

**Material Safety Data Sheet**

Version 3.0  
Revision Date 10/20/2009  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Hexafluorophosphoric acid solution

Product Number : 200956  
Brand : Aldrich

Company : Sigma-Aldrich Canada, Ltd  
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OAKVILLE ON L6H 6J8  
CANADA

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Hydrogen hexafluorophosphate

Formula :  $\text{HF}_6\text{P}$

CAS-No.	EC-No.	Index-No.	Concentration
<b>Hexafluorophosphoric acid</b>			
16940-81-1	241-006-5	-	>= 60 - <= 70 %
<b>Water</b>			
7732-18-5	231-791-2	-	30 %
<b>Fluorophosphoric acid, 70 WT.% solution</b>			
13537-32-1	-	-	>= 2 - <= 12 %
<b>Difluorophosphoric acid</b>			
13779-41-4	237-421-6	-	>= 2 - <= 12 %
<b>Phosphoric acid</b>			
7664-38-2	231-633-2	015-011-00-6	>= 2 - <= 12 %
<b>Hydrofluoric acid</b>			
7664-39-3	231-634-8	009-003-00-1	>= 2 - <= 12 %

**3. HAZARDS IDENTIFICATION**

## Emergency Overview

### Target Organs

Liver, Blood, Bone marrow, Kidney

### WHMIS Classification

D1A	Very Toxic Material Causing Immediate and	Highly toxic by ingestion
D2B	Serious Toxic Effects	Highly toxic by skin absorption
E		Highly toxic by inhalation
		Moderate eye irritant
		Corrosive

### HMIS Classification

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

### Potential Health Effects

<b>Inhalation</b>	May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	Causes skin burns. May be fatal if absorbed through skin.
<b>Eyes</b>	Causes eye burns.
<b>Ingestion</b>	May be fatal if swallowed. Causes burns.

## 4. FIRST AID MEASURES

### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

### In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIRE-FIGHTING MEASURES

### Flammable properties

Flash point no data available

Ignition temperature no data available

### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Dry powder

### Extinguishing media which shall not be used for safety reasons

Water

### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods for cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.  
Normal measures for preventive fire protection.

**Storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Never allow product to get in contact with water during storage.

Recommended storage temperature: 2 - 8 °C

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Phosphoric acid	7664-38-2	TWA	1 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required				
		STEL	3 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required				
		TWA	1 mg/m3	2006-11-29	Canada. British Columbia OEL
		STEL	3 mg/m3	2006-11-29	Canada. British Columbia OEL
		TWAE V	1 mg/m3	2005-12-17	Canada. Ontario OELs
		STEV	3 mg/m3	2005-12-17	Canada. Ontario OELs
		TWAE V	1 mg/m3	2006-12-29	Canada. Quebec OELs

		STEV	3 mg/m3	2006-12-29	Canada. Quebec OELs
Hydrofluoric acid	7664-39-3	(c)	3 ppm 2.3 mg/m3	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		C	2 ppm	2006-11-29	Canada. British Columbia OEL
		TWAE V	0.5 ppm	2005-12-17	Canada. Ontario OELs
		CEV	2 ppm	2005-12-17	Canada. Ontario OELs
		C	3 ppm 2.6 mg/m3	2006-12-29	Canada. Quebec OELs
Remarks	A substance which may not be recirculated in accordance with section 108				

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum).

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form clear, liquid

Colour light brown

### Safety data

pH no data available

Melting point no data available

Boiling point no data available

Flash point no data available

Ignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Density	1.770 g/cm <sup>3</sup>
Water solubility	no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Conditions to avoid

Exposure to moisture.

### Materials to avoid

Strong bases, glass, Alkali metals, Powdered metals, Strong oxidizing agents, Metals, Reacts violently with water.

### Hazardous reactions

Reacts violently with water.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

no data available

### Irritation and corrosion

no data available

### Sensitisation

no data available

### Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

### Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

### Potential Health Effects

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<b>Target Organs</b>	Liver, Blood, Bone marrow, Kidney,

## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

no data available

### Further information on ecology

no data available

### 13. DISPOSAL CONSIDERATIONS

#### Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

### 14. TRANSPORT INFORMATION

#### DOT (US)

UN-Number: 1782 Class: 8 Packing group: II

Proper shipping name: Hexafluorophosphoric acid

Reportable Quantity (RQ): 833 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

#### IMDG

UN-Number: 1782 Class: 8 Packing group: II EMS-No: F-A, S-B

Proper shipping name: HEXAFLUOROPHOSPHORIC ACID

Marine pollutant: No

#### IATA

UN-Number: 1782 Class: 8 Packing group: II

Proper shipping name: Hexafluorophosphoric acid

### 15. REGULATORY INFORMATION

#### DSL Status

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

Fluorophosphoric acid, 70 WT.% solution

Difluorophosphoric acid

Hexafluorophosphoric acid

CAS-No.

13537-32-1

13779-41-4

16940-81-1

#### WHMIS Classification

D1A Very Toxic Material Causing Immediate and

D2B Serious Toxic Effects

E

Highly toxic by ingestion

Highly toxic by skin absorption

Highly toxic by inhalation

Moderate eye irritant

Corrosive

### 16. OTHER INFORMATION

#### Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.