

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/11/2008

Reviewed on 11/11/2008

## 1 Identification of substance:

### Product details:

**Product name:** Hexafluorophosphoric acid 60% aqueous solution

**Stock number:** L15728

### Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company  
 Johnson Matthey Catalog Company, Inc.  
 30 Bond Street  
 Ward Hill, MA 01835-8099  
 Emergency Phone: (978) 521-6300  
 CHEMTREC: (800) 424-9300  
 Web Site: [www.alfa.com](http://www.alfa.com)

### Information Department:

Health, Safety and Environmental Department  
 Product Safety Department

### Emergency information:

During normal hours the Health, Safety and Environmental Department.  
 After normal hours call Chemtrec at (800) 424-9300.

## 2 Composition/Data on components:

### Chemical characterization:

#### Description: (CAS#)

Hexafluorophosphoric acid (CAS# 16940-81-1): 60%  
 Water (CAS# 7732-18-5): Balance

#### Identification number(s):

**EINECS Number:** 241-006-5

## 3 Hazards identification

### Hazard description:



T Toxic

### Information pertaining to particular dangers for man and environment

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.  
 R 34 Causes burns.

### Classification system

#### HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3
FIRE	0
REACTIVITY	1

Health (acute effects) = 3

Flammability = 0

Reactivity = 1

## 4 First aid measures

### General information

Immediately remove any clothing soiled by the product.  
 Remove breathing apparatus only after contaminated clothing has been completely removed.  
 In case of irregular breathing or respiratory arrest provide artificial respiration.

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**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing**

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

## 5 Fire fighting measures

**Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Hydrogen fluoride (HF)

Phosphorus oxides

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

## 6 Accidental release measures

**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

**Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

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Prevent formation of aerosols.

**Information about protection against explosions and fires:**

The product is not flammable

**Storage****Requirements to be met by storerooms and receptacles:**

No special requirements.

**Information about storage in one common storage facility:**

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**8 Exposure controls and personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with limit values that require monitoring at the workplace:**

Not required.

**Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

**Breathing equipment:**

Use suitable respirator when high concentrations are present.

**Protection of hands:**

Check protective gloves prior to each use for their proper condition.

Impervious gloves

**Material of gloves**

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Safety glasses

Tightly sealed goggles

Full face protection

**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Not determined

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**Change in condition****Melting point/Melting range:** Not determined**Boiling point/Boiling range:** Not determined**Sublimation temperature / start:** Not determined**Flash point:** Not determined**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:****Lower:** Not determined**Upper:** Not determined**Vapor pressure:** Not determined**Density at 20°C (68°F):** 1.77 g/cm<sup>3</sup>**Solubility in / Miscibility with Water:** Fully miscible**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Materials to be avoided:**

Aqueous solutions are incompatible with alkali and alkaline earth metals and many reactive organic and inorganic chemicals.

**Dangerous reactions**

Reacts with alkali metals.

Reacts with alkaline earth metals.

**Dangerous products of decomposition:**

Hydrogen fluoride

Phosphorus oxides (e.g. P<sub>2</sub>O<sub>5</sub>)**11 Toxicological information****Acute toxicity:****Primary irritant effect:****on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

**on the eye:**

Strong corrosive effect.

Irritating effect.

**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus.

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May cause skin burns or irritation depending on the severity of the exposure.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Danger through skin absorption.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

**13 Disposal considerations****Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information****DOT regulations:**

<b>Hazard class:</b>	8
<b>Identification number:</b>	UN1782
<b>Packing group:</b>	II
<b>Proper shipping name (technical name):</b>	HEXAFLUOROPHOSPHORIC ACID
<b>Label</b>	8

**Land transport ADR/RID (cross-border)**

<b>ADR/RID class:</b>	8 (C1) Corrosive substances
<b>Danger code (Kemler):</b>	80
<b>UN-Number:</b>	1782
<b>Packaging group:</b>	II

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**Description of goods:** 1782 HEXAFLUOROPHOSPHORIC ACID

**Maritime transport IMDG:**



**IMDG Class:** 8  
**UN Number:** 1782  
**Label** 8  
**Packaging group:** II  
**Proper shipping name:** HEXAFLUOROPHOSPHORIC ACID

**Air transport ICAO-TI and IATA-DGR:**



**ICAO/IATA Class:** 8  
**UN/ID Number:** 1782  
**Label** 8  
**Packaging group:** II  
**Proper shipping name:** HEXAFLUOROPHOSPHORIC ACID

## 15 Regulations

**Product related hazard informations:**

**Hazard symbols:**

T Toxic

**Risk phrases:**

23/24/25 Toxic by inhalation, in contact with skin and if swallowed.  
 34 Causes burns.

**Safety phrases:**

4 Keep away from living quarters.  
 9 Keep container in a well-ventilated place.  
 20 When using do not eat or drink.  
 23 Do not breathe gas/fumes/vapour/spray.  
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 27 Take off immediately all contaminated clothing.  
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
 45 In case of accident or if you feel unwell, seek medical advice immediately.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

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**Information about limitation of use:**

For use only by technically qualified individuals.

**16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:** Paul V. Connolly

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