

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name: PHOSPHORIC ACID 81.5%.

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

Identified uses: Use in formulations. Intermediate. Agrochemicals. Fertilizer. Metal Treatment. Fluxing agent.
Batteries. Laboratory reagent. Water treatment.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification (EC 1272/2008):

Physical hazards: Met. Corr. 1 - H290
Health hazards: Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318
Environmental hazards: Not Classified

Label elements:

Pictogram:



Signal word: Danger

Hazard statements: H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 2

Precautionary statements:

P264 Wash contaminated skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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

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.

Contains: Phosphoric acid 81.5%

Supplementary precautionary statements: P234 Keep only in original packaging.

P260 Do not breathe vapour/ spray.

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

P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P321 Specific treatment (see medical advice on this label).

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

P406 Store in a corrosion-resistant container with a resistant inner liner.

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

Other hazards: This product does not contain any substances classified as PBT or vPvB.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures:	Phosphoric Acid 81.5%	80-90%
CAS number:	7664-38-2	
EC number:	231-633-2	
REACH registration number:	012119485924-24-XXXX	

Classification:

Met. Corr. 1 - H290

Acute Tox. 4 - H302

Skin Corr. 1B - H314

Eye Dam. 1 - H318

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

4. FIRST AID MEASURES (SYMPTOMS)

Description of first aid measures:

General information: Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Chemical burns must be treated by a physician. Development of symptoms may be delayed for 24 to 48 hours.

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 3

Inhalation:	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention if symptoms are severe or persist.
Ingestion:	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention immediately.
Skin contact:	It is important to remove the substance from the skin immediately. Take off immediately all contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician. Get medical attention immediately.
Eye contact:	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes. Get medical attention immediately.
Protection of first aiders:	First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves.

Most important symptoms and effects, both acute and delayed:

Inhalation:	May cause discomfort. Severe irritation of nose and throat.
Ingestion:	May cause chemical burns in mouth, oesophagus and stomach.
Skin contact:	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact:	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Indication of any immediate medical attention and special treatment needed:

Notes for the doctor:	No data available.
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5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media:	Use fire-extinguishing media suitable for the surrounding fire.
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Special hazards arising from the substance or mixture:

Specific hazards:	Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.
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Hazardous combustion products:	Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours. Oxides of phosphorus.
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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 4

Advice for fire-fighters:

Protective actions during firefighting: Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters: Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personal precautions: No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of vapours. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.

Environmental precautions: The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

Methods and material for containment and cleaning up:

Methods for cleaning up: Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Approach the spillage from upwind. Stop leak if safe to do so. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. The requirements of the local water authority must be complied with if contaminated water is flushed directly to the sewer. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Reference to other sections: For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 5

7. HANDLING AND STORAGE

Precautions for safe handling:

Usage precautions:

Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. This product is corrosive. Immediate first aid is imperative. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene: Eye wash facilities and emergency shower must be available when handling this product. Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities:

Storage precautions:

Store in accordance with local regulations. Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. Avoid freezing.

Specific end use(s):

The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational exposure limits:

Phosphoric acid 81.5%

Long-term exposure limit (8-hour TWA): WEL 1 mg/m³

Short-term exposure limit (15-minute): WEL 2 mg/m³

WEL = Workplace Exposure Limit

Phosphoric acid 81.5% (CAS: 7664-38-2)

DNEL:

Workers - Inhalation; Long term local effects: 1 mg/m³

Workers - Inhalation; Short term local effects: 2 mg/m³

Workers - Inhalation; Long term systemic effects: 10.7 mg/m³

Consumer - Oral; Long term systemic effects: 0.1 mg/kg/day

Consumer - Inhalation; Long term local effects: 0.36 mg/m³

Consumer - Inhalation; Long term local effects: 4.57 mg/m³

Exposure controls:

Protective equipment:



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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 6

Appropriate engineering controls: Provide adequate ventilation. As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Ensure control measures are regularly inspected and maintained. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure operatives are trained to minimise exposure.

Eye/face protection: Wear tight-fitting, chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166. If inhalation hazards exist, a full-face respirator may be required instead. Eye wash facilities and emergency shower must be available when handling this product.

Hand protection: Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection: Avoid contact with skin. Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures: Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection: Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly.

Environmental exposure controls: Keep container tightly sealed when not in use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Liquid.
Colour:	Colourless to pale yellow.
Odour:	Pungent.
Odour threshold:	No data available.
pH:	pH (concentrated solution): <1
Melting point:	10°C
Initial boiling point and range:	145°C
Flash point:	Not applicable.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower flammability or explosive limits:	No data available.
Vapour pressure:	3.95 mm Hg @ 30°C 85 % H ₃ PO ₄

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 7

Vapour density:	No data available.
Bulk density:	1648 kg/m ³
Solubility(ies):	Miscible with water.
Partition coefficient:	No data available.
Auto-ignition temperature:	No data available.
Decomposition Temperature:	No data available.
Explosive properties:	No data available.
Oxidising properties:	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.
Other information:	

10. STABILITY AND REACTIVITY

Reactivity:	There are no known reactivity hazards associated with this product.
Chemical stability:	
Stability:	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions:	Possibility of hazardous reactions No potentially hazardous reactions known.
Conditions to avoid:	Avoid freezing.
Incompatible materials:	
Materials to avoid:	Alkalies. In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air. Strong oxidising agents. Peroxides.
Hazardous decomposition products:	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapours. Oxides of phosphorus.

11. TOXICOLOGICAL INFORMATION

Toxicological information on ingredients: Phosphoric acid 81.5%

Information on toxicological effects:

Acute toxicity – oral:

ATE oral (mg/kg): 613.5

Acute toxicity – oral:

Notes (oral LD₅₀): 300-2000 mg/kg, Oral, Rat

ATE oral (mg/kg): 500.0

Acute toxicity – dermal:

Notes (dermal LD₅₀): Data lacking.

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 8

Acute toxicity – inhalation:

Notes (inhalation LC₅₀): Data lacking.

Skin corrosion/irritation:

Animal data: Corrosive.

Serious eye damage/irritation:

Serious eye damage/irritation: Causes serious eye damage.

Skin sensitisation:

Skin sensitisation: Scientifically unjustified.

Germ cell mutagenicity:

Genotoxicity - in vitro: Based on available data the classification criteria are not met.

Carcinogenicity:

Carcinogenicity: No data available.

Reproductive toxicity:

Reproductive toxicity fertility: Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure:

STOT - single exposure: No data available.

Specific target organ toxicity - repeated exposure:

STOT - repeated exposure: No data available.

Aspiration hazard:

Aspiration hazard: No data available.

12. ECOLOGICAL INFORMATION

Ecological information on ingredients: Phosphoric acid 81.5%

Toxicity:

Acute aquatic toxicity:

Acute toxicity – fish: No data available.

Acute toxicity - aquatic invertebrates: EC₅₀, 48 hours: >100 mg/l, Daphnia magna

Acute toxicity - aquatic plants: EC₅₀, 72 hours: >100 mg/l, Desmodesmus subspicatus

Acute toxicity microorganisms: EC₅₀, 3 hours: >1000 mg/l, Activated sludge

Chronic aquatic toxicity:

Chronic toxicity - fish early life stage: No data available.

Chronic toxicity - aquatic invertebrates: No data available.

Persistence and degradability: No data available.

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 9

Bioaccumulative potential:

Partition coefficient: No data available.

Bioaccumulative potential: No data available.

Mobility in soil:

Mobility: No data available.

Results of PBT and vPvB assessment: Substance is inorganic. This substance is not classified as PBT or vPvB according to current EU criteria.

Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

General information: The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous. Dispose of waste product or used containers in accordance with local regulations

Disposal methods: Dispose of waste product or used containers in accordance with local regulations

14. TRANSPORT INFORMATION

UN number:

UN No. (ADR/RID): 1805

UN No. (IMDG): 1805

UN No. (ICAO): 1805

UN No. (ADN): 1805

UN proper shipping name:

Proper shipping name (ADR/RID): PHOSPHORIC ACID, SOLUTION

Proper shipping name (IMDG): PHOSPHORIC ACID, SOLUTION

Proper shipping name (ICAO): PHOSPHORIC ACID, SOLUTION

Proper shipping name (ADN): PHOSPHORIC ACID, SOLUTION

Transport hazard class(es):

ADR/RID class: 8

ADR/RID classification code: C1

ADR/RID label: 8

IMDG class: 8

ICAO class/division: 8

ADN class: 8

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SAFETY DATA SHEET

Phosphoric Acid 81.5%

Issued: 25/02/2019

Page 10

Transport labels:



Packing group:

ADR/RID packing group:	III
IMDG packing group:	III
ICAO packing group:	III
ADN packing group:	III

Environmental hazards:

Environmentally hazardous substance/marine pollutant: No.

Special precautions for user:

EmS:	F-A, S-B
ADR transport category:	3
Hazard Identification Number (ADR/RID):	80
Tunnel restriction code:	(E)

Transport in bulk according to Annex II of MARPOL and the IBC Code:

15. REGULATORY INFORMATION

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

National regulations: Health and Safety at Work etc. Act 1974 (as amended). The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.

EU legislation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. 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 (as amended).

Chemical safety assessment: No chemical safety assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

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16. OTHER INFORMATION**Abbreviations and acronyms used in the safety data sheet:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.

IATA: International Air Transport Association.

ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

IMDG: International Maritime Dangerous Goods.

CAS: Chemical Abstracts Service.

ATE: Acute Toxicity Estimate.

LC₅₀: Lethal Concentration to 50 % of a test population.

LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).

EC₅₀: 50% of maximal Effective Concentration.

PBT: Persistent, Bioaccumulative and Toxic substance.

vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms:

Acute Tox. = Acute toxicity Eye Dam. = Serious eye damage Met. Corr. = Corrosive to metals Skin Corr. = Skin corrosion

General information: Only trained personnel should use this material.

Hazard statements in full:

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.