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	: H3PO4
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

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 (H2O = 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 consclous). 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 : CO2. 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.

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/m³)	1 mg/m³ - 3mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³

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

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

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

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

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 (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 (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)	: 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)

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 : Volitile 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 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

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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