



Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 19-Oct-2009

Revision Date 28-Oct-2014

Revision Number 1

1. Identification

Product Name PHOSPHORIC ACID

Cat No. : A242-1; A242-4; A242-212; A242-500; A242P-4; A242-P500;
A242SK-212; A242SK-212LC

Synonyms Orthophosphoric acid

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

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. Hazard(s) identification

Classification

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

| | |
|--|--------------|
| Corrosive to metals | Category 1 |
| Skin Corrosion/irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

Label Elements

Signal Word

Danger

Hazard Statements

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

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Use only outdoors or in a well-ventilated area
 Keep only in original container

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

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

Eyes

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

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Spills

Absorb spillage to prevent material damage

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed
 Store in corrosive resistant polypropylene container with a resistant inliner
 Store in a dry place

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

3. Composition / information on ingredients

| 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 soap and plenty of water while removing all contaminated clothes and shoes. 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 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: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated |
| 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 | Not applicable |
| 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
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 | Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information. |

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 | 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 |

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.

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|--|--------------------------|
| Physical State | Liquid |
| Appearance | Clear, Viscous |
| Odor | Odorless |
| Odor Threshold | No information available |
| pH | 1 |
| Melting Point/Range | 21 °C / 69.8 °F |
| Boiling Point/Range | 158 °C / 316.4 °F |
| Flash Point | Not applicable |
| 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 |
| Relative Density | 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 |
|-----------------|------------------|---------------------|---------------------------------|
| Phosphoric acid | 2600 mg/kg (Rat) | 2740 mg/kg (Rabbit) | 850 mg/m ³ (Rat) 1 h |

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 |
|-----------------|-----------|------------|------------|------------|------------|------------|
| Phosphoric 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 Respiratory system

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: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

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.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-----------|------------------|-----------------|----------|------------|
| | | | | |

| | | | | |
|-----------------|------------|-------------------------|------------|------------------------|
| Phosphoric 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 No information available.

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

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | 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 Occupational Safety and Health Administration
 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 |
| Water | - | - | 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

Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

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 SDS