

## Material Safety Data Sheet

### 1. Chemical Product and Company Identification

Glass type: H-FK61

Glass manufacturer: CDGM

### 2. Composition/Information on Ingredients

Substance/Mixture: Mixture

Ingredients and contents:

Chemical Name	Chemical formula	Cas number	Industrial Safety and Health		Chemical Management Promotion Law						
			Hazardous substances of which notification of names is required	Content (wt%)	Names of designated chemical substances	Content (wt%)	Appended table number	Item number	Class 1 designated chemical substance	Specified Class 1 designated chemical substance	Class 2 designated chemical substance
Aluminum Fluoride	AlF <sub>3</sub>	7784-18-1	fluoride and its water-soluble inorganic compounds	10-20	-	-	-	-	-	-	-
Calcium Fluoride	CaF <sub>2</sub>	7789-75-5	fluoride and its water-soluble inorganic compounds	5-15	-	-	-	-	-	-	-
Strontium Fluoride	SrF <sub>2</sub>	7783-48-4	fluoride and its water-soluble inorganic compounds	20-35	-	-	-	-	-	-	-
Barium Fluoride	BaF <sub>2</sub>	7787-32-8	fluoride and its water-soluble inorganic compounds	15-25	-	-	-	-	-	-	-
Aluminum Oxide	Al <sub>2</sub> O <sub>3</sub>	1344-28-1	aluminum oxide	0-10	-	-	-	-	-	-	-
Barium Oxide	BaO	1304-28-5	barium oxide	0-10	-	-	-	-	-	-	-
Magnesium Fluoride	MgF <sub>2</sub>	7783-40-6	fluoride and its water-soluble inorganic compounds	0-10	-	-	-	-	-	-	-
Yttrium Fluoride	YF <sub>3</sub>	13709-49-4	fluoride and its water-soluble inorganic compounds	0-10	-	-	-	-	-	-	-
Phosphorus Pentoxide	P <sub>2</sub> O <sub>5</sub>	1314-56-3	phosphorus pentoxide	20-40	-	-	-	-	-	-	-
Calcium Chloride	CaCl <sub>2</sub>	10043-52-4	-	0-0.5	-	-	-	-	-	-	-

Note: The Industrial Safety and Health Law and the Chemical Management Promotion Law are Japan laws and regulations.

### 3. Hazards Summarizing

Optical glasses are physically and chemically stable and are not hazardous.

Hazards: Ingestion of grinding and polishing liquids and inhalation of dust generated during dry processing

may cause chronic of cumulative health impairment including cancer.

Environmental effects: Pay attention to the concentrations of grinding and polishing liquids in waste water as they may damage the ecosystem.

#### **4. First-Aid Measures**

Eye contact: If the grinding or polishing liquids come into contact with eyes, immediately rinse the eyes with clean water and obtain a medical diagnosis, if necessary. In the case of contact with dust from dry processing, be careful to avoid damaging the eyeballs.

Mouth contact: If grinding and polishing liquids and dust enter the mouth, rinse with plenty of water. If ingestion occurs, give the patient plenty of water and induce vomiting, then obtain a medical diagnosis, if necessary.

#### **5. Fire-Fighting Measures**

Since optical glasses are nonflammable, any extinguishing media may be used.

When fire occurs, the glass including fluoride may emit gas containing fluoride at high temperature.

Therefore, the glass should be sent to safe place. If the gas containing fluoride emit, please do not stand in the leeward place and put on the shield in order not to absorb the air containing fluoride. If absorb the gas, please go to hospital.

#### **6. Accidental Release Measures**

Grinding and polishing liquids: Stop the flow with sandbags or the like to prevent the spill from contaminating soil or being absorbed into waste water systems such as sewers. Collect as much of the released liquid as possible into an empty container.

Dust: Prevent dust from contaminating soil or being absorbed into waste water systems such as sewers, and collect as much of the released dust as possible into an empty container. Be sure to remain upwind and wear a dust mask when dealing with dust spills.

#### **7. Handling and Storage**

Since optical glasses are physically and chemically stable, no precautions are required in handling and storage.

During grinding, polishing, and dry processing: When handling be careful to prevent grinding and polishing liquids, grinding and polishing waste, and dust from dry processing from escaping and contaminating the environment. Gargle and wash hands thoroughly after work.

#### **8. Exposure Controls/Personal Protection**

Although there is no potential hazard in exposure to optical glass due to its physical and chemical stability, exposure to the mist scattered during wet processing and the scattered dust created during dry processing may result in injury.

During wet processing: Prevent mist from scattering by providing the processing machine with a protective cover or the like.

During dry processing: Prevent dust from scattering by installing a local exhaust system or the like. Wear a dust mask. Wear eye protection, if necessary.

Control concentrations of chemical substances

Chemical substance name	Dust	HF	
Control concentration	E=2.9mg/m <sup>3</sup>	3ppm	

#### 9. Physical and Chemical Properties:

Physical state: Solid

Color: Colorless hue or light yellow hue

Smell: No smell

PH: No applicable

Sag temperature (Ts): 486°C

Density: 3.70g/cm<sup>3</sup>

Solubility: insoluble

#### 10. Stability and Reactivity

Stability: Stable

Reactivity: Normally unobservable

Decomposition products: Normally unpredictable

#### 11. Toxicological Information

Since optical glasses are physically and chemically stable, they do not have acute toxicity or local effects.

Grinding and polishing liquids and grinding and polishing waste and dust have:

Acute toxicity: No information

Carcinogenicity: No information

Chronic toxicity: Cumulative chronic toxicity through inhalation and skin contact.

#### 12. Ecological Information

Since optical glasses are physically and chemically stable, they have no ecological effects.

If the water concentrating grinding liquid exceeds the stipulated data which is described in Water Pollution Control Law, it may cause the accumulate poisoning.

Designated substance	Content of F		
Standard of Draining or Permissible Concentration	8mg/l		

#### 13. Disposal

In accordance with the relevant laws for the treatment and clearing of waste, it could be treated by the profession department permitted.

#### 14. Transport Information

None

#### 15. Regulatory Information

Industrial Safety and Health Law, enforcement ordinance of the same, by law of the same Pneumoconiosis Law, enforcement regulations of the same.

Ordinance on the Prevention of Dust Hazard

Ordinance on the Prevention of Lead Poisoning

Ordinance on the Prevention of Hazards due to Specified Chemical Substances

Working Environment Measurement Law, enforcement ordinance of the same, enforcement by law of the same, standard of the same, standards for working environment evaluation

Water Pollution Control Law, enforcement ordinance of the same, enforcement by law of the same, prefecture and ministry ordinances, notifications, and the like stipulating effluent standards

Chemical Management Promotion Law

Waste Disposal and Public Cleaning Law, enforcement ordinance of the same, enforcement by law of the same.

- Please confirm applicability of laws and regulations depending upon the site scale, installed capacity, and the like
- Make sure you are aware of and adhere to all applicable local regulations
- All of the above rules and regulations are Japan

## 16. Other Information

Contact us if you wish to melt down glass for recycling or other purposes.

Caution: The information contained in the safety data sheet for chemical products is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not assure or represent a guarantee of the correct properties of the product.