

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

## 1 Identification of substance:

### Product details:

**Product name:** Cyanuric fluoride

**Stock number:** 32510

### 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

### 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#)

Cyanuric fluoride (CAS# 675-14-9): 100%

#### Identification number(s):

**EINECS Number:** 211-620-8

## 3 Hazards identification

### Hazard description:



T+ Very toxic

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

R 24 Toxic in contact with skin.

R 26 Very toxic by inhalation.

R 34 Causes burns.

### Classification system

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

(Hazardous Materials Identification System)

HEALTH	4
FIRE	1
REACTIVITY	1

Health (acute effects) = 4

Flammability = 1

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.

### After inhalation

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

(Contd. on page 2)

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name: Cyanuric fluoride**

(Contd. of page 1)

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** Seek immediate medical advice.

## 5 Fire fighting measures

**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen fluoride (HF)

Nitrogen oxides (NOx)

**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:**

Handle under dry protective gas.

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.

Prevent formation of aerosols.

(Contd. on page 3)

**Material Safety Data Sheet**  
acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name: Cyanuric fluoride**

(Contd. of page 2)

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

Keep ignition sources away.

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

No special requirements.

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

Store away from water/moisture.

Store away from oxidizing agents.

**Further information about storage conditions:**

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

**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:**

Impervious gloves

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

**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 Yellowish

(Contd. on page 4)

USA

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name: Cyanuric fluoride**

(Contd. of page 3)

<b>Odor:</b>	Acrid
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	74°C (165°F)
<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	Not determined
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure:</b>	Not determined
<b>Density at 20°C (68°F):</b>	1.574 g/cm <sup>3</sup>
<b>Solubility in / Miscibility with Water:</b>	Reacts

## 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:**

Water/moisture  
Oxidizing agents

**Dangerous reactions** No dangerous reactions known

**Dangerous products of decomposition:**

Carbon monoxide and carbon dioxide  
Hydrogen fluoride  
Nitrogen oxides

## 11 Toxicological information

**Acute toxicity:**
**LD/LC50 values that are relevant for classification:**

Dermal	LD50	160 mg/kg (rabbit)
Inhalative	LC50/4H	3100 ppb/4H (rat)

**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.

(Contd. on page 5)

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name: Cyanuric fluoride**

(Contd. of page 4)

**Subacute to chronic toxicity:****Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - excitement.

Lungs, Thorax, or Respiration - chronic pulmonary edema.

Lungs, Thorax, or Respiration - dyspnea.

Lungs, Thorax, or respiration - bronchiolar constriction.

Tumorigenic - carcinogenic by RTECS criteria.

Sense Organs and Special Senses (Eye) - lacrimation.

**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. 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.

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

**Hazard class:**

6.1

**Identification number:**

UN3389

(Contd. on page 6)

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name:** Cyanuric fluoride

(Contd. of page 5)

**Packing group:** I  
**Poison inhalation hazard:** Yes  
**Proper shipping name (technical name):** TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (Cyanuric fluoride)  
**Label** 6.1+8

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



**ADR/RID class:** 6.1 (TC1) Toxic substances  
**Danger code (Kemler):** 668  
**UN-Number:** 3389  
**Packaging group:** I  
**Description of goods:** 3389 TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (Cyanuric fluoride)

**Maritime transport IMDG:**



**IMDG Class:** 6.1  
**UN Number:** 3389  
**Label** 6.1+8  
**Packaging group:** I  
**Proper shipping name:** TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (Cyanuric fluoride)

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



**ICAO/IATA Class:** 6.1  
**UN/ID Number:** 3389  
**Label** 6.1+8  
**Packaging group:** I  
**Proper shipping name:** TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S.

## 15 Regulations

**Product related hazard informations:**

**Hazard symbols:**

T+ Very toxic

**Risk phrases:**

24 Toxic in contact with skin.

26 Very toxic by inhalation.

34 Causes burns.

(Contd. on page 7)

USA

**Material Safety Data Sheet**  
acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 06/20/2008

**Product name: Cyanuric fluoride**

(Contd. of page 6)

**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.  
27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.  
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.  
60 This material and its container must be disposed of as hazardous waste.

**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).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**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