

SAFETY DATA SHEET

Creation Date 19-October-2009

Revision Date 18-January-2018

Revision Number 4

1. Identification

Product Name PHOSPHORIC ACID

Cat No. : A260-500

CAS-No 7664-38-2
Synonyms Orthophosphoric acid

Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Importer/Distributor
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Manufacturer

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. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Corrosive to metals	Category 1
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word

Danger

Hazard Statements

May be corrosive to metals
Causes severe skin burns and eye damage

**Precautionary Statements****Prevention**

Keep only in original container

Wash face, hands and any exposed skin thoroughly after handling

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

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

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

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/doctor

If experiencing respiratory symptoms: Call a POISON CENTER/doctor

Wash contaminated clothing before reuse

Absorb spillage to prevent material damage

Storage

Store in a well-ventilated place. Keep container tightly closed

Store in corrosive resistant polypropylene container with a resistant inliner

Disposal

Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Orthophosphoric 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 soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. Obtain medical attention.
Ingestion	Drink plenty of water. Never give anything by mouth to an unconscious person. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Call a physician or Poison Control Center immediately.
Most important symptoms/effects	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Unsuitable Extinguishing Media	No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits

Upper No data available
Lower No data available

Oxidizing Properties Not applicable

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.

Hazardous Combustion Products

Oxides of phosphorus

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 1	Physical hazards N/A
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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 Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Use only under a chemical fume hood. Ensure adequate ventilation. 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

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
Orthophosphoric 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	TWA: 1 mg/m ³ STEL: 3 mg/m ³	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

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
 OSHA - Occupational Safety and Health Administration
 NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

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.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Butyl rubber	> 480 minutes	0.36 mm	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: Particulates filter conforming to EN 143 Acid gases filter Type E Yellow conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear, Viscous
Odor	Odorless
Odor Threshold	No information available
pH	< 2
Melting Point/Range	21 °C / 69.8 °F
Boiling Point/Range	158 °C / 316.4 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	2 hPa @ 20°C
Vapor Density	3.4
Specific Gravity	1.680
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	300 °C

Viscosity 3.86 mPas @ 20°C

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability 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 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

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Orthophosphoric acid	2600 mg/kg (Rat)	LD50 = 2740 mg/kg (Rabbit)	850 mg/m ³ (Rat) 1 h
Water	-	Not listed	Not listed

Toxicologically Synergistic Products No information available

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

Irritation Causes burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Orthophosphoric acid	7664-38-2	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Orthophosphoric acid	Not listed	98 - 106 mg/L LC50 96 h	Not listed	> 100 mg/L EC50 = 48 h

Persistence and Degradability Miscible with water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation Does not bioaccumulate.

Mobility Will likely be mobile in the environment due to its water solubility.

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 UN1805
 Proper Shipping Name PHOSPHORIC ACID, SOLUTION
 Hazard Class 8
 Packing Group III

IMDG/IMO

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

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

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

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	19-October-2009
Revision Date	18-January-2018
Print Date	18-January-2018
Revision Summary	This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

End of SDS