

Section 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

- 1.1 **Product identifier: pH DOWN**
 - 1.1.1 **Mixture**
 - 1.1.2 **Other means of identification: Phosphoric acid – 40%, Orthophosphoric acid, Monophosphoric acid.**
- 1.2 **Relevant identified uses of the substance or mixture and uses advised against**
 - 1.2.1 **Relevant identified uses:**
For agricultural, fertilizer, and hydroponic use as a water treatment chemical.
 - 1.2.2 **Uses advised against:**
N/A
- 1.3 **Details of the supplier of the safety data sheet:**

Supplier:
Green Planet
 15374 – 103A Ave.
 Surrey, BC
 Canada
 V3R 7A2
 Tel: (604)-580-1287 Fax: (604)-580-2375
 E-Mail : info@mygreenplanet.com
- 1.4 **EMERGENCY TELEPHONE NUMBER: 1-866-913-4769**

Section 2: HAZARD IDENTIFICATION

- 2.1. **Classification of the substance or mixture:**

<i>Classification</i>
Met. Corr. 1
Skin Corr. 1B

- 2.2 **Label elements**
Hazard pictograms:



GHS05

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 the original packaging.
 P260 Do not breathe fume, mist, vapors, or spray.
 P264 Wash hands and forearms thoroughly after handling.
 P280 Wear protective gloves, clothing, eye protection, and face protection.
 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.
 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.



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P310	Immediately call a POISON CENTRE or a doctor.
P321	For specific treatment, refer to Section 4.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local regulations.

2.3 Other hazards

REACTIVITY: May react violently with alkali substances.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of overexposure for this product are by contact with skin and eyes.

ACUTE:

INHALATION: Causes severe respiratory irritation if inhaled.

CONTACT WITH SKIN: Contact may cause immediate severe irritation, progressing quickly to chemical burns.

EYE CONTACT: Contact may cause immediate severe irritation, progressing quickly to chemical burns. Can cause blindness.

INGESTION: May cause burns or irritation of the lining of the mouth, throat, and gastrointestinal tract. Swallowing small quantities of this material will result in serious health hazard.

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 Mixtures

3.1.1 Description of the mixture:

Orthophosphoric acid – 40% w/w

3.1.2 Ingredients:

Substance name	CAS No.	INDEX No.	EC No.	Concentration	Classification
Orthophosphoric acid	7664-38-2	015-011-00-6	231-633-2	5-40%	Category 1B: Causes severe skin burns and eye damage. Category 1: May be corrosive to metals.

3.1.3 Additional information:

This mixture does not contain further substances fulfilling the criteria of hazard class acute toxicity according to CLP regulation.

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 Following inhalation:

Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.

4.1.2. Following skin contact:

Take off all contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes. Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

4.1.3. Following eye contact:

Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Obtain medical attention.

4.1.4 Following ingestion:

If swallowed, do not induce vomiting. Seek medical advice immediately. Bring the container and SDS.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: Corrosive. Causes burns. Harmful if swallowed. Effects of exposure to substance may be delayed.

4.2.1 Inhalation:

Causes severe respiratory irritation if inhaled. Symptoms may include burning of nose and throat, constriction of airway, difficulty breathing, and shortness of breath, bronchial spasms, chest pains, and pink frothy sputum. Contact may cause immediate severe irritation progressing quickly to chemical burns. May cause pulmonary edema. Symptoms may be delayed.



4.2.2. Skin contact:

Contact may cause immediate severe irritation, progressing quickly to chemical burns.

4.2.3. Eye contact:

Contact may cause immediate severe irritation, progressing quickly to chemical burns. Can cause blindness.

4.2.4 Ingestion:

May cause burns or irritation of the lining of the mouth, throat, and gastrointestinal tract. Swallowing small quantities of this material will result in serious health hazard.

Section 5: FIREFIGHTING MEASURES**5.1 Extinguishing media:**

Suitable extinguishing media: Fire can be extinguished with water, carbon dioxide, powder or foam. Use extinguishing media appropriate for the surrounding fire.

Unsuitable extinguishing media: Do not get water inside the container. Do not apply water stream directly at source of leak. Do not use heavy water stream. A direct water stream will cause violent splattering and generation of heat.

5.2 Special hazards arising from the substance or mixture:

Hazardous combustion products: Potential violent reaction with sodium tetrahydroborate. Mixtures with nitromethane are explosive. Potential for formation of flammable gases if reacted with aldehydes, cyanides, mercaptans sulphites and sulphides.

5.3 Advice for fire-fighters:

Wear appropriate protective equipment and a Self-Containing Breathing Apparatus (SCBA). Isolate the materials not yet involved in the fire and protect personal. Move the containers from the fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

Section 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****6.1.1 For non-emergency personnel:**

Protective equipment: Wear safety glasses, use an appropriate respirator when ventilation is inadequate, wear chemical resistant gloves before handling the product.

Emergency procedures: Do not touch or walk through spilled material without suitable training.

6.1.2 For emergency responders:

Personal protective equipment: For complete personal protection, see section 8.

6.2 Environmental precautions

If possible, prevent entry into sewers, storm drains, surface waters, and soils. If contamination occurs, inform the relevant authorities if the product has caused environmental pollution.

6.3 Methods and material for containment and cleaning up**6.3.1 For containment:**

Stop leaks if possible without risk. Move containers away from spill area. Cover drains, storm, and sewer entrances.

6.3.2 For cleaning up:

Spilled liquid should be removed immediately as to avoid formation of dust from dried preparation. Rinse the area with water and mop up the remainder of the residue. **DO NOT USE BLEACH.**

Section 7: HANDLING AND STORAGE**7.1 Precautions for safe handling****7.1.1 Protective measures:**

To prevent skin and eye contact, wear appropriate protective clothing and safety eye ware. Avoid spills and keep away from drains. Keep the container tightly closed when not in use.

7.1.2 Advice on general occupational hygiene:

Do not eat, drink or smoke when handling the material. Wash hands and face after handling the material. Remove contaminated clothing and personal protective equipment.

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

Keep the container tightly closed, in a well ventilated area, away from direct sources of heat or ignition. Do not store in direct sunlight. Keep between 0-35 °C (32-95 °F). Do not store unlabelled containers. Do not store opened containers on its side. Avoid contact with metals (such as mild steel and aluminium) and chlorides, which may liberate flammable hydrogen gas that can produce an explosion in confined vessels.

Requirements for storage rooms and vessels:

Ambient temperature, humidity and pressure.

7.3 Specific end uses:

Recommendations: For the adjustment of acidity or alkalinity of liquid fertilizer systems.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**8.1 Control parameters****Occupational exposure limits:**

Limit value type (country of origin)	Substance name	Occupational exposure limit value		EC-No.	CAS-No.	Monitoring and observation processes	Peak limitation	Source
		Long term	Short term					
Australia	Orthophosphoric acid	1 mg/m ³	N/A	231-633-2	7664-38-2		N/A	GESTIS
Austria	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Belgium	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Canada	Orthophosphoric acid	1 mg/m ³	3 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Denmark	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
European Union	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Finland	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
France	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Germany	Orthophosphoric acid	2 mg/m ³	4 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
		aerosol	Aerosol					
Hungary	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Ireland	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Italy	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
New Zealand	Orthophosphoric acid	1 mg/m ³	N/A	231-633-2	7664-38-2		N/A	GESTIS
China	Orthophosphoric acid	1 mg/m ³	3 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Poland	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Singapore	Orthophosphoric acid	1 mg/m ³	N/A	231-633-2	7664-38-2		N/A	GESTIS
South Korea	Orthophosphoric acid	1 mg/m ³	3 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Spain	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Sweden	Orthophosphoric acid	1 mg/m ³	3 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Switzerland	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
Netherlands	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
USA - NIOSH	Orthophosphoric acid	1 mg/m ³	3 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS
USA - OSHA	Orthophosphoric acid	1 mg/m ³	N/A	231-633-2	7664-38-2		N/A	GESTIS
United Kingdom	Orthophosphoric acid	1 mg/m ³	2 mg/m ³	231-633-2	7664-38-2		N/A	GESTIS

8.1.2 Exposure limits at intended use:

None available.

8.2 Exposure controls**8.2.1 Appropriate engineering controls:**

Sufficient ventilation should always be provided to control worker exposure to airborne contaminants. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure controls.

8.2.2 Personal protective equipment:**8.2.2.1 Eye / Face protection:**

Suitable eye protection: Face shield. Chemical safety goggles.

Other eye protection measures: Do not wear contact lenses.

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Hand protection: Chemical resistant neoprene or polyvinyl alcohol gloves.

Body protection: Use body protection appropriate for the task. Chemical resistant suit and boots. Do not wear sandals, shorts, or cut of t-shirts.

Other skin protection measures: If deemed necessary, refer to U.S. OSHA 29 CFR 1910.136/138, or the European Standard DIN EN 374

8.2.2.3 Respiratory protection:

Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

8.2.2.4 Thermal hazards

None applicable.

8.2.3 Environmental exposure controls:

Refer to "Section 6" for environmental containment and clean up.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties****9.1.1 Appearance**

Physical state: Liquid

Colour: Light Orange/Yellow

Odour: Odourless

	value	temperature	pressure
<i>pH</i>	1.5		Ambient
<i>Melting point/freezing point</i>	-6°C		for 20% H ₃ PO ₄
<i>Initial boiling point/boiling range</i>	100.8°C		for 20% H ₃ PO ₄
<i>Flash point</i>			Not Available
<i>Evaporation rate</i>			Not Applicable
<i>Flammability (solid, gas)</i>			Not Available
<i>Upper/lower flammability or explosive limits</i>			Not Available
<i>Upper explosive limits</i>			Not Available
<i>Lower explosive limits</i>			Not Available
<i>Vapour pressure</i>		17 mm Hg @ 20°C	(for 20% H ₃ PO ₄)
<i>Vapour density</i>			Not Applicable
<i>Relative density</i>	1.3 g/ml		Ambient
<i>Solubility(ies)</i>			Complete in water
<i>Partition coefficient: n-octanol/water</i>			Not available
<i>Auto-ignition temperature</i>			Not available
<i>Decomposition temperature</i>			Not available
<i>Viscosity</i>			Not Applicable
<i>Viscosity, dynamic</i>			Not Applicable
<i>Viscosity, cinematic</i>			Not Applicable
<i>Explosive properties</i>			Not considered explosive
<i>Oxidising properties</i>			Not considered an oxidizer

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

Potential violent reaction with sodium tetrahydroborate. Mixtures with nitromethane are explosive. Potential for formation of flammable gases if reacted with aldehydes, cyanides, mercaptans sulphites and sulphide.

10.2 Chemical stability

No hazardous reactions when handled and stored according to provisions.

10.3 Possibility of hazardous reactions

None are known.

10.4 Conditions to avoid:

Freezing. High humidity. High temperatures.



10.5 Incompatible materials:

Aldehydes, amines, amides, alcohols and glycols, azo-compounds, caustics, combustible materials, carbamates, epoxides, esters, explosives, ketones, organophosphates, organic peroxides, phenols and cresols, and unsaturated halides.

10.6 Hazardous decomposition products:

Under conditions of fire, this material may produce: phosphorus oxides, phosphine, and potential for formation of toxic fumes when reacted with cyanides, sulphites, sulphides, fluorides, organic peroxides, and halogenated organics.

Section 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****11.1.1 Mixture****Acute toxicity**

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

Skin corrosion/irritation

Practical experience / human evidence: Causes sever skin burns.

Assessment / Classification: Category 1B Skin Corrosive

Eye damage/irritation

Practical experience / human evidence: Causes sever eye damage.

Assessment / Classification: Category 1B Skin Corrosive

Sensitization to the respiratory tract/skin

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

Sensitization to the respiratory tract

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

Skin sensitization

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

CMR effects (carcinogenetic, mutagenicity and toxicity for reproduction)**Germ cell mutagenicity**

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

Carcinogenicity

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

Reproductive toxicity

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

Overall assessment on CMR properties:

Ingredients within this product are not found on the following lists: OSHA Subpart Z, EPA IRIS, IARC, NTP, CalEPA; and therefore are not considered to be, nor suspected to be, cancer causing by these agencies.

Specific target organ toxicity (single exposure)**STOT SE 1 and 2**

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

STOT SE 3**Irritation to respiratory tract:**

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

Narcotic effects

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

Specific target organ toxicity (repeated exposure)**STOT RE 1 and 2**

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

Aspiration hazard

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

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

12.1.1 Aquatic toxicity

Acute (short-term) fish toxicity

	Effect dose/ Concentration	Test Duration	Species	Result/ Evaluation	Method	Remark
<i>Orthophosphoric acid</i>	43 - 72 mg/l	4 days	<i>Lepomis macrochirus</i>	LC50	Contr/Std Methods Used	344 U.S. Environmental Protection Agency, 1992

Chronic (long-term) fish toxicity

	Effect dose/ Concentration	Test duration	Species	Result/ Evaluation	Method	Remark
<i>Orthophosphoric acid</i>	Feed: 5.19%	189 days	<i>Oncorhynchus mykiss</i>	GRO/DEC	Msmt/Ave Final Body Weight	10607 Satoh, S., N. Porn-Ngam, T. Takeuchi, and T. Watanabe, 1993

Acute (short-term) toxicity to crustacean

	Effect dose/ Concentration	Test Duration	Species	Result/ Evaluation	Method	Remark
<i>Orthophosphoric acid</i>	72 – 121 mg/L	48 hours	<i>Daphnia magna</i>	EC50-ITX	unmeasured	344 U.S. Environmental Protection Agency, 1992

12.2 Persistence and degradability

Biodegradation:

Assessment / Classification:

Not Available.

12.3 Bioaccumulative potential

Assessment / Classification:

Not Available.

12.4 Mobility in soil

Assessment / Classification:

Not Available.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:

Disposal should be in accordance with applicable federal and state laws.

13.1.2 Other disposal recommendations:

Agricultural producers disposing of waste from their own use are exempt from hazardous waste requirements as long as (1) they triple rinse the emptied containers in accordance with the labeling to facilitate removal of the chemical from the container, and (2) they dispose of the residue on their own agricultural establishment in a manner consistent with the disposal instructions in accordance with the federal and state laws.

13.2 Additional information:


Inorganic phosphates have the potential to increase the growth of freshwater algae, whose eventual death will reduce the available oxygen for aquatic life. May change the pH of aqueous ecological systems.

The product is not listed as dangerous waste in the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

The product does not have an EPA Hazardous Waste Number.



Section 14: TRANSPORT INFORMATION

	Land transport (ADR/RID)	Inland waterway transport (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN No.	UN1805			
14.2 UN Proper shipping name	Phosphoric Acid Solution			
14.3 Transport hazard class(es)	8			
Hazard label(s)				
14.4 Packing group	III			
14.5 Environmental hazards	Not applicable			

14.6 Special precautions for user: Corrosive

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

14.8 Additional information

14.8.1 All transport carriers

14.8.2 Land transport (ADR/RID)

Limited quantity: 5 L

Special provisions: A7 – Steel packaging must be corrosive-resistant or have protection against corrosion. IB3 – Authorized IBCs; Metal (31A, 31B, and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2, and 31HH2). Additional requirements: only liquids with a vapor pressure less than or equal to 110 kPa at 50°C (1.1 bar at 112°F), or 130 kPa at 55°C (1.2 bar at 131°F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672.)

N34 – Aluminum construction materials are not authorized for any part of a packing which is normally in contact with the hazardous materials.

T4 – 2.65 178.274(d)(2) Normal; 178.275(d)(3)

TP1 – The maximum degree of fill must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a(tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees Celsius of the liquid during filling.

Tunnel restriction code: E

Classification code: C2

Transport category: 8 – Corrosive Substances

Hazard identification number (Kemler No.): 80

Remark: No supplemental information available

14.8.3 Inland waterway transport (ADN)

Limited quantity: 5 L

Special provisions: None

Category: 8 – Corrosive Substances

Remark: None

14.8.4 Sea transport (IMDG)

Limited quantity: 5 L

Special provisions: EmS-No. (1): F-A; EmS-No. (2): S-B

Marine pollutant: No

Segregation group: Not applicable

Remark: None

14.8.5 Air transport (ICAO-TI / IATA-DGR)

Limited quantity: 5 L

Special provisions: ERG Code: 8L

Remark: None

Section 15: REGULATORY INFORMATION

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

15.1.1 US Federal

SARA Title III Rules

Section 313 Toxic Chemicals

Listed on the United States TSCA (Toxic Substance Control Act) Inventory.

Section 311/312 Hazard Classes

Acute Health Hazard: Immediate

Chronic Health Hazard: Delayed

Fire Hazard: Under conditions of fire, this material may produce: phosphorus oxides, phosphine, and potential for formation of toxic fumes when reacted with cyanides, sulphites, sulphides, fluorides, organic peroxides, and halogenated organics.

Release of Pressure: None

Reactive Hazard: Potential violent reaction with sodium tetrahydroborate. Mixtures with nitromethane are explosive. Potential for formation of flammable gases if reacted with aldehydes, cyanides, mercaptans sulphites and sulphides.

15.1.2 US State Regulations

Massachusetts

Right to Know List

New Jersey

Right to Know Hazardous Substance List

Pennsylvania

Right to Know List

15.1.3 Canada

WHIMIS Classification

Class E – Corrosive Material

Class D Division 2 Subdivision B – toxic material causing other toxic effects.

This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

15.1.4 European Union

Classification according to the Regulation (EC) No 1272/2008 [EU-GHS/CLP]

No additional information available.

15.2 Chemical Safety Assessment:

No additional information available.

Section 16: OTHER INFORMATION

16.1 Indication of changes

Version No.: 1.0 - 10/02/2016

16.2 Disclaimer:

The information provided on this SDS is believed to be accurate to the best of our knowledge, but is not warranted to be so. The information provided is intended to present guidance for safe handling, use, processing, storage, transport, disposal, and discharge; it is not intended to be a guarantee or quality specification. Green Planet LLC assumes no responsibility for injury to vendee or third party person proximately caused by the material if safety procedure are not adhered to as stipulated in the SDS. Furthermore, Green Planet LLC assumes no responsibility for injury caused by abnormal use of the product even if reasonable safety procedures are followed. It is the responsibility of the recipient of this SDS to ensure that information given here is read and understood by all who use, handle, dispose of, or in any way come in contact with the product.