

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product form : SOLUTION/MIXTURE
 Trade name : OSPHO
 Chemical name : ORTHOPHOSPHORIC ACID
 CAS name : 7664-38-2
 Product code : N/A
 Formula : H3PO4
 Synonyms : ORTHOPHOSPHORIC ACID
 REACH registration # : 01-2119485924-24-0021

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

Use of the solution/mixture: Metal surface treatment product

1.3. Details of the supplier of the safety data sheet

The Skybryte Company
 3125 Perkins Ave.
 Cleveland, OH 44114-4689
 www.Skybryte.com

SDS Preparer: Stephen L. Pitcher

Date: May 10, 2019

1.4. Emergency telephone number

In case of emergency: CHEMTREC 1-800-424-9300
 Emergency phone number: IN THE EVENT OF A CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT, call CHEMTREC: 1-800-424-9300. Toll Free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or U.S. Virgin Islands. For calls originating elsewhere dial (703) 527-3887 (Collect Calls Accepted)
 Nationwide Poison Control Center: 1-800-222-1222
 For other countries, see Section 16.6

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the solution/mixture

GHS-US Classification
 Skin Corr. 1B H314
 Full text of H-phrases: See Section 16
 VOC=0%

2.2. Label Elements

GHS-US Labeling
 Hazard pictograms (GHS-US)



CORROSIVE



IRRITANT

Signal word (GHS-US)
 Hazard Statements (GHS-US)
 Precautionary Statements (GHS-US)

: Danger
 : H314 -Causes severe skin burns and eye damage
 : P260 -Do not breathe spray, mist, fume, gas, dust, vapours
 : P280 -Wear protective gloves, protective clothing, eye protection, face protection
 : P301+P330+P331- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 : P303+P361+P353- IF ON SKIN(or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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
 :P234 - Keep only in original container
 :P310 - Immediately call POISON CONTROL CENTER, or a doctor

2.3. Other Hazards:
No additional information available

2.4. Unknown acute toxicity: (GHS-US)
Not applicable

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substance
Name: ORTHOPHOSPHORIC ACID
CAS No: 7664-38-2

Name	Product Identifier	%	GHS-US Classification
Orthophosphoric Acid	(CAS No) 7664-38-2	45% by weight	Skin Corr. 1B, H314

Full text of H-phrases: see Section 16

3.2. Solution/Mixture
SPECIFIC GRAVITY (H2O=1) 1.22+/-0.04

SECTION 4: FIRST-AID MEASURES

4.1. Description of First-Aid Measures

First-Aid measures after inhalation : Remove victim to fresh air. If persistent breathing troubles, immediately seek medical attention.
 First-Aid measures after skin contact : Rinse immediately with clean water for 20-30 minutes. Remove contaminated clothing and shoes. If on skin, take off contaminated clothing. Get Medical advice/attention.
 First-Aid measures after eye contact : Get medical advice/attention. In case of eye contact, immediately rinse with clean water for 20-30 min.
 First-Aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Call Doctor

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries : The vapour causes slight irritations in eyes, throat and skin. Causes eye and skin burns.

4.3. Indication of any immediate medical attention and special treatment needed

See heading 4.1. An endoscope or a stomach wash might be considered but might cause severe stomach or oesophagus damage.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Suitable extinguishing media : CO2, Powders, Foam, Water Spray
 Unsuitable extinguishing media : Heavy water stream

5.2. Special hazard arising from the substance or mixture

Fire Hazard : Non-Flammable
 Reactivity : Contact with metals produce hydrogen which may form explosive mixtures with air. Reacts with strong bases.

5.3. Advise for Firefighters

Firefighting instructions : Use water spray / fog for cooling
 Protection during firefighting : Wear complete protective anti-acid clothing, gloves and boots. Use self-contained breathing apparatus. See SECTION 8

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures : Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection. Keep public away from danger area. Good ventilation of the workplace required. See Section: 8.2.

6.1.1. For Non-Emergency Personnel : No additional information available

6.1.2. For Emergency Responders : No additional information available

6.2. Environmental precautions : Prevent entry to sewers and surface waters. Prevent entry to sewers and soils.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Transfer in an appropriate container properly labeled in order to set up a future treatment. Neutralize with sodium carbonate, calcium carbonate, or lime. Rinse with plenty of water.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling : Good ventilation of the workplace required. Use suitable material. Follow the exposure limits given on this material safety data sheet. For preference use pumping techniques for unloading and discharging. Waterproof retention basin. Avoid any direct contact with the product. Do not breathe vapours. Never introduce water or any aqueous agent into tanks or containers. Do not subject to Splatters. Always add the product to the water for dilution/mixture. Do not mix with incompatible materials. (See Section 10.5)

Hygiene Measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. When using do not eat, drink, or smoke. Remove contaminated clothes and shoes.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions : Store in dry, cool, well-ventilated area. Do not store under direct sunlight. Store at room temperature above crystallization point.

Incompatible Products : Keep away from Alkalis, Sulfides, Cyanides, and Metal Powders

Packaging Material : Glass, Polyethylene (High Density)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

OSPHO (7664-38-2)		
ACGIH	ACGIH TWA (mg/m ³)	1mg/m ³ - 3mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	1mg/m ³

8.2. Exposure Control

Appropriate Engineering Controls : Used in a closed process (for example in close loop system). Good ventilation of the workplace required. Monitor the atmosphere at regular intervals. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand Protection : Wear chemical protective gloves

Eye Protection : Chemical goggles or face shield with safety glasses

Skin and Body Protection : Wear acid-resistant protective clothing. Wear impervious rubber safety shoes

Respiratory Protection : Vapours or Aerosols: Respiratory protection programs must comply with 29 CFR 1910.134. Use only outdoors or in a well-ventilated area

Environmental Exposure Controls : For preference use pumping techniques for unloading and discharging

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	: Liquid
Appearance	: Slightly Viscous Liquid
Molecular Mass	: 98 g/mol
Colour	: Green
Odour	: Acrid
Odour Threshold	: No Data Available
pH	: <0.5
Evaporation Rate (butylacetate=1)	: No Data Available
Melting Point	: 36%: -17°C 85%: +21.1°C
Freezing Point	: No Data Available
Boiling Point	: 36%: 104°C 85%: 154°C
Flash Point	: Non-Flammable
Auto-ignition Temp	: No Data Available
Decomposition Temp	: No Data Available
Flammability (solid or gas)	: No Data Available
Vapour Pressure	: Not Applicable
Relative Vapour Density at 20°C	: No Data Available
Relative Density	: No Data Available
Density	: (20°C) 36%: 1.225 85%: 1.689
Solubility	: Water: 100%
Viscosity, kinematic	: (25°C) 85%: 23°C
Explosive Properties	: No Data Available
Oxidising Properties	: No Data Available
Explosive Limits	: No Data Available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. **Reactivity:** Contact with metals produce hydrogen which may form explosive mixtures with air. Reacts with strong bases.
- 10.2. **Chemical Stability:** Stable under normal conditions (Handling and Storage)
- 10.3. **Possibility of Hazardous Reactions:** No additional information available
- 10.4. **Conditions to Avoid:** Heat, Light (Daylight)
- 10.5. **Incompatible Materials:** Alkalis, Caustic Products
- 10.6. **Hazardous Decomposition Products:** May liberate toxic gases

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Not Classified

OSPHO (7664-38-2)	
LD50 Oral Rat	2600 mg/kg bodyweight Similar to: OECD 423
LD50 Dermal Rat	No Data Available
LC50 Inhalation Rat (mg/l)	No Data Available

- Skin Corrosion/Irritation** : Causes severe skin burns and eye damage. (pH:<0.5)
- Serious Eye Damage/Irritation** : Not Classified (Irritating to Eyes) (pH:<0.5)
- Respiratory or Skin Sensilisation** : Not Classified (Not Relevant. Corrosive Product)
- Germ Cell Mutagenicity** : Not Classified
- Carcinogenicity** : Not Classified (No Data Available)
- Reproductive Toxicity** : Not Classified
- Specific Target Organ Toxicity (Single Exposure)** : Not Classified
- Specific Target Organ Toxicity (Repeated Exposure)** : Not Classified

OSPHO (7664-38-2)	
NOAEL (Oral, Rat, 90 Days)	250 mg/kg bodyweight/day OECD 422

Aspiration Hazard : Not Classified

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

OSPHO (7664-38-2)	
LC50 Fishes 1	(3-3.25 mg/l (96h) Lepomis Macrochirus
EC50 Daphnia 1	> 100 mg/l (48-Daphnia Magna, OECD 202)
ErC50 (Algae)	> 100 mg/l (72-Desmodesmus Subspicatus, OECD 201)
NOEC (Acute)	100 mg/l (72-Desmodesmus Subspicatus, OECD 201)

12.2. Persistence and Degradability

OSPHO (7664-38-2)	
Persistence and Degradability: Not Applicable	

12.3. Bioaccumulative Potential

OSPHO (7664-38-2)	
Bioaccumulative Potential: Not Applicable	

12.4. Mobility in Soil

OSPHO (7664-38-2)	
Ecology-Soil: No Data Available	

12.5. Other Adverse Effects

- Effects on Ozone Layer:** No known Ecological damage caused by this product
- Effect on Global Warming:** No known Ecological damage caused by this product

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods: Neutralize with Sodium Carbonate, Calcium Carbonate, or Lime. When totally empty, containers are recyclable like any other packing. Storage containers must be free of contamination before use.
Waste Disposal Recommendations: Waste disposal should be in accordance with existing Federal, State, and Local Environmental control laws.

SECTION 14: TRANSPORT INFORMATION

In accordance with DOT

Transport Document Description : UN1805 PHOSPHORIC ACID SOLUTION, 8, III
UN-No. (DOT) : UN1805
Proper Shipping Name (DOT) : PHOSPHORIC ACID SOLUTION
Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive Material 49 CFR 173.136
Hazard Labels (DOT) : 8 - Corrosive



CORROSIVE



IRRITANT

Packing Group (DOT) : III - Minor Danger
DOT Special Provisions (49 CFR 172.102) : A7-Steel packagings must be corrosion-resistant or have protection against corrosion.
 IB3-Authorized IBCs: Metal(31A, 31B and 31N):Rigid Plastics (31H and 31H2):Composite (31HZ1 and 31HA2, 31HB2, 31HD2, 31HN2 and 31HH2). Additional Requirement:Only liquids with a vapourpressure less than equal to 110 kPa at 50°C (1.1 bar at 122°F), or 130kPa at 55°C (1.3 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 packaging which is normally in contact with the hazardous material.
 : T4- 2.65 178.274(d)(2) Normal.....178.275(d)(3)
 : TP1-The maximum degree of filling 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.
DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Quantity Limitations Passenger Aircraft/Rail (49 CFR 173.27): 5L
DOT Quantity Limitations Cargo Aircraft Only (49 CFR 175.75): 60L
DOT Vessel Stowage Location : A-The materia may be stowed "on deck" or "under deck" on a cargo vessel and a passenger vessel.
Other Information : No Supplementary Information Available

ADR

Transport Document Description : UN 1805 PHOSPHORIC ACID, LIQUID, 8, III, (E)
Packing Group (ADR) : III
Class (ADR) : 8 - Corrosive Substance
Hazard Identification Number (Kemler No.) : 80
Classification Code (ADR) : C1
Danger Label (ADR) : 8 - Corrosive Substance
Orange Plates :



CORROSIVE

Tunnel Restriction Code (ADR) : E
Excepted Quantities (ADR) : E1

Transport By Sea

UN-No. (IMDG) : 1805
Class (IMDG) : 8 - Corrosive Substance
Packing Group (IMDG) : III, Substances presenting low danger
MFAG-No : 154

Air Transport

UN-No. (IATA) : 1805
Class (IATA) : 8 - Corrosives
Civil Aeronautics : Corrosive substances (Hazardous Materials notice Appended Table 1, Article 194 of the Enforcement Regulations)

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

OSPHO (7664-38-2)
Listed on the United States TSCA (Toxic Substance Control Act) Inventory
SARA Section 302 Threshold Planning Quantity (TPQ): Not Applicable
SARA Section 311/312 Hazard Classes : Immediate (acute) Health Hazard
SARA Section 313 - Emission Reporting : Not Applicable

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Acide Orthophosphorique	CAS No. 7664-38-2	80.00%
-------------------------	-------------------	--------

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR 372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International Regulations

Canada

OSPHO (7664-38-2)
Listed on the Canadian NDSL (Non-Domestic Substances List)
WHMIS Classification : Class E - Corrosive Material

EU - Regulations: No Additional Information Available
 Classification according to Regulation (EC) No.1272/2008 (CLP)
 Skin Corr. 1B H314
 Full Text of H-Phrases: see Section 16
 Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC (DPD): Not Classified

15.2.2. National Regulations

OSPHO (7664-38-2)
CERCLA reportable quantities: 5,000 lbs.
ANSI/NSF Std.60 - potable water systems: Certified
US Food & Drug Admin: Recognized as Generally Recognized
Hazardous chemical under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910,1200), Appendix A: Corrosive

15.3. US State Regulations

California Proposition 65 - The product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: OTHER INFORMATION

Revision Date: May, 10 2019
Data Sources: Reach Dossier

Abbreviations and Acronyms:

- ADN: European Agreement concerning international carriage of Dangerous goods by Inland Waterways
- ADR: European Agreement concerning international carriage of Dangerous goods by Road
- AF: Assessment factor
- BCF: Bioconcentration factor
- Bw: Body weight
- CAS: Chemical Abstracts Service
- CLP: Classification, labeling, packaging
- CSR: Chemical Safety Report
- DMEL: Derived maximum effect level
- DNEL: Derivative no effect level
- EC: European Community
- ELV: Emission limit values
- EN: European Norm
- EUH: European Hazard Statement
- EWC: European Waste catalogue
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organization
- IMDG: International Maritime Dangerous Goods
- LC50: Median lethal concentration
- LD50: Median lethal dose
- NOAEL: No-observed-adverse-effect-level

Abbreviations and Acronyms Cont.

NOEC: No observed effect concentration
NOEL: No observed level
OEL: Operator exposure level
PBT: Persistent, bioaccumulative, Toxic
PEC: Predicted Effect level
PNEC: Predicted No. effect Concentration
REACH: Registraion, evaluation and autorisation of chemicals
RID: Regulations concerning the international carriage of dangerous goods by rail
STEL: Short Term Exposure Limit
TWA: Time weighted average
vPvB: Very persistant, very bioaccumulative
VOC: Volatile organic compound

Full Text of H-Phrases:

Skin Corr. 1B: Skin corrosion / irritation, Category 1B

H314: Causes severe skin burns and eye damage

NFPA Health Hazard: 2 - Intense or continued but not chronic to exposure could cause temporary incapacitation or possible residual injury.
NFPA Fire Hazard: 0 - Materials that will not burn.
NFPA Reactivity: 0 - Normally stable, even under fire exposure conditions and are not reactive with water



HMIS



SDS US (GHS HazCom 2012)

This Information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. **DISCLAIMER OF THE LIABILITY.** The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.