



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA

Revision date 28-Jul-2020

Supersedes Date: 09-Feb-2017

Revision Number 14.1

1. Identification

Product identifier

Product Name Phosphoric acid 25-93%, food grade

Other means of identification

Product Code(s) 5153

UN/ID no. UN1805

Synonyms orthophosphoric acid

Recommended use of the chemical and restrictions on use

Recommended use

- Food additive
- Chemical intermediate
- Laboratory chemicals
- Corrosion inhibitor
- pH-corrective agent
- Processing aid
- Fertilizer
- Metal surface treatment
- Descalers
- Degreasing agent

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

ICL
622 Emerson Road - Suite 500
St. Louis, Missouri 63141, USA
Tel:(314)983-7884 Fax:(314)983-7607
e-mail:msdsinfo@icl-group.com

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)

Not Applicable

Label elements**Signal word**

Danger

Hazard statements

Harmful if swallowed

Causes severe skin burns and eye damage

May be corrosive to metals

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dusts or mists

Wear protective gloves/protective clothing/eye protection/face protection

Keep only in original container

Precautionary Statements - Response Immediately call a POISON CENTER or doctor

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Immediately call a POISON CENTER or doctor

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Do NOT induce vomiting

Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store locked up

Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Harmful to aquatic life

3. Composition/information on ingredients**Substance**

Chemical name	CAS No.	Weight-%
phosphoric acid	7664-38-2	25-93

4. First-aid measures**Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Ingestion	Clean mouth with water and drink afterwards plenty of water Never give anything by mouth to an unconscious person Do NOT induce vomiting Get immediate medical advice/attention
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. .

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically and supportively.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Full water jet.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. .
Hazardous combustion products	Phosphorus oxides.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. neutralize. .

Environmental precautions Dilute with plenty of water. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Keep containers tightly closed. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. .

Conditions for safe storage, including any incompatibilities

Storage Conditions Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Keep container tightly closed in a dry and well-ventilated place. Use polyolefine receptacles. Provide acid-resistant floor. Suitable container/equipment material. stainless steel. Recommended storage temperature between
93%: +35 - +42 °C
85%: +28 - +42 °C
80%: +15 - +42 °C.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
phosphoric acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Protective gloves

Gloves Break through time of gloves >=8h
Nitrile rubber (0.4 mm)
Butyl rubber
Natural rubber
Fluorocarbon rubber (Viton)
Neoprene gloves
Polychloroprene (0.5 mm)
Unsuitable protective clothing
Leather gloves

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. In case of

insufficient ventilation, wear suitable respiratory equipment.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid
Appearance aqueous solution
Color Colourless
Odor Odorless

Property	Values	Remarks • Method
pH	<1	
Melting point / freezing point	-18 - +27°C (75-93%)	
Boiling point / boiling range	108-171 (50-93%) °C / 226-340 (50-93%) °F	
Flash point	no data available	None known
Evaporation rate	no data available	None known
Flammability (solid, gas)	Not flammable .	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	no data available	
Lower flammability or explosive limits	no data available	
Vapor pressure	4 Pa	
Vapor density	3,4 (air = 1)	
Relative density	1574-1791 g/cm ³ (20°C)	75-93%
Water solubility	>1000 g/l @ 20°C	
Solubility in other solvents	no data available	None known
Partition coefficient	no data available	None known
Autoignition temperature	no data available	None known
Decomposition temperature	>200 °C	
Kinematic viscosity	no data available	None known
Dynamic viscosity	1,1-600 mPa s (5-105%)	

Other information

Oxidizing properties Not oxidising
Explosive properties Not explosive

10. Stability and reactivity

Reactivity Corrosive to metals. Reacts with reducing agents. Reacts with alkalis. Ammonia. Fluorine. Sulfur oxides.

Chemical stability Stable under normal conditions. .

Possibility of Hazardous Reactions Contact with metals may evolve flammable hydrogen gas. .

Conditions to avoid To avoid thermal decomposition, do not overheat. .

Incompatible materials Alkali. Metals.

Hazardous decomposition products Phosphorus oxides.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Pulmonary edema can be fatal.
Eye contact	Causes burns. Corrosive to the eyes and may cause severe damage including blindness.
Skin contact	Causes burns.
Ingestion	Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Acute toxicity

Numerical measures of toxicity

Component information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
phosphoric acid 7664-38-2	3500 mg/kg (Rat)	>1260 mg/kg (rabbit)	> 850 mg/m ³ (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Causes severe burns.
Serious eye damage/irritation	Risk of serious damage to eyes.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	Not mutagenic in several in vitro assays.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen

Chemical name	ACGIH	IARC	NTP	US OSHA
phosphoric acid 7664-38-2	-	-	-	-

Reproductive toxicity	Based on available data, the classification criteria are not met. NOAEL ≥500 mg/kg bw/day (rat, oral).
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Target organ effects	Respiratory system, Eyes, Skin.

Aspiration hazard Not expected.

12. Ecological information

Ecotoxicity .

Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
phosphoric acid 7664-38-2	EC50: >100 mg/L (72h)	LC50: 138 mg/L (96h, Mosquitofish)	EC50: > 100 mg/L 48h > 100 mg/L (72h, desmodesmus subspicatus)	EC50: >1000 mg/L (Activated sludge, 3h)

Persistence and degradability Not relevant for inorganic salts.

Bioaccumulation Bioaccumulation is not likely to occur since this material is highly soluble in water. Phosphoric acid dissociates in water into phosphate anions, which are ubiquitous in the environment and an essential component of the body.

Component information

Chemical name	Partition coefficient
phosphoric acid 7664-38-2	-2

Mobility No information available.

Other adverse effects The product should not get in high quantities into waste water because it may act as a plant nutrient and cause eutrophication. Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Observe all federal, state and local environmental regulations when disposing of this material.

Contaminated packaging Empty containers should be disposed of in accordance with all applicable laws and regulations.

14. Transport information

DOT

UN/ID no.	UN1805
Proper shipping name	Phosphoric acid solution
Hazard class	8
Packing group	III
Reportable Quantity (RQ)	Phosphoric acid: RQ kg= 2270.00
Description:	UN1805, Phosphoric acid solution, 8, III, RQ

Emergency Response Guide
Number

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TDG

UN/ID no. UN1805
Proper shipping name Phosphoric acid, solution
Hazard class 8
Packing group III
Description: UN1805, Phosphoric acid, solution, 8, III

MEX

UN/ID no. UN1805
Proper shipping name Phosphoric acid, solution
Hazard class 8
Packing group III
Description: UN1805, Phosphoric acid, solution, 8, III

IATA

UN number UN1805
UN proper shipping name Phosphoric acid, solution
Transport hazard class(es) 8
Packing group III
Special precautions None
Description: UN1805, Phosphoric acid, solution, 8, III

IMDG

UN number UN1805
UN proper shipping name Phosphoric acid solution
Transport hazard class(es) 8
Packing group III
EmS-No. F-A, S-B
Special precautions None
Description: UN1805, Phosphoric acid solution, 8, III

15. Regulatory information

International Inventories

GHS hazardous component CAS registry numbers appearing in section 3 may differ from substances appearing in section 15 due to country or regional chemical inventory coverage requirements, however, remain in compliance with the inventory
Products that are used as food additives are exempt from listing in international chemical inventories

Chemical name	TSCA Inventory List Active/Inactive
phosphoric acid 7664-38-2 (25-93)	Present (ACTIVE)

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AICS	Listed or exempted
NZIoC	Listed or exempted
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Listed or exempted
NSQ	Listed or exempted

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory
NCI - Vietnam National Chemicals Inventory
TECI - Thailand Inventory FDA Existing Chemicals
NSQ - Mexico National Inventory of Chemical Substances

US Federal Regulations

Chemical name	U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
phosphoric acid - 7664-38-2	-

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
phosphoric acid 7664-38-2	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
phosphoric acid 7664-38-2	5000 lb	-

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

US State Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
phosphoric acid - 7664-38-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. Other information

NFPA	Health hazards 4	Flammability 0	Instability 0	Physical and chemical properties -
HMIS	Health hazards 4	Flammability 0	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AELG(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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Revision Note The symbol (*) in the margin of this SDS indicates that this line has been revised.

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End of Safety Data Sheet