



MATERIAL SAFETY DATA SHEET

Product – Eko-Add® Concentrate

Common Name – Phosphoric Acid Solution

From:

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1. Product Identification

CAS Number: 7664-38-2 CEE: 015*011-00-6

Molecular Weight: 98.00

Chemical Formula: H₃PO₄ in H₂O

Product Code: A9804003

2. Composition/Information on Ingredients

<u>Ingredient</u>	<u>CAS No.</u>	<u>Percent</u>	<u>Hazardous</u>
Phosphoric Acid	7664-38-2	<15%	YES
Water	7732-18-5	> 85%	NO

3. Hazardous Identification

Emergency Overview:

Danger! Corrosive, causes severe irritation and burns to every area of contact.
Harmful if swallowed or inhaled.

Health Rating: Moderate

Flammability Rating: 0 – None

Reactivity Rating: Moderate

Contact Rating: Severe (Corrosive)

Lab Protective Equipment: Goggles & Shield; Lab Coat & Apron; Vent Hood;

Proper Gloves

Storage Color Code: White (Corrosive)



Potential Health Effects:

Inhalation:

Inhalation is not an expected hazard unless misted or heated at a high temperature. Mist or vapor inhalation can cause irritation to the nose, throat and upper respiratory tract. Severe exposures can lead to a chemical pneumonitis.

Ingestion:

Corrosive. May cause sore throat, abdominal pain, nausea, and severe burns of the mouth, throat, and stomach. Severe exposures can lead to shock, circulatory collapse and death.

Skin Contact:

Corrosive: may cause redness, pain and severe skin burns.

Eye Contact:

Corrosive: May cause redness, pain, blurred vision, eye burns and permanent eye damage.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Call a physician immediately.

Ingestion:

If swallowed, *DO NOT INDUCE VOMITTING*. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician immediately. Wash clothing before re-use.

Eye Contact:

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

5. Fire Fighting Measures

Fire:

Not considered to be a fire hazard. Contact with most metals causes formation of flammable and explosive hydrogen gas.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire-exposed containers cool. If water is used, use in abundance to control heat and acid build-up.



5. Fire Fighting Measures (cont'd)

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime) then absorb with an inert material (i.e. vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. DO NOT flush to sewer. US Regulations (CERCLA) require reported spill and releases to soil, water, and air in excess of reportable quantities.

7. Handling and Storage

Keep in tightly closed containers. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture, incompatibilities and direct sunlight. Corrosive to mild steel. Store in rubber lined or 316 stainless steel designed for phosphoric acid. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to acid. Water added to acid can cause uncontrolled boiling and splashing. Protect from freezing. Container of this material may be hazardous when empty since they retain product residues (vapors, liquids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL): 1 mg/m³ (TWA)
- ACGIH Threshold Limit Value (TLV): 1 mg/m³ (TWA), 3 mg/m³ (STEL)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits, Local exhaust ventilation is generally preferred because it can control the emissions of the containment at its sources, preventing dispersion of it into the general work area. Please refer to the ACGIH documents, *Industrial Ventilation, A Manual of Recommended Practices* most recent issues, for details.



8. Exposure Controls/Personal Protection (cont'd)

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a full face piece respirator with high efficiency dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances, where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protecting clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless syrupy liquid

Odor:

Odorless

Solubility:

Miscible in all proportions in water.

Specific Gravity:

1.075 @ 25C at 15% aqueous solution

pH:

1.5 (0.1 N aqueous solution)

% Volatiles by Volume @ 21C (70F): 100

Boiling Point:

158C (316F) @ 85% concentration of Phosphoric Acid

Melting Point:

21C (70F)

Vapor Density (Air =1):

3.4

Vapor Pressure (mm Hg):

0.03 @ 20C (68F)

Evaporation Rate (BuAc = 1):

No information found.



10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Substance can supercool without crystallizing.

Hazardous Decomposition Products:

Phosphorus oxides may form when heated to decomposition

Hazardous Polymerization:

Will not occur

Incompatibilities:

Liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Can react violently with sodium tetrahydroborate. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo-compounds, carbamates, esters, caustics, phenols, creoles, ketones, organophosphates, epoxides, explosives, combustible materials, unsaturated halides, and organic peroxides. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. It also forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Mixtures with nitromethane are explosive.

Conditions to Avoid:

Incompatibilities

11. Toxicological Information

Oral Rate LD50: 1530 mg/kg; investigated as a mutagen

Cancer Lists

<u>Ingredient</u>	<u>NTP Carcinogen</u>		<u>ARC Category</u>
	<u>known</u>	<u>anticipated</u>	
Phosphoric Acid (7664-38-2)	No	No	None
Water (7732-18-5)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into water, acidity may be readily reduced by neutral water hardness minerals. The phosphate, however, may persist indefinitely.

Environmental Toxicity:

No information found



13. Disposal Considerations

Whatever cannot be saved from recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper shipping name: Phosphoric Acid, 8, UN 1805
(Phosphoric Acid Aqueous Solution at 15%)

Hazard Class: 8, 17c)

UN/NA: UN1805

Packaging Group: III

International (Water, I.M.O.)

Proper Shipping Name: Phosphoric Acid, Liquid

Hazard Class: 8, 17c)

UN/NA: UN1805

Packaging Group: III

15. Regulatory Information

Danger Symbol: C (Corrosive)

Phrases R: R34

Phrases S: S26, S45

16. Other Information

NFPA Ratings: Health: 3 Flammability: 0 Reactivity: 0

Label Hazard Warning:

DANGER! CORROSIVE! CAUSES SEVERE IRRITATION AND BURNS TO EVERY AREA OF CONTACT HARMFUL IF SWALLOWED OR INHALED.

Label Precautions:

Do not get into eyes, on skin or on clothing.

Keep container closed.

Use on with adequate ventilation.

Do not breathe vapor or mist

Wash hands thoroughly after handling.



16. Other Information (cont'd)

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITTING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician immediately.

Note:

The information contained in this MSDS is based on the present knowledge and in the EU laws. The product must not be used for other applications outside the intended use. It is always the users responsibility to strictly follow the instructions and meet the legal requirements. The information in this MSDS is only a description regarding the product safety requirements.

ONA Electro-erosion, S. A.