

## 1. IDENTIFICATION

### 1.1 PRODUCT IDENTIFIERS

Product Name: Calcium Fluoride Optical Crystal  
Synonyms, Trade Names: CaF<sub>2</sub>

### 1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE

Identified Uses: Optical material for manufacturing of Optical Components

### 1.3 DETAILS OF SUPPLIER OF THE SAFETY DATA SHEET

Company: American Photonics, Inc.  
6621 19th Street East  
Sarasota, FL 34243  
(941) 752-5811

### 1.4 EMERGENCY TELEPHONE NUMBER

Emergency Phone: (941) 752-5811  
Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.

## 2. HAZARDOUS IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Harmful in contact with skin and eyes. Particular care must be exercised when machining and creating dust or particles.

### 2.2 LABEL ELEMENTS

H315 Causes skin irritation  
H319 Causes serious eye irritation  
H332 Harmful if Inhaled

Precautionary Statements:

P262 Do not breathe dust / fumes / gas / mist / vapors / spray  
P301+P310 IF SWALLOWED: Immediately call a poison center or doctor. Rinse mouth.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### 2.3 OTHER HAZARDS

None

|                                                                                                                                                                            |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Health                                                                                                                                                                     | 1 |
| Flammability                                                                                                                                                               | 0 |
| Physical Hazard                                                                                                                                                            | 0 |
| Personal Protection                                                                                                                                                        | B |
|   |   |

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1 SUBSTANCES

| Component Name   | CAS Number | Percentages are by weight |
|------------------|------------|---------------------------|
| Calcium Fluoride | 7789-75-5  | >99%                      |

## 4. FIRST AID MEASURES

#### 4.1 DESCRIPTION OF FIRST AID MEASURES

- GENERAL:** Consult a doctor for specific advice
- EYES:** Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.
- SKIN:** Wash thoroughly with soap and water. Dry area with clean towel. Remove contaminated clothing and wash clothing before re-use.
- INHALATION:** Remove to fresh air. Perform artificial respiration if breathing has stopped. When breathing is difficult, properly trained personnel may administer oxygen. Keep affected person warm and at rest. Obtain medical attention.
- INGESTION:** Induce vomiting if conscious and as directed by properly qualified personnel. Wash out mouth thoroughly with water. Never make an unconscious person vomit or drink fluids.

### 5. FIRE FIGHTING MEASURES

#### 5.1 EXTINGUISHING MEDIA

This product does not burn.

#### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Material may evolve toxic fumes in a fire.

#### 5.3 ADVICE FOR FIREFIGHTERS

Use breathing apparatus if necessary.



### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear suitable protective clothing & equipment as listed under Section 8. Avoid making dust.

#### 6.2 ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage. Do not let product enter drains. Do not discharge to the environment.

#### 6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Take up and containerize for proper disposal. Containerize any cleaning materials use for proper disposal.

#### 6.4 REFERENCE TO OTHER SECTIONS

Dispose as in Section 13.

### 7. HANDLING AND STORAGE

#### 7.1 PRECAUTIONS FOR SAFE HANDLING

Keep away from heat. Avoid contact with skin and eyes. Protect against physical damage. Avoid generating dust.

#### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep away from food. Keep away from strong acids.

#### 7.3 SPECIFIC END USES

Optical Material for Manufacture of Optical Components.



## SAFETY DATA SHEETS Calcium Fluoride

### 8. EXPOSURE CONTROL AND PERSONAL PROTECTION

#### 8.1 CONTROL PARAMETERS

**OCCUPATIONAL EXPOSURE LIMITS (OEL): 2.5 mg/m<sup>3</sup> long term as F**

#### 8.2 EXPOSURE CONTROLS

Protective gloves made of PVA are required. Use of a laboratory coat is suggested. Safety goggles or safety glasses with side shields are required if there is any possibility of chipping or dust creation. Respirators must be worn when the threshold limit is exceeded. Provide adequate general mechanical ventilation, and local exhaust ventilation. Wash hands immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

|                        |                                              |
|------------------------|----------------------------------------------|
| APPEARANCE:            | Clear glassy geometric shapes, no color.     |
| ODOR:                  | No Odor                                      |
| BOILING POINT:         | ~2500° C (4532° F)                           |
| MELTING POINT:         | 1360° C (2480° F)                            |
| AUTO/SELF-IGNITE TEMP: | Not applicable                               |
| FLASH POINT:           | Not applicable                               |
| FLAMMABILITY:          | Not applicable                               |
| RELATIVE DENSITY:      | 5.323 g/mL at 25° C (77° F)                  |
| SOLUBILITY IN WATER:   | 0.0017g/100g at 20°C (Practically Insoluble) |
| pH-value:              | Not Determined                               |
| Explosive Properties:  | Not applicable                               |

#### 9.2 OTHER SAFETY INFORMATION

None

### 10. STABILITY AND REACTIVITY

#### 10.1 REACTIVITY:

Reacts with strong mineral acids.

#### 10.2 CHEMICAL STABILITY

Stable under normal conditions

#### 10.3 POSSIBILITY OF HAZARDOUS REACTIONS

None known

#### 10.4 CONDITIONS TO AVOID:

Avoid strong acids

#### 10.5 INCOMPATIBLE MATERIALS:

Strong Mineral Acids

#### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Decomposition product is Hydrogen Fluoride gas.



## SAFETY DATA SHEET

### Calcium Fluoride

#### 11. TOXICOLOGICAL INFORMATION

##### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Toxic by ingestion and inhalation of dust, with a cumulative effect. Affects nervous systems.

Particular care must be exercised when machining and creating dust or particules. Inhalation of dust may irritate respiratory system.

**TOXIC DOSE - LD50** > 4250 mg/kg (oral / rat)

**CARCINOGENICITY:** No evidence of carcinogenic properties.

**MUTAGENICITY/TERATOGENICITY:** No evidence of reproductive effects.

#### 12. ECOLOGICAL INFORMATION

**12.1 TOXICITY:** No data

**12.2 PERSISTENCE AND DEGRADABILITY** No data

**12.3 BIOACCUMULATIVE POTENTIAL:** No data

**12.4 MOBILITY IN SOIL:** No data

##### 12.5 RESULTS OF PBT AND vPvB ASSESSMENT

Not required or conducted

**12.6 OTHER ADVERSE EFFECTS:** The following applies to inorganic fluorides in general:  
biological effects: fish: L idus LC50 660mg/l; bacteria: Ps putida toxic from 231 mg/l up; algae: Se quadricauda toxic from 249mg/l up; protozoa: E sulcatum toxic from 101mg/l up; U parduczi toxic from 71 mg/l up (all values as NaF).  
Hazard to drinking water.

#### 13. DISPOSAL CONSIDERATIONS

**13.1** Chemical residues are generally classified as special waste and are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company.

#### 14. TRANSPORT INFORMATION

**14.1 UN NUMBER:** None

**14.2 UN PROPER SHIPPING NAME:** Not subject to transport regulations

**14.3 TRANSPORT HAZARD CLASS:** None

**14.4 PACKING GROUP:** None

**14.5 ENVIRONMENTAL HAZARDS:** None

**14.6 SPECIAL PRECAUTIONS FOR USER:** None

**14.7 TRANSPORT IN BULK:** No data

#### 15. REGULATORY INFORMATION

##### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS / LEGISLATIONS SPECIFIC FOR THE SUBSTANCE

TSCA: Listed in the TSCA inventory

DSL (Canada): Listed



## SAFETY DATA SHEETS

### Calcium Fluoride

#### 16. OTHER INFORMATION

**16.1** The above information is believed to be correct, but does not purport to be all inclusive and must be used only as a guide.

**16.2 REVISION DATE:** 03.23.2020