



SAFETY DATA SHEET

Barium Fluoride Optical Crystal

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	Barium Fluoride Optical Crystal
CAS number	7787-32-8
EU index number	056-002-00-7
EC number	232-108-0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Optical Material for manufacture of Optical Components
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1.3. Details of the supplier of the safety data sheet

Supplier	Knight Optical (UK) LTD Roebuck Business Park Harrietsham Kent ME17 1AB UK +44 (0)1622 859444 q.a@knightoptical.co.uk
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1.4. Emergency telephone number

Emergency telephone	+44 (0)1622 859444 (Monday to Friday 08:30 to 17:00 GMT)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319
Environmental hazards	Not Classified

2.2. Label elements

EC number	232-108-0
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Hazard pictograms



Signal word	Warning
Hazard statements	H302+H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation.

Barium Fluoride Optical Crystal

Precautionary statements

P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P332+P313 If skin irritation occurs: Get medical advice/ attention.
 P337+P313 If eye irritation persists: Get medical advice/ attention.
 P501 Dispose of contents/ container in accordance with national regulations.

Supplementary precautionary statements

P261 Avoid breathing dust.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P321 Specific treatment (see medical advice on this label).
 P330 Rinse mouth.
 P362+P364 Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

HSNO Classification

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	Barium Fluoride Optical Crystal
EU index number	056-002-00-7
CAS number	7787-32-8
EC number	232-108-0

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention. Treat symptomatically.
Inhalation	IF INHALED: Get medical attention immediately. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Do not induce vomiting.
Ingestion	IF SWALLOWED: Get medical attention immediately. If throat irritation or coughing persists, proceed as follows. Rinse mouth thoroughly with water. Promptly get affected person to drink large volumes of water to dilute the swallowed chemical. Stop if the affected person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
Skin contact	IF ON SKIN (or hair): Rinse immediately with plenty of water. Continue to rinse for at least 10 minutes. Get medical attention if irritation persists after washing. Remove contaminated clothing.
Eye contact	IF IN EYES: Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention. Get medical attention if irritation persists after washing.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

4.2. Most important symptoms and effects, both acute and delayed

General information	Treat symptomatically. See Section 11 for additional information on health hazards.
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Inhalation	May cause irritation.
Ingestion	May cause irritation.
Skin contact	May cause skin irritation.
Eye contact	May cause irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
Specific treatments	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire. Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.

5.2. Special hazards arising from the substance or mixture

Specific hazards The product is not flammable.

5.3. Advice for firefighters

Protective actions during firefighting No action shall be taken without appropriate training or involving any personal risk. Stop leak if safe to do so. If leakage cannot be stopped, evacuate area. Move containers from fire area if it can be done without risk.

Special protective equipment for firefighters Use air-supplied respirator, gloves and protective goggles.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Avoid contact with skin, eyes and clothing. Follow precautions for safe handling described in this safety data sheet.

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evaluate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Move containers from spillage area. Collect and place in suitable waste disposal containers and seal securely. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards.

SECTION 7: Handling and storage

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7.1. Precautions for safe handling

Usage precautions	Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.
Advice on general occupational hygiene	Do not eat, drink or smoke when using this product. Provide eyewash station. Wash promptly with soap and water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Do not store near heat sources or expose to high temperatures. Store away from the following materials: Acids.
Storage class	Chemical storage.

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

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Long-term exposure limit (8-hour TWA): WEL 0.5 mg/m³ inhalable fraction and dust

WEL = Workplace Exposure Limit.

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

This product is not to be used under conditions of poor ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protection

Use protective clothing, hand gloves and goggles.

Eye/face protection

Use safety glasses with side shields that are consistent with EN 166, or local equivalent, are recommended.

Hand protection

To protect hands from chemicals, gloves should comply with European Standard EN374. It is recommended that gloves are made of the following material: Nitrile rubber. Butyl rubber.

Other skin and body protection

Wear appropriate clothing to prevent skin contamination.

Hygiene measures

Wash hands thoroughly after handling. Promptly remove any clothing that becomes contaminated. Do not eat, drink or smoke when using this product.

Respiratory protection

Combination filter, type A2/P3.

Environmental exposure controls

Keep container tightly sealed when not in use. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Transparent. Glass. Solid.
Colour	Clear.

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Odour	No characteristic odour.
Odour threshold	Not determined.
pH	Not determined.
Melting point	1355°C
Initial boiling point and range	Not determined.
Flash point	Not determined.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Other flammability	Not applicable.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Not determined.
Bulk density	4.89 g/cm ³
Solubility(ies)	Slightly soluble in water. 170 g/100 g water @ 23°C
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not applicable.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Not applicable.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Strong mineral acids.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None known.

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight. Strong acids.

10.5. Incompatible materials

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Materials to avoid No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products

Hazardous decomposition products Hydrogen fluoride (HF).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Notes (dermal LD₅₀) No specific test data are available.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Harmful if inhaled.

ATE inhalation (dusts/mists mg/l) 1.5

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Animal data

Not available.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Summary Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

SECTION 12: Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous.

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12.1. Toxicity

Toxicity Danger to drinking water

Acute aquatic toxicity

Summary Based on Inorganic Fluorides

Acute toxicity - fish LC₅₀, 96 hours: 660 mg/l, *Leuciscus idus* (Golden orfe)

Acute toxicity - aquatic plants NOEC, : 249 mg/l, *Algae*
S. quadricauda

Acute toxicity - microorganisms NOEC, : 231 mg/l, *Pseudomonas putida*

12.2. Persistence and degradability

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

12.4. Mobility in soil

Mobility No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Not relevant.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Waste should be treated as controlled waste.

Disposal methods Dispose of contents/container in accordance with national regulations. Waste should be treated as controlled waste.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

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14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Control of Substances Hazardous to Health Regulations 2002 (as amended).
EH40/2005 Workplace exposure limits.
Health and Safety at Work etc. Act 1974 (as amended).
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

EU legislation

Commission Decision 2000/532/EC as amended by Decision 2001/118/EC establishing a list of wastes and hazardous waste pursuant to Council Directive 75/442/EEC on waste and Directive 91/689/EEC on hazardous waste with amendments.
Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work (as amended).
Commission Regulation (EU) No 453/2010 of 20 May 2010.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Guidance

Isocyanates: Health hazards and precautionary measures EH16.
Workplace Exposure Limits EH40.

Restrictions (Annex XVII Regulation 1907/2006)

No specific restrictions on use are known for this product.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

DSL

US - TSCA

Present.

SECTION 16: Other information

Barium Fluoride Optical Crystal

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. IATA: International Air Transport Association. IMDG: International Maritime Dangerous Goods. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). NOEC: No Observed Effect Concentration. vPvB: Very Persistent and Very Bioaccumulative. PBT: Persistent, Bioaccumulative and Toxic substance. UN: United Nations. REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. CAS: Chemical Abstracts Service. GHS: Globally Harmonized System.
Revision date	07/12/2020
Revision	1
SDS number	6911
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled.