



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

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Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	o-Phosphoric acid
Cat No.	A242-1; A242-4; A242-212; A242-500; A242P-4; A242SK-212; A260-500; A365-1; A365-4; A366-4
Synonyms	Orthophosphoric acid; Phosphoric acid
Recommended Use	Laboratory chemicals
Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Causes burns by all exposure routes. Hygroscopic.

Appearance Clear

Physical State viscous liquid, Liquid

odor odorless

Target Organs

Skin, Respiratory system, Eyes, Gastrointestinal tract (GI)

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

Causes burns.

Skin

Causes burns. May be harmful in contact with skin.

Inhalation

Causes burns. May be harmful if inhaled.

Ingestion

Causes burns. May be harmful if swallowed.

Chronic Effects

None known.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions

Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Phosphoric acid	7664-38-2	>/= 85
Water	7732-18-5	</= 15

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	Not applicable
Method	No information available.
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 3 **Flammability** 0 **Instability** 0 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling	Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors/dust. Do not ingest.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures	Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
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Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Phosphoric acid	TWA: 1 mg/m ³ STEL: 3 mg/m ³	(Vacated) TWA: 1 mg/m ³ (Vacated) STEL: 3 mg/m ³ TWA: 1 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Phosphoric acid	TWA: 1 mg/m ³ STEL: 3 mg/m ³	TWA: 1 mg/m ³ STEL: 3 mg/m ³	TWA: 1 mg/m ³ STEL: 3 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	viscous liquid, Liquid
Appearance	Clear
odor	odorless
Odor Threshold	No information available.
pH	1
Vapor Pressure	2 hPa @ 20°C
Vapor Density	No information available.
Viscosity	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Range	158°C / 316.4°F
Melting Point/Range	21°C / 69.8°F
Decomposition temperature	300 °C
Flash Point	Not applicable
Evaporation Rate	No information available.
Specific Gravity	1.680
Solubility	No information available.
log Pow	No data available
Molecular Weight	98
Molecular Formula	H3 O4 P

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions. Hygroscopic.
Conditions to Avoid	Incompatible products. Excess heat. Exposure to moisture.
Incompatible Materials	Strong oxidizing agents, Metals, Bases, Alcohols, Amines, halogenated agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Oxides of phosphorus
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	Contact with metals may evolve flammable hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phosphoric acid	1530 mg/kg (Rat)	2730 mg/kg (Rabbit)	850 mg/m ³ (Rat) 1 h

Irritation	Causes burns by all exposure routes
Toxicologically Synergistic Products	No information available.
Chronic Toxicity	
Carcinogenicity	There are no known carcinogenic chemicals in this product
Sensitization	No information available.
Mutagenic Effects	No information available.

Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
Other Adverse Effects	See actual entry in RTECS for complete information.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Phosphoric acid	Not listed	3 - 3.5 mg/L LC50 96 h	Not listed	4.6 mg/L EC50 = 12 h

Persistence and Degradability	No information available
Bioaccumulation/ Accumulation	No information available
Mobility	No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT

UN-No	UN1805
Proper Shipping Name	PHOSPHORIC ACID SOLUTION
Hazard Class	8
Packing Group	III

TDG

UN-No	UN1805
Proper Shipping Name	PHOSPHORIC ACID SOLUTION
Hazard Class	8
Packing Group	III

IATA

UN-No	1805
Proper Shipping Name	PHOSPHORIC ACID, SOLUTION

14. TRANSPORT INFORMATION

Hazard Class 8
Packing Group III

IMDG/IMO

UN-No 1805
Proper Shipping Name PHOSPHORIC ACID SOLUTION
Hazard Class 8
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Phosphoric acid	X	X	-	231-633-2	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Phosphoric acid	X	5000 lb	-	-

Clean Air Act
Not applicable

OSHA
Not applicable

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)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Phosphoric acid	5000 lb	-

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Phosphoric acid	X	X	X	-	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
E Corrosive material



16. OTHER INFORMATION

Prepared By Regulatory Affairs
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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS