Safety Data Sheet
IHP Phosphoric Acid

SECTION 1: Identification

1.1 Product identifier

Product name	IHP Phosphoric Acid
Substance name	Phosphoric acid liquid
EC no.	231-633-2
CAS no.	7664-38-2

1.2 Other means of identification

IHP Phosphoric Acid is an odorless, hazy green clear liquid.

1.3 Recommended use of the chemical and restrictions on use

Phosphoric acid is used in fertilizers, detergents, foods, beverages, rustproofing metals and water treatment. Avoid contact with strong caustics and metals. Contact with strong caustics can cause liberation of much heat and violent spattering. Contact with most metals causes formation of flammable and explosive hydrogen gas. Do not mix with solutions conatining bleach or amonia.

1.4 Supplier's details

Name	JDCDevelopment, LLC
Address	3200 CR 630 West Fort Meade, FL 33841 USA
Telephone	863-285-8607
Fax	863-285-8504
email	info@jdcphosphate.com

1.5 Emergency phone number(s)

Chemtrec
800-424-9300
CCN698080
Outside USA & Canada 703-527-3887

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with OSHA (29 CFR 1910.1200)

- Skin corrosion/irritation (chapter 3.2), Cat. 1B
- Corrosive to metals (chapter 2.16), Cat. 1

- Eye damage/irritation (chapter 3.3), Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word	**Danger**

Hazard statement(s)

H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary statement(s)

P234	Keep only in original container.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P390	Absorb spillage to prevent material damage.
P406	Store in a corrosive resistant/… container with a resistant inner liner.

2.3 Other hazards which do not result in classification

Liquid phosphoric acid will attack some forms of plastics, rubber, and coatings.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Substance name	Phosphoric acid liquid
EC no.	231-633-2
CAS no.	7664-38-2
Formula	H3PO4
Molecular weight	98

Hazardous components

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Avoid contact of phosphoric acid with skin, inhalation or injestion. Phosphoric acid can affect the body if it is inhaled or if it comes in contact with the eyes or skin. It can also affect the body if swallowed. Phosphoric acid mist is an irritant to the eyes, uper respirtaory tract, and skin.
If inhaled	If the person breathes in large amounts of phosphoric acid, move the person to fresh air at once. If breathing is stopped, perform artificial respiration. If breathing is difficult, administer oxygen if available. Keep the affected person warm and at rest. Get medical attention as soon as possible.

In case of skin contact	If phosphoric acid gets on the skin, immediately flush the contaminated skin with water. Rinse for at least 15 minutes. If phosphoric soaks through the clothing, remove the clothing immediately and flush the skin with water.
In case of eye contact	If phosphoric acid gets into the eyes, wash eyes immediately with large amounts of water, lifting the lower and upper lids occasionally. Rinse for at least 15 minutes. Get medical attention immediately. Contact lenses should not be worn when workng with this chemical.
If swallowed	When phosphoric acid has been swallowed and the person is conscious, give the person 2-3 glasses of water immediately. Do not induce vomiting. Do not make an unconscious person vomit. Get medical attention immediately.
Personal protective equipment for first-aid responders	Ensure that first responders and medical personnel are aware of the hazards for phosphoric acid and take precautions to protect themselves. Persons attending the victim should avoid contact with heavily contaminated clothing and vomitus. Wear impervious gloves while decontaminating skin and hair.

4.2 Most important symptoms/effects, acute and delayed
Symptoms after inhalation - Coughing. Dry or sore throat. Irritation of the respiratory tract or nasal mucous membranes. Respiratory difficulties.
Symptoms after skin contact - Caustic burns/corrosion of the skin.
Symptoms after eye contact - Corrosion of the eye tissue.
Symptoms after ingestion - Burns to the gastric/intestional mucosa. Nausea. Abdominal pain. Blood in vomit.
Chronic symptoms - Dry skin. Red skin.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Not combustible. Use extinguishing media suitable for surrounding fire.
No unsuitable extingisher media known.

5.2 Specific hazards arising from the chemical
Under fire conditions, substance itself does not burn but may decompose upon heating to produce corrosive vapors including phosphoric acid mist
Contact with metals cause formation of flammable and explosive hydrogen gas.

5.3 Special protective actions for fire-fighters
Keep upwind to avoid fumes. In event of fire, wear full protective clothing and self contained breathing appartus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Ventilate area of leak or spill.
Wear apropriate PPE as specified in Section 8.
Isolate hazard area. Keep unnecesary and unprotected personnel from entering.

6.2 Environmental precautions

Prevent leaks and spills from entering sewers and surface waters and confined spaces. Releases to soils should be cleaned up to prevent soil and groundwater contamination.

6.3 Methods and materials for containment and cleaning up

Contain spilled material using dike or berm constructed of absorbent or impervious materials such as earth, sand or clay. Do not flush spiled material to sewer. Recover spilled material if possible. Otherwise netrualize with soda ash, sodium bicarbonate, or lime. Caustic soda should be avoided becasue of excessive reactivity. Collect neutralized material in labeled container for proper disposal per applicable regulations. Residual products may be diluted and flushed with copious amounts of water.

Reference to other sections

Refer to Section 8 for exposure controls and personal protection.
Refer to Section 13 for disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid spilling or splashing. Handle and open container with care. Avoid contact with eyes and skin. Wash skin and eys with water of at least 15 minutes. Do not get on clothing. Remove contaminated clothing immediately. Do not breathe acid sprays or mist. Do not injest. Do not get in eyes or on skin. Use appropriate personal protective clothing. Provide safety shower and eyewash station close to phosphoric acid handling areas. Use care when diluting with water. Always slowly add acid to water, never add water to acid. Protect from freezing.

7.2 Conditions for safe storage, including any incompatibilities

Store in tightly closed conatiner in a dry, cool and well-ventilated place protected from physical damage. Corrosive to mild steel. Store in rubber lined or 316 stainless steel desinged for phosphoric acid. Keep away from incompatible materials (e.g. strong bases, strong acid, metals).
Hydrogen, a highly flammable gas, can acumulate to explosive concentrations inside drums or an type of steel containers or tanks upon storage.

Specific end use(s)

Refer to Section 1 for product uses.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Phosphoric acid (CAS: 7664-38-2)
REL (Inhalation): 1 mg/m3, (ST) 3 mg/m3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

2. Phosphoric acid (CAS: 7664-38-2)
PEL (Inhalation): 1 mg/m3, (ST) 3 mg/m3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

3. Phosphoric acid (CAS: 7664-38-2)
PEL (Inhalation): 1 mg/m3 (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

8.2 Appropriate engineering controls

Emergency eye wash fountains and safety showers should be in the immediate area of any potential exposure.

Provide adequate general and local exhaust ventilation to maintain exposures below recommended exposure routes

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
If risk of splashing, wear face shield and safety goggles. Maintain eyewash near all ares of storage, delivery and use.

Skin protection
Wear protective gloves made of natural rubber, nitril rubber, polyethylene, viton, neoprene or other resistant elastomer recommended by the glove manufacturer for phosphoric acid protection. Wear impervious protective clothing, including boots, lab coats, apron or coveralls as approriate to prevent skin contact.

Body protection
Wear impervious protective clothing, including boots, lab coats, apron or coveralls as approriate to prevent skin contact.

Respiratory protection
If the exposure limit is exceeded, a full face piece or half mask respirator, approved for acid mists and vapors, should be worn

Thermal hazards
Due to its high freezing point, phosphoric acid is often heated to allow for transfer. Personal protective equipment should be used that provides protection against thermal acid burns as well as checmical burns.

Environmental exposure controls
Follow best management practices for handling and storage of phosphoric acid. Dispose of spilled material as required by applicable regulations.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	Green, viscous liquid.
Odor	Odorless when cold; pungent when hot.
Odor threshold	No data
pH	Strongly acidic; <1.0
Melting point/freezing point	21.1ºC
Initial boiling point and boiling range	Approx. 270 deg F @ 1 atmosphere , 154ºC
Flash point	Not applicable
Evaporation rate	No data
Flammability (solid, gas)	Non Flamable liquid.
Upper/lower flammability limits	No data
Upper/lower explosive limits	No data
Vapor pressure	(100% acid): 0.0285 mm Hg at 20º C
Vapor density	No data
Relative density	(@ 25ºC): 14.15 lb./gal.
Solubility(ies)	completely soluable in water
Partition coefficient: n-octanol/water	
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	23

Explosive properties	Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc. Explosive concentrations of vapor may accumulate in the headspace of containers.
Oxidizing properties	

SECTION 10: Stability and reactivity

10.1 Reactivity
Incompatible and may react violently with bases. Store away from strong oxidizers and strong bases. May be corrosive to metals and can produce flammable hydrogen gas which can form explosive mixtures with air.

10.2 Chemical stability
Stable under normal conditions of storage, handling, use.

10.3 Possibility of hazardous reactions
Reacts with bases and may be corrosive to metals.

10.4 Conditions to avoid
High temperatures and storage away from oxidizing materials and strongbases.

10.5 Incompatible materials
Aluminum, copper, mild steel, brass and bronze. Avoid contact with materials such as sulfides and sulfites which could release toxic gases. Be cautious in mixing with strong bases because the high heat of reaction can generate steam.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, haardous dcomposition products should not be produced. Phosphorus oxides and/or phosphine (PH3) may form from thermal decomposition

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Data from ASTAIS single dose (acute) animal studies with this material are given below:

Acute Oral LD50: (Rat): = 4,400 mg/kg; slightly toxic
Acute Dermal LD50: (Rabbit): >3,160 mg/kg; slightly toxic

Additional Information: The results of single exposure tests indicate that these concentrations of phosphoric acid are slightly toxic orally and no more than slightly toxic after skin application. Following a 24-hour exposure, irreversible eye and skin damage occurred at all tested concentrations of phosphoric acid.

Skin corrosion/irritation
Corrosive to the skin. Causes severe burns. Symptoms may include pain or irritation, redness and blistering.

Serious eye damage/irritation
Corrosive to eyes. Causes serious eye damage. Symptoms may include pain, blurred vision, watering and redness.

Respiratory or skin sensitization

May cause respiratory irritation and breathing difficulting. Symptoms may include irritation of nose, throat and lungs, coughing, and wheezing.

Germ cell mutagenicity
No known significant effects or critical hazards.

Carcinogenicity
No known significant effects or critical hazards.

Reproductive toxicity
No known significant effects or critical hazards.

Summary of evaluation of the CMR properties
No known significant effects or critical hazards.

STOT-single exposure
Not available.

STOT-repeated exposure
Not available.

Aspiration hazard
Not available.

Additional information
Ingestion may cause throat and stomach pain, difficulty swallowing, nausea or vomiting.

SECTION 12: Ecological information

Toxicity
Inorganic phosphates have the potential to increase the growth of freshwater algae, whose eventual death will reduce the available oxygen for aquatic life.
Acute Toxicity to Fish: 96 hr EC50 for Lepomis macrochirus (Bluegill) - 60 mg/L, 96 hr LC50 for Oncorhynchus mykiss (Rainbow trout) - 87 mg/L.
Acute Toxicity to Aquatic Invertebrates: 48 hr EC50 for Daphnia magna (Water flea) - 105 mg/L.
Acute Toxicity to Aquatic Plants: no data
Toxicity to Bacteria: no data
Toxicity to Soil Dwelling Organisms: no data
Toxicity to Terrestrial Plants: no data

Persistence and degradability
It was reported in the literature that while acidity of this material may be reduced readily in natural waters, the phosphate may persist indefinitely.

Bioaccumulative potential
Bioaccumulation is not expected

Mobility in soil
Under acidic soil conditions, sparsely soluble phosphates tend to solubilize and may migrate to water.

Results of PBT and vPvB assessment
No PBT or vPvB assessment is required for inorganic substances.

Other adverse effects
No known significant effects or critical hazards.

SECTION 13: Disposal considerations

Disposal of the product
Due to its corrosivity, this material, when discarded, is a RCRA characteristic hazardous waste (Waste Code: D002).

Disposal of contaminated packaging
Empty containers or liners may retain some product residues. Dispose of in accordance with local, state and federal regulations.

Waste treatment
Comply with CWA and RCRA Best Available Treatment and Universal Treatment Standards for D002 characteristic wastes prior to any land disposal or surface water discharge.

Sewage disposal
Treatment via a POTW should be in accordance with local, state and federal regulations and pre-treatment requirements.

Other disposal recommendations
Dispose of contaminated clothing and decontaminate response equipment and materials in accordance with local, state and federal regulations.

SECTION 14: Transport information

DOT (US)
UN Number: 1805
Class: 8
Packing Group: III
Proper Shipping Name: Corrosive
Reportable quantity (RQ): 5,000 lbs
Marine pollutant:
Poison inhalation hazard:

IMDG
UN Number: 1805
Class: 8
Packing Group: III
EMS Number:
Proper Shipping Name: Phosphoric Acid

IATA
UN Number: 1805
Class: 8
Packing Group: III
Proper Shipping Name: Phosphoric Acid

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

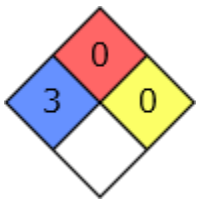
New Jersey Right To Know Components
Common name: PHOSPHORIC ACID
CAS number: 7664-38-2

Massachusetts Right To Know Components
Chemical name: Phosphoric acid
CAS number: 7664-38-2

HMIS Rating

Phosphoric acid liquid	
HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

NFPA Rating



SECTION 16: Other information

Disclaimer: This information relates to the specific material designated and may not be valid for such material used in combination with any other material or process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty, or guarantee is made as to the accuracy, reliability or completeness. **NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED.** It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warrant against patent infringement.