1 at 20 °C, conc. 100 %
Viscosity (dynamic)	0.015 Pas at 20 °C (75% w/w)
Solubility (Water)	Completely soluble
Partition coefficient n-octanol/water (log value)	No information.
Vapour pressure	No information.
Density	1.4 — 1.44 kg/L
Relative vapour density	3.4 (75 % w/w)
Particle characteristics	No information.

9.2 Other information**Information with regard to physical hazard classes**

No information.

Other safety characteristics

Solids content	0 % 0 vol %
Molecular weight	98 g/mol

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Exothermic reaction with water. Reacts with alkalis.

10.2 Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

10.4 Conditions to avoid

Protect from heat, direct sunlight, open fire, sparks. Avoid contact with incompatible materials.

10.5 Incompatible materials

Metals.

10.6 Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**(a) Acute toxicity****For components**

Name	Exposure route	Type	Species	Time	Value	Method	Remark
phosphoric acid	oral	LD ₅₀	mouse	/	1250 mg/kg	/	/
phosphoric acid	dermal	LC ₅₀	rabbit	/	2740 mg/kg	/	/

Additional information

Harmful if swallowed.

(b) Skin corrosion/irritation

No information.

Additional information

Causes severe skin burns and eye damage.

(c) Serious eye damage/irritation

No information.

(d) Respiratory or skin sensitisation

No information.

Additional information

The product is not classified as sensitising.

(e) (Germ cell) mutagenicity

No information.

(f) Carcinogenicity

No information.

(g) Reproductive toxicity

No information.

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

No information.

Additional information

STOT SE (single exposure): Not classified.

(i) STOT-repeated exposure

No information.

Additional information

STOT RE (repeated exposure): Not classified.

(j) Aspiration hazard

No information.

Additional information

Aspiration hazard: Not classified.

Symptoms related to the physical, chemical and toxicological characteristics

No information.

Interactive effects

No information.

11.2 Information on other hazards**Endocrine disrupting properties****For product**

The substance is not included in the list of substances with endocrine disrupting properties established in accordance with Article 59 of the REACH Regulation. The substance is not identified as a substance with endocrine disrupting

properties according to the criteria of Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

Other information

No information.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Acute (short-term) toxicity

No information.

Chronic (long-term) toxicity

No information.

12.2 Persistence and degradability

Abiotic degradation, physical- and photo-chemical elimination

No information.

Biodegradation

No information.

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log value)

No information.

Bioconcentration factor (BCF)

No information.

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

No information.

Surface tension

No information.

Adsorption/Desorption

No information.

12.5 Results of PBT and vPvB assessment

The substance is not classified as persistent, toxic, or a substance that can accumulate (PBT) or very persistent and very bioaccumulative (vPvB) substance.

12.6 Endocrine disrupting properties

For product

The substance is not included in the list of substances with endocrine disrupting properties established in accordance with Article 59 of the REACH Regulation. The substance is not identified as a substance with endocrine disrupting properties according to the criteria of Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7 Other adverse effects

No information.

12.8 Additional information

For product

Product is not classified as dangerous for environment. Negative effects on aquatic environment are possible due to changes in pH-value. Do not allow to reach ground water, water courses or sewage system.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product / Packaging disposal****Waste chemical**

Do not allow product to reach drains/sewage systems. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste.

Waste codes / waste designations according to LoW

06 01 04* - phosphoric and phosphorous acid

Packaging

Deliver completely emptied containers to approved waste disposal authorities. Uncleaned containers are classified as hazardous waste - they should be handled in the same manner as the contents.

Waste codes / waste designations according to LoW

15 01 10* - packaging containing residues of or contaminated by dangerous substances

Waste treatment-relevant information

No information.





Sewage disposal-relevant information

No information.

Other disposal recommendations

No information.

SECTION 14: TRANSPORT INFORMATION

ADR/RID	IMDG	IATA	ADN
14.1 UN number or ID number			
UN 1805	UN 1805	UN 1805	UN 1805
14.2 UN proper shipping name			
PHOSPHORIC ACID, SOLUTION	PHOSPHORIC ACID, SOLUTION	PHOSPHORIC ACID, SOLUTION	PHOSPHORIC ACID, SOLUTION
14.3 Transport hazard class(es)			
8	8	8	8
			
14.4 Packing group			
III	III	III	III
14.5 Environmental hazards			
NO	NO	NO	NO
14.6 Special precautions for user			

ADR/RID	IMDG	IATA	ADN
Limited quantities 5 L Packing Instructions P001, IBC03, LP01, R001 Transport category 3 Tunnel restriction code (E) Classification code C1	Limited quantities 5 L EmS F-A, S-B	Limited Quantity, Packing Instructions (Ltd Qty, Pkg Inst) Y841 Limited Quantity, Maximum Net Quantity/Package (Ltd Qty, Max Net Qty/Pkg) 1 L Packing Instructions (Pkg Inst) 852 Maximum Net Quantity/Package (Max Net Qty/Pkg) 5 L Cargo Aircraft Only, Packing Instructions (CAO, Pkg Inst) 856 Cargo Aircraft Only, Maximum Net Quantity/Package (CAO, Max Net Qty/Pkg) 60 L Special provisions A3, A803 Excepted quantities E1 ERG code 8L	Limited quantities 5 L
14.7 Maritime transport in bulk according to IMO instruments			
	Goods may not be carried in bulk in bulk containers, containers or vehicles.		

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

not applicable

Ingredients according to Regulation (EC) No 648/2004 on detergents

No information.

Special instructions

Observe the regulations on employment and protection against dangerous substances for young people, pregnant women and nursing mothers.

15.2 Chemical Safety Assessment

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

SECTION 16: OTHER INFORMATION

Indication of changes

2.2 Label elements 2.3 Other hazards 3.2 Mixtures 7.2 Conditions for safe storage, including any incompatibilities 8.1 Control parameters 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Key literature references and sources for data

No information.

Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals (Regulation (EC) No 1907/2006)
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure

SCBA - Self-Contained Breathing Apparatus

SDS - Safety data sheet

SIEF - Substance Information Exchange Forum

SME - Small and Medium sized Enterprises

STOT - Specific Target Organ Toxicity

(STOT) RE - Repeated Exposure

(STOT) SE - Single Exposure

SVHC - Substances of Very High Concern

UN - United Nations

vPvB - Very Persistent and Very Bioaccumulative

List of relevant H phrases

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.