

SAFETY DATA SHEET

Preparation Date: 06/08/2015

Revision Date: 1/11/2017

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: H1045
Product Name: HYDROFLUORIC ACID, 48 PERCENT, REAGENT, ACS

Other means of identification

Synonyms: Acide fluorhydrique (French)
 Acido fluoridrico (Italian)
 Fluorowodor (Polish)
 Fluorwasserstoff (German)
 Fluorwaterstof (Dutch)
 Hydrofluoride
 Hydrogen fluoride

CAS #: 7664-39-3
RTECS # MW7875000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Cleaning cast iron, copper, brass; Removing efflorescence from brick and stone, or sand particle from metallic castings; working over too heavily weighted silks; frosting, etching glass and enamel; Polishing crystal glass; decomposing cellulose; enameling and galvanizing iron; increasing porosity of cermaics; analytical chemistry; catalyst; in dye chemistry; clouding electric bulbs; Hydrofluoric acid is used in oil well acidizing to stimulate oil and gas production from sandstone reservoirs; building cleaning agent; additive in liquid rocket propellents; flotation depressant; metal frosting/polishing agent; aluminum brightening agent; oil-well acidizing agent; stainless steel pickling 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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 1

Acute toxicity - Inhalation (Gases)	Category 2
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Fatal if swallowed
 Fatal in contact with skin
 Fatal if inhaled
 Causes severe skin burns and eye damage
 Causes damage to organs through prolonged or repeated exposure
 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 get in eyes, on skin, or on clothing
 Wear protective gloves/protective clothing/eye protection/face protection
 Do not breathe dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear respiratory protection
 Keep only in original container

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
 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.
 Immediately call a POISON CENTER or doctor/physician
 Wash contaminated clothing before reuse
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed
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

Components	CAS-No.	Weight %
Water	7732-18-5	48-54
Hydrogen fluoride	7664-39-3	46-52

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

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. While waiting for medical attention, it has been shown that flushing the affected area with water for at least one minute and then massaging HF Antidote Gel into the wound until there is a cessation of pain is a most effective first aid treatment. HF Antidote Gel contains 2% Calcium Gluconate which combines with HF for formation of insoluble Calcium Fluoride, thus preventing the extraction of calcium from the body tissue and bones. Another alternative first aid treatment, after thorough washing of the burned area, is to immerse the burned area in a solution of 0.2% iced aqueous Hyamine 1622 or 0.13% iced aqueous Zephiran Chloride. If immersion is impractical, towels should be soaked with one of the above solutions and used as compresses for the burn area. Hyamine 1622 is a trade name for Tetracaine Benzethonium Chloride. Zephiran is a trade name for Benzalkonium Chloride. Again, seek medical attention as soon as possible for burns regardless of how they may appear initially. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician or Poison Control Centre 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. Immediate medical attention is required.

Ingestion:

Fatal if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Follow with milk of magnesia. Administer 4 to 8 ounces (120 to 240 mL) of milk or water and milk of magnesia (not to exceed 4 ounces/120 mL in a child). Avoid large amounts of liquid, as this may induce vomiting (emesis). Do not give Sodium Bicarbonate (Baking Soda). Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Corrosive. Severe skin and eye irritation or burns. Causes eye damage. Severe irritation or burns of the digestive tract (mouth, throat, stomach, intestines) with necrotic lesions, and hemorrhagic gastritis. Severe abdominal pain. Nausea. May cause diarrhea. Severe irritation or burns of the respiratory tract and possible lung injury. Coughing. Dyspnea (Shortness of breath and difficulty breathing). May cause cyanosis. Fluorosis. Hypomagnesemia. Hyperkalemia. May cause hypocalcemia. May affect the cardiovascular system. It may affect the kidneys. May affect the liver.

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: Hydrogen fluoride gas

Hazardous Combustion Products: No information available.

Specific hazards: Contact with metals may evolve flammable hydrogen gas. May form acid vapors, hydrogen fluoride. Reacts explosively with Cyanogen fluoride (polymerizes explosively), glycerol plus nitric acid (evolves gas from oxidation), methanesulfonic acid (evolves oxygen difluoride).

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers.

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: Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Keep people away from and upwind of spill/leak. All equipment used when handling the product must be grounded. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get water inside containers. Remove all sources of ignition. Use a vapor suppressing foam to reduce vapors; do not put water directly on leak, spill area or inside container.

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 the spill with Calcium carbonate or Calcium oxide. Dilute with water. Absorb spill using polypropylene pads. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Do not use vermiculite, silica or sand-based material to absorb the spill. 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. Remove all sources of ignition. 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. Do not smoke. Never add water to this product. 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. Keep away from heat and sources of ignition. Store away from incompatible materials. May corrode glass. Store in appropriate container. May corrode metallic surfaces. Do not store in uncoated metallic containers.

Incompatible Materials:

Metals
Organic materials
Alkalis
Alkali Metals
Glass
Acid anhydrides
2-amino ethanol
ammonium hydroxide
Arsenic
Bismuthic acid
Calcium oxide
Chlorosulfonic acid
Dialuminum octavanadium tridecasilicide
Ethylene diamine

Ethyleneimine
 Fluorine
 Mercuric oxide
 Nitric acid
 Olen-Phenylazopiperidine
 Phosphoric anhydride
 Potassium permanganate
 Potassium tetrafluorosilicate(2-)
 beta-Propiolactone
 Propylene oxide
 Sodium hydroxide
 Sodium
 Sulfuric acid
 Vinyl acetate

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Water	7732-18-5	None	None	None	None
Hydrogen fluoride	7664-39-3	3 ppm TWA	= 2.5 mg/m ³ TWA	= 2 ppm Ceiling F	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Water	7732-18-5	None	None	None	None
Hydrogen fluoride	7664-39-3	= 1.6 mg/m ³ Ceiling F = 2 ppm Ceiling F	= 2 ppm Ceiling F	0.5 ppm TWA F	3 ppm Ceiling 2.6 mg/m ³ Ceiling

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Water	7732-18-5	None	None
Hydrogen fluoride	7664-39-3	None	= 2.5 mg/m ³ Peak = 3 ppm Peak

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 and Goggles
- 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

Physical state: Liquid	Appearance: No information available.	Color: Clear. Colorless.
Odor: Acrid. Strong.	Taste No information available.	Formula: HF
Molecular/Formula weight: 20.01	Flammability: Not flammable	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): -37°C/-34.6°F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 112°C/ 233.6°F	Bulk density: No information available	Density (g/cm3): No information available
Specific gravity: 1.16-1.18	pH: No information available	Vapor pressure @ 20°C (kPa): 1.65
Evaporation rate: No information available	Vapor density: No information available	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 cold water Easily soluble in hot water Very soluble in Acetone Slightly soluble in Ether	

10. STABILITY AND REACTIVITY

Reactivity

Incompatible with glass, ceramics, concrete, alkali materials, and will generate hydrogen gas on contact with metals, leather, rubber, common metals, carbonates, sulfides, cyanides, oxides of silicon, fluorine.
Reacts violently with: Acetic anhydride, 2-amino ethanol, Ammonium hydroxide, Arsenic trioxide, Bismuthic acid (produces oxygen), Calcium oxide, Chlorosulfonic acid, Dialuminum octavanadium tridecasilicid, Ethylene diamine, Ethyleneimine, Fluorine, Mercuric oxide, Mercury (II) oxide plus organic materials(above zero degree C), Nitric acid plus lactic acid (mixtures are unstable), Nitric acid plus propylene glycol, Olen-Phenylazopiperidine, Phosphoric anhydride (Phosphorus pentoxide unites with hydrogen fluoride vigorously, even at 19.5 degrees C, HSDB 1990), Potassium permanganate, Potassium tetrafluorosilicate(2-) (evolves silicon tetrafluoride gas), Propriolactone (beta-), Propylene glycol and silver nitrate (gas evolution and formation of silver fulminate), Propylene oxide, Sodium, Sodium hydroxide, Sodium tetrafluorosilicate, Sulfuric acid, Vinyl acetate

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials.

Incompatible Materials: Metals

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Organic materials
 Alkalis
 Alkali Metals
 Glass
 Acid anhydrides
 2-amino ethanol
 ammonium hydroxide
 Arsenic
 Bismuthic acid
 Calcium oxide
 Chlorosulfonic acid
 Dialuminum octavanadium tridecasilicide
 Ethylene diamine
 Ethyleneimine
 Fluorine
 Mercuric oxide
 Nitric acid
 Olen-Phenylazopiperidine
 Phosphoric anhydride
 Potassium permanganate
 Potassium tetrafluorosilicate(2-)
 beta-Propiolactone
 Propylene oxide
 Sodium hydroxide
 Sodium
 Sulfuric acid
 Vinyl acetate

Hazardous decomposition products:

Hydrogen fluoride.

Other Information

Corrosivity:

Extremely corrosive in presence of aluminum
 Extremely corrosive in the presence of stainless steel (304)
 Extremely corrosive in the presence of stainless steel (316)
 Corrosive in presence of copper

Special Remarks on Corrosivity: It corrodes most substances except lead, wax, polyethylene, and platinum. It will attack some forms of plastics, rubber and coatings. It attacks glass or stoneware, dissolving the silica. Minor corrosive effect on bronze

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

Water	
CAS-No.	7732-18-5

LD50/oral/rat = > 90 mL/kg Oral LD50 Rat
LD50/oral/mouse = No information available

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

Hydrogen fluoride	
CAS-No.	7664-39-3

LD50/oral/rat = No information available
LD50/oral/mouse = 342 ppm 1h
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = 1276 ppm Inhalation LC50 Rat 1 h
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = 1774 ppm 1 h LC50 Inhalation Monkey

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 = 1276 ppm
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: Fatal if absorbed through skin. Causes severe irritation and burns. Causes irreversible destruction of the skin. Readily penetrates the skin and mucous membranes. The burns may not be painful or visible.

Eye Contact: Causes severe irritation and burns. Causes irreversible destruction of the eyes.

Inhalation Fatal if inhaled. Causes severe irritation and burns/irreversible destruction of respiratory tract/lungs, narrowing and swelling of the throat and bronchoconstriction (upper airway obstruction). May also affect behavior (change in motor activity, headache, weakness, dizziness, convulsions, coma), blood, metabolism, cardiovascular system (lowering of blood pressure, cardiac arrhythmia), urinary system, gastrointestinal tract, respiration. Symptoms may include severe throat irritation, cough, dyspnea, respiratory depression, cyanosis, lung injury, and noncardiogenic pulmonary edema. Acute inhalation also depletes calcium levels in the body when can lead to hypocalcemia. May also cause hyperkalemia (high blood levels of potassium), hypomagnesemia, Inhalation exposure of 50 ppm for 5 min. may be fatal.

Ingestion May be fatal if swallowed. Causes severe irritation and burns/irreversible destruction of digestive tract/stomach. Gastrointestinal effects may include salivation nausea, diarrhea, severe abdominal pain, vomiting (vomiting of blood), painful necrotic lesions, hemorrhagic gastritis, pancreatitis, local caustic effects to mouth and gastrointestinal tract. Severe systemic toxicity including hypocalcemia, hypomagnesemia, hyperkalemia. Hypotensions, ventricular dysrhythmia and death may also occur.

Aspiration hazard No information available.

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

Chronic Toxicity Repeated exposure to airborne concentrations of 3 ppm or less could be tolerated with no apparent ill effects for 6 hours/day for up to 50 days; redness of the skin and irritation and burning of the eyes and nose were noted at airborne concentrations between 3 ppm and 4.7 ppm (ACGIH, 1992). No significant changes in pulmonary function occurred with occupational exposure to airborne levels averaging 1.03 ppm (ACGIH). Effects of chronic exposure by inhalation and ingestion include systemic fluoride toxicity (FLUOROSIS), skeletal/bone structure abnormalities (osteosclerosis, and mottling of the teeth (Clayton & Clayton, 1994; White, 1980; Waldbott & Lee, 1978). Hypocalcemia, metabolic acidosis, chronic bronchitis, pulmonary edema, and death can occur from high-level chronic exposure. Chronic exposure may affect the liver and kidneys.

Sensitization: No information available.

Mutagenic Effects: May affect genetic material based on animal test data

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Hydrogen fluoride	7664-39-3	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: May cause adverse developmental effects based on animal data
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure Respiratory Tract. central nervous system.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.
Target Organs: Respiratory system. Lungs. Skin. Eyes. Bones. Teeth.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: May be harmful to the aquatic environment.

Hydrogen fluoride - 7664-39-3

Freshwater Fish Species Data: 660 mg/L LC50 *Leuciscus idus* 48 h 1

Water Flea Data: 270 mg/L EC50 *Daphnia* species 48 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	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	7732-18-5	None	None	None	None
Hydrogen fluoride	7664-39-3	None	None	None	U134 Corrosive waste, Toxic waste

14. TRANSPORT INFORMATION

DOT

UN-No: UN1790

Proper Shipping Name: Hydrofluoric acid solution

Hazard Class: 8

Subsidiary Class: 6.1

Packing group: II

Emergency Response Guide Number: 157

Marine Pollutant: No data available

DOT RQ (lbs): No information available

Special Provisions: A6, A7, B15, IB2, N5, N34, T8, TP2,

Symbol(s): [DOT]: (R3) - Identifies a material that is a hazardous substance that has a reportable quantity (RQ) of 100 pounds (45.4 Kilograms).

Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

TDG (Canada)

UN-No: UN1790

Proper Shipping Name: Hydrofluoric acid solution

Hazard Class: 8

Subsidiary Risk: (6.1)

Packing Group: II

Marine Pollutant: No Information available

Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

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ADR

UN-No: UN1790
Proper Shipping Name: Hydrofluoric acid solution
Hazard Class: 8
Packing Group: II
Subsidiary Risk: 6.1
Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

IMO / IMDG

UN-No: UN1790
Proper Shipping Name: Hydrofluoric acid solution
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: II
Marine Pollutant: No information available
EMS: F-A
Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

RID

UN-No: UN1790
Proper Shipping Name: Hydrofluoric acid solution
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: II
Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

ICAO

UN-No: UN1790
Proper Shipping Name: Hydrofluoric acid solution
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: II
Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

IATA

UN-No: UN1790
Proper Shipping Name: Hydrofluoric acid solution
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: II
ERG Code: 8P
Special Provisions: No information available
Description: UN1790, Hydrofluoric acid solution, 8 (6.1), II

15. REGULATORY INFORMATION**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Water</i>	7732-18-5	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Hydrogen fluoride</i>	7664-39-3	Present T	Present KE-20198	Present	Present (1)-306	Present	Present	Present 231-634-8

U.S. Regulations**Product code:** H1045**Product name:** HYDROFLUORIC ACID, 48 PERCENT, REAGENT, ACS**12 / 15**

Hydrogen fluoride

- Massachusetts RTK:** Present
- Massachusetts EHS:** extraordinarily hazardous
- New Jersey RTK Hazardous Substance List:** 3759
- New Jersey (EHS) List:** 3759 100 lb TPQ
1014 500 lb TPQ
- New Jersey - Discharge Prevention - List of Hazardous Substances:** Present
- New Jersey TCPA - EHS:** =1000lbTQ
=500lbTQ
=700lbTQ
- Pennsylvania RTK:** Environmental hazard
- Pennsylvania RTK - Environmental Hazard List** Present
- Pennsylvania RTK - Special Hazardous Substances** Present
- Michigan PSM HHC:** = 1000 lb TQ
- Minnesota - Hazardous Substance List:** Present
- New York Release Reporting - List of Hazardous Substances:**
= 100 lb RQ
- Louisiana Reportable Quantity List for Pollutants:** Listed
- California Directors List of Hazardous Substances:** Present

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	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	7732-18-5	Not Listed	Not Listed	Not Listed	Not Listed
Hydrogen fluoride	7664-39-3	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	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
Water	7732-18-5	None	None	None	None	None
Hydrogen fluoride	7664-39-3	= 45.4 kg final RQ = 100 lb final RQ	100 lb TPQ 100	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Water	7732-18-5	Not Applicable	Not Applicable
Hydrogen fluoride	7664-39-3	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

- D1A Very toxic materials
- D2A Very toxic materials
- E Corrosive material

Components

Water

Hydrogen fluoride

WHMHAZ

Uncontrolled product according to WHMIS classification criteria

- D1A D2A E
- D1B D2A E including 40%, 50%, 70%
- D1A D2A E

Product code: H1045

Product name: HYDROFLUORIC ACID, 48 PERCENT, REAGENT, ACS

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 -
Hydrogen fluoride	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Water	7732-18-5	Present	Not Listed
Hydrogen fluoride	7664-39-3	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Water	7732-18-5	Not listed
Hydrogen fluoride	7664-39-3	Not listed

Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	7732-18-5	Not listed
Hydrogen fluoride	7664-39-3	Not listed

EU Classification**R-phrases(s)**

R35 - Causes severe burns.

R26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.

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.

S 7/9 - Keep container tightly closed and in a well-ventilated place.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Water	7732-18-5		No information	
Hydrogen fluoride	7664-39-3	C;R35 T+;R26/27/28	0.1%<=C<1% Xn;R20/21/22-36 1%<=C<7% T;C;R23/24/25-34 7%<=C T+;C;R26/27/28-35	S(1/2)-S7/9-S26-S36/3 7/39-S45 S(1/2)-S7/9-S26-S36/3 7-S45

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

Indication of danger:

C - Corrosive.

T+ - Very toxic.

T+



C

**16. OTHER INFORMATION**

Preparation Date: 06/08/2015

Product code: H1045

Product name: HYDROFLUORIC
ACID, 48 PERCENT, REAGENT, ACS

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Revision Date:
Prepared by:

1/11/2017
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