

# OSPHO METAL TREATMENT

## SAFETY DATA SHEET

### SECTION 1: Identification

#### 1.1. Product identifier

Product form : SOLUTION/MIXTURE  
Trade name : OSPHO  
Chemical name : Orthophosphoric acid  
CAS No : 7664-38-2  
Product code : N/A  
Formula : H<sub>3</sub>PO<sub>4</sub>  
Synonyms : ORTHOPHOSPHORIC ACID  
REACH registration No. : 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 Avenue  
Cleveland, Ohio 44114-4689  
SDS Preparer: Stephen L. Pitcher  
Date: May 25, 2015

#### 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 or mixture

GHS-US classification

Skin Corr. 1B H314

Full text of H-phrases: see section 16

VOC = 0%

#### 2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



CORROSIVE



IRRITANT

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US)

: 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

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P310 - Immediately call a POISON CENTER, 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 (H<sub>2</sub>O = 1) 1.22 +/- .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 minutes.
- First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. Call a 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 : CO<sub>2</sub>. Powders. Foam. Water spray.

Unsuitable extinguishing media : Heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Reactivity : Contact with metals produces hydrogen which may form explosive mixtures with air. Reacts with strong bases.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray/fog for cooling.

Protection during firefighting : Wear complete protective anti-acid clothings, gloves and boots. Use self-contained breathing apparatus. 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(s) :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 soil.

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### 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 labelled in order to set up a future treatment. Neutralize with sodium carbonate, calcium carbonate, or lime. Rinse with plenty of water.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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 clothing 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 sun light. Store at room temperature above crystallization point.

### Incompatible products

: Keep away from alkalis, sulfides, cyanides and metal powders.

### Packaging materials

: Stainless steel. glass. Polyethylene (high density).

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

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

### 8.2. Exposure controls

Appropriate engineering controls : Use in 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	: < 1.5
Relative 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

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Flash point	: Not flammable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, 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 %
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: (25°C) 85%: 23°C
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Contact with metals produces 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. Non noble metals.

### 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: < 1.5

Serious eye damage/irritation : Not classified  
(Irritating to eyes.)  
pH: < 1.5

Respiratory or skin sensitisation : Not classified  
(Not relevant. Corrosive product)

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified  
(No data available.)

Reproductive toxicity : Not classified



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Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

<b>OSPHO (7664-38-2)</b>	
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight/day OECD 422

Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

<b>OSPHO (7664-38-2)</b>	
LC50 fishes 1	(3 - 3,25 mg/l (96h) <i>Lepomis macrochirus</i> )
EC50 Daphnia 1	> 100 mg/l (48 - <i>Daphnia magna</i> , OECD 202)
ErC50 (algae)	> 100 mg/l (72 - <i>Desmodesmus subspicatus</i> , OECD 201)
NOEC (acute)	100 mg/l (72 - <i>Desmodesmus subspicatus</i> , OECD 201)

#### 12.2. Persistence and degradability

<b>OSPHO (7664-38-2)</b>	
Persistence and degradability	Not applicable.

#### 12.3. Bioaccumulative potential

<b>OSPHO (7664-38-2)</b>	
Bioaccumulative potential	Not applicable.

#### 12.4. Mobility in soil

<b>OSPHO (7664-38-2)</b>	
Ecology - soil	No data available.

#### 12.5. Other adverse effects

Effect on ozone layer :

Effect on the global warming : No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

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 : This material when discarded in pure form is not a hazardous waste as defined by 40 CFR 261, the Resource Conservation and Recovery Act (RCRA). Dry materials may be landfilled or recycled in accordance with local, state, and federal regulations. If materials have become contaminated with other substances, dispose of in accordance with local, state, and federal regulations.

### 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



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Packing group (DOT) : III - Minor Danger

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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 (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa 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 =  $97 / (1 + a (t_r - t_f))$  Where:  $t_r$  is the maximum mean bulk temperature during transport, and  $t_f$  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) : 5 L  
 DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

### Additional information

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 substances  
 Hazard identification number (Kemler No.) : 80  
 Classification code (ADR) : C1  
 Danger labels (ADR) : 8 - Corrosive substances



CORROSIVE

### Orange plates



Tunnel restriction code (ADR) : E  
 Excepted quantities (ADR) : E1

### Transport by sea

UN-No. (IMDG) : 1805  
 Class (IMDG) : 8 - Corrosive substances  
 Packing group (IMDG) : III - substances presenting low danger  
 MFAG-No : 154

### Air transport

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

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### SECTION 15: Regulatory Information

#### 15.1. US Federal regulations

OSPHO (7664-38-2)		
Listed on the United States TSCA (Toxic Substances 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 : 5,000lbs	
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 - This 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 : 5/25/2015  
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, labelling, 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  
 NOEC : No observed effect concentration  
 NOEL : No observed effect level  
 OEL : Operator exposure level  
 PBT: Persistent, bioaccumulative, Toxic  
 PEC : Predicted effect level  
 PNEC: Predicted No effect Concentration  
 REACH : Registration, 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 persistent, 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 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.



### SDS US (GHS HazCom 2012)

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HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	H

HMIS