SAFETY DATA SHEET

Preparation Date: 05/29/2015 **Revision Date:** 05/29/2015 **Revision Number:** G1

Product identifier

Product code: PH175
Product Name: PHOSPHORIC ACID, NF

Other means of identification

Synonyms: Orthophosphoric acid, 85%
CAS #: 7664-38-2
RTECS # TB6300000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Acidifying agent.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS 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
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May be corrosive to metals

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

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 dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see .? on this label)
Absorb spillage to prevent material damage
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/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Phosphoric Acid 85% 7664-38-2	7664-38-2	85-88	*
Water 7732-18-5	7732-18-5	12-15	*

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. Skin contact may result in redness, pain, inflammation, itching, scaling. Inflammation of the eye is characterized by redness, watering and itching. Harmful if swallowed. Coughing and wheezing. Choking sensation. Dyspnea (Shortness of breath and difficulty breathing).

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Phosphorus oxides

Specific hazards: Nonflammable
Contact with metals may evolve flammable hydrogen gas
Fomation of flammable gases with aldehydes, cyanides, mercaptins, and sulfides

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk.

Methods for cleaning up Neutralize with Sodium carbonate or Sodium bicarbonate. Dilute with water. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. May corrode metallic surfaces. Do not store in uncoated metallic containers. Store away from incompatible materials. Store in a segrated and approved area.

Incompatible Materials:
Oxidizing agents. Combustible materials. Metals. Alkalis. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Phosphoric Acid 85% - 7664-38-2	1 mg/m³ TWA	1 mg/m³ TWA 3 mg/m³ STEL	3 mg/m³ STEL 1 mg/m³ TWA	None
Water - 7732-18-5	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Phosphoric Acid 85% - 7664-38-2	1 mg/m³ TWA 3 mg/m³ STEL	1 mg/m³ TWA 3 mg/m³ STEL	1 mg/m³ TWA	1 mg/m³ TWAEV 3 mg/m³ STEV
Water - 7732-18-5	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Phosphoric Acid 85% 7664-38-2	3 mg/m³ STEL 1 mg/m³ TWA	1 mg/m³ TWA 3 mg/m³ STEL
Water 7732-18-5	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Face-shield

Skin and body protection: Chemical resistant protective suit. Gloves. boots.

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Liquid	**Appearance:** Syrupy. Viscous.	**Color:** Clear. Colorless.
Odor: Odorless.	**Taste** Acid.	**Molecular/Formula weight:** 98.00
Formula: H3PO4	**Flammability:** No information available	**Flash point (°C):** No data available
Flashpoint (°C/°F): No information available.	**Flash Point Tested according to:** Not available	**Lower Explosion Limit (%):** No information available
Upper Explosion Limit (%): No information available	**Autoignition Temperature (°C/°F):** No information available	**pH:** No information available
Melting point/range(°C/°F): 21°C/ 69.8°F	**Boiling point/range(°C/°F):** 158°C/ 316°F	**Decomposition temperature(°C/°F):** No information available
Bulk density: No information available	**Specific gravity:** 1.685	**Vapor pressure @ 20°C (kPa):** 0.3
Density (g/cm3): No information available	**Evaporation rate:** No information available	**Vapor density:** 3.4
VOC content (g/L): No information available	**Odor threshold (ppm):** No information available	**Partition coefficient (n-octanol/water):** No information available
Viscosity: No information available	**Miscibility:** No information available	**Solubility:** Easily soluble in hot water Soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents, combustible materials, metals, alkalis
Evolves flammable hydrogen gas on contact with metals
Incompatible with sodium tetrahydroborate producing a violent exothermic reaction.
Heat generated with: alcohols, glycols, aldehydes, amides, amines, azo-compounds, carbamates, caustics, esters, ketones, phenols and cresols, organophosphates, epoxides, combustible materials, unsaturated halides, organic peroxides.
Formation of flammable gases, with aldehydes, cyanides, mercaptins, and sulfides.
Formation of toxic fumes with cyanides, fluorides, halogenated organics, sulfides, and organic peroxides.
Do not mix with solutions containing bleach or ammonia.
Incompatible with nitromethane, chlorides + staiinless steel.

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials.

Incompatible Materials: Oxidizing agents. Combustible materials. Metals. Alkalis. Bases.

Hazardous decomposition products: Phosphorus oxides.

Other Information

Corrosivity: Extremely corrosive in presence of copper
Extremely corrosive in the presence of stainless steel (316)
Extremely corrosive in the presence of stainless steel (304)
Highly corrosive in presence of aluminum
Non-corrosive in the presence of glass

Special Remarks on Corrosivity: Minor corrosive effect on bronze Severe corrosive effect on brass Corrosive to ferrous metals and alloys

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

Phosphoric Acid 85% - 7664-38-2

LD50/oral/rat = 1530 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = 2730 mg/kg Dermal LD50Rabbit
LC50/inhalation/rat = 850 mg/m^3 Inhalation LC50 Rat 1 h
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Water - 7732-18-5

LD50/oral/rat = > 90 mL/kg Oral LD50 Rat

LD50/oral/mouse = No information available
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Corrosive. Contact causes severe skin irritation and possible burns. May affect behavior (somonlence or excitment) if absorbed through skin.

Eye Contact: Corrosive. Liquid or vapor causes severe eye irritation and can cause severe eye burns leading to permanent corneal damage or chemical conjunctivtis.

Inhalation Causes irritation or possible burns of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath and pulmonary edema. It may also affect the liver.

Ingestion Harmful if swallowed. Causes irritation of the digestive tract (mouth, throat (oropharyngeal mucosa), esophagus, stomach). Can cause corrosion (burns) and permanent tissue destruction of digestive tract. Causes severe abdominal pain, nausea, vomiting (sometimes bloody), diarrhea (sometimes watery and bloody), gastrointestinal hemmorrhaging, hypotension, and shock. May affect behavior (seizures, coma) and urinary system (scanty urine), liver (hepatocellular damage, hepatic enzymes increased), blood (blood dyscrasia). May also cause aspiration pneumonitis, acute pulmonary edema, Hypocalcemia, Hyperphosphatemia or Hypophosphatemia, Hypomagnesemia, and acidosis..

Aspiration hazard No information available

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

Chronic Toxicity Skin: Prolonged or repeated skin contact may cause drying and cracking of the skin, which can lead to secondary infections or dermatitis, an allergic reaction.
Ingestion: Prolonged or repeated ingestion will have similiar effects as acute ingestion. It may also affect the brain. Prolonged or repeated eye contact can cause conjunctivitis. Repeated exposure may cause bronchitis to develop with cough, phlegm, and /or shortness of breath.

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Phosphoric Acid 85%	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Lungs. Respiratory system. Skin. Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Phosphoric Acid 85% - 7664-38-2
Freshwater Fish Species Data: 3 - 3.5 mg/L LC50 Gambusia affinis 96 h 1
Water Flea Data: 4.6 mg/L EC50 Daphnia magna 12 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Phosphoric Acid 85%	None	None	None	None
Water	None	None	None	None

14. TRANSPORT INFORMATION

DOT
UN-No: UN1805
Proper Shipping Name: Phosphoric acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG No: 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): R5

TDG (Canada)
UN-No: UN1805

14. TRANSPORT INFORMATION

Proper Shipping Name: Phosphoric acid, solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN1805
Proper Shipping Name: Phosphoric acid, solution
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1805
Proper Shipping Name: Phosphoric acid solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1805
Proper Shipping Name: Phosphoric acid, solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1805
Proper Shipping Name: Phosphoric acid, solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN1805
Proper Shipping Name: Phosphoric acid, solution
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Phosphoric Acid 85%	Present	Present KE-27427	Present	Present (1)-422	Present	Present	Present 231-633-2
Water	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2

U.S. Regulations

Phosphoric Acid 85%

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1516
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
100 lb RQ
Louisana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 182.1073

FDA - 21 CFR - Total Food Additives 133.123 133.124 133.129 133.169 133.173 133.178 133.179 163.110 163.111 163.112 175.300 177.2260 178.1010 178.3520 182.1073 73.275 73.85

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Phosphoric Acid 85%	Not Listed	Not Listed	Not Listed	Not Listed
Water	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Phosphoric Acid 85%	5000 lb final RQ 2270 kg final RQ	None	None	None	None
Water	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Phosphoric Acid 85%	Not Applicable	Not Applicable
Water	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
E Corrosive material

Phosphoric Acid 85%

E including <=85%

Water

Uncontrolled product according to WHMIS classification criteria

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Phosphoric Acid 85%	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Phosphoric Acid 85%	Present	Not Listed
Water	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Phosphoric Acid 85%	Not listed	Not listed
Water	Not listed	Not listed

EU Classification

R-phrase(s)

R34 - Causes burns.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 1/2 - Keep locked up and out of the reach of children.

Components	Classification	Concentration Limits:	Safety Phrases
Phosphoric Acid 85%	C; R34	25%<=C: C; R34 10%<=C<25%: Xi; R36/38	S1/2 S26 S45
Water		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive.

16. OTHER INFORMATION

Preparation Date: 05/29/2015
Revision Date: 05/29/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet