

CANON OPTRON INC.

SDS Number: EB01C

Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1

Revised Date 2018/6/6

SECTION 1 Chemicals and company identification

Chemical identifier	BaF2 (Optical Crystal)
SDS number	EB01C
Company name	CANON OPTRON INC.
Address	1744-1, Kanakubo, Yuki-shi, Ibaraki-ken, 307-0015 Japan
Section name	Internal Control Promotion Div.
Telephone number	+81-296-21-3700 (Sales Dept.)
Fax number	+81-296-21-3770
Emergency telephone number	+81-296-21-3700 (Sales Dept.)
Recommended uses and restrictions on use	Optical crystal material

SECTION 2 Hazards identification

GHS Classification (A classification by JIS Z 7252 "classification methods such as chemical substances based on GHS")

Physicochemical hazard	Explosives	Classification not possible
	Flammable gases (including chemically unstable gases)	Not applicable
	Aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Not applicable
	Flammable solids	Classification not possible
	Self-reactive substances and mixtures	Classification not possible
	Pyrophoric liquids	Not applicable
	Pyrophoric solids	Classification not possible
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which, in contact with water, emit flammable gases	Classification not possible
	Oxidizing liquids	Not applicable
	Oxidizing solids	Classification not possible
	Organic peroxides	Classification not possible
Health hazard	Corrosive to metals	Classification not possible
	Acute toxicity (oral)	Category 3
	Acute toxicity (dermal)	Classification not possible
	Acute toxicity (inhalation)	Classification not possible
	Skin corrosion/irritation	Classification not possible

CANON OPTRON INC.
 SDS Number: EB01C
 Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
 Revised Date 2018/6/6

	Eye damage/eye irritation	Category 2A
	Respiratory sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Category 2
	Effects on or via lactation	Classification not possible
	Specific target organ toxicity(single exposure)	Category 3(Respiratory tract irritation)
	Specific target organ toxicity(repeated exposure)	Category 1
	Aspiration hazard	Classification not possible
Environmental hazard	Hazard to the aquatic environment(acute hazard)	Classification not possible
	Hazard to the aquatic environment(long-term hazard)	Classification not possible
	Hazard to the ozone layer	Classification not possible

Label element

Pictogram (Symbol)

Skull and crossbones Exclamation Health Hazard



Signal word

Danger

Hazard statement

Toxic if swallowed.
 Causes serious eye irritation.
 May cause respiratory irritation.
 Suspected of damaging fertility or the unborn child.
 Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

【Safety measures】

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Wash hands thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.

CANON OPTRON INC.
 SDS Number: EB01C
 Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
 Revised Date 2018/6/6

【First-aid measures】	<p>IF SWALLOWED: Immediately call poison center or doctor/physician</p> <p>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If exposed or concerned: Get medical advice/attention. Call a poison center or doctor/physician if you feel unwell. Call a poison center or doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell.</p> <p>Specific treatment Rinse mouth. If eye irritation persists: Get medical advice/attention.</p>
【Storage】	<p>Store in a well-ventilated place. Keep container tightly closed. Store locked up.</p>
【Disposal】	<p>Dispose of contents/container in accordance with national regulations.</p>

SECTION 3 Composition and information ingredients

Substance/Mixture	Substance
Chemical name or generic name	<i>Barium fluoride</i>
Chemical formula	<i>BaF2</i>
CAS No.	<i>7787-32-8</i>
Concentration or concentration range	99.9%<
TSCA Inventory	<i>Barium fluoride (BaF2)</i>
EINECS number	<i>232-108-0</i>
Radioactive information	It does not use a radioactive substance as a material. Thus, evidence of ionizing radiation occurs is not present.

SECTION 4 First-aid measures

Inhalation	If you feel bad, get medical attention, attention.
Skin	Wash with soap and water. If you feel bad, get medical attention, diagnosis.
Eye	Rinse cautiously with water for several minutes. Then, be removed, if present and easy to do wear contact lenses. To continue the cleaning afterwards. If eye irritation persists, get medical attention, attention.
Ingestion	That you contact your doctor immediately. Rinse the mouth.
Protection of first aiders	No data available

SECTION 5 Fire-fighting measures

Extinguishing media	Water spray, foam, dry chemical, carbon dioxide, dry sand such
Extinguishing media are unsuitable	Rod-like drainage

CANON OPTRON INC.

SDS Number: EB01C

Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
Revised Date 2018/6/6

Specific hazards	The Move containers from fire area if this can be done without risk. Even after the fire, cooling the container thoroughly with a large amount of water. Immovable case, it is cooled with water spray in and around the container.
Specific extinguishing methods	The Move containers from fire area if this can be done without risk. Even after the fire, cooling the container thoroughly with a large amount of water. Immovable case, it is cooled with water spray in and around the container.
Protection of fire-fighters	I wear appropriate respiratory air, the protective clothing (heat resistance).

SECTION 6 Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Do not touch the spilled material, you do not walk therein.
Environmental precautions	The Note is discharged into rivers or the like, so as not to cause damage to the environment.
Methods and materials for containment and methods and materials for cleaning up	No data available
Secondary disaster prevention measures	No data available

SECTION 7 Handling and storage precautions

Handling

Technical measures	And made capital measures described in "SECTION 8 Exposure controls and personal protection", to wear protective equipment.
Safety handling precautions	Be sure to get the instruction manual before use. Do not handle until you read and understand all safety precautions. When you use this product, you should not eat, drink or smoke. Wash hands thoroughly after handling. Avoid swallowing. Do not get in eyes. I Wash hands after handling. Avoid the inhalation of dust, vapor or spray.

Storage

Safe storage conditions	To keep it under lock and key. Be stored in a cold dry plants and container tightly closed.
Safety packaging material	No data available

SECTION 8 Exposure controls and personal protection

BaF2

Permissible concentration

ACGIH

TWA 2.5 mg/m ³ , STEL - (as F) (1979 edition)

Engineering controls

The use of electrical, ventilation, lighting explosion proof.
And placing a safety shower and eye wash in the workplace handling or storage of this material.
There is no particular ventilation requirements.

CANON OPTRON INC.

SDS Number: EB01C

Product Name: BaF₂ (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1

Revised Date 2018/6/6

Personal protective equipment

Respiratory protection	Dust mask
Hand protection	Protective glove
Eye protection	Dust-proof glasses
Skin and body protection	Protective clothing

SECTION 9 Physical and chemical properties

Appearance

Physical state	Solid
Form	Plate, lens, disk
Colour	Transparent or white
Odour	None

BaF₂

pH	<i>No data available</i>
Melting point/Freezing point	<i>1287°C</i>
Boiling point/Initial boiling point and boiling range	<i>2260°C</i>
Flash point	<i>No data available</i>
Evaporation rate	<i>No data available</i>
Flammability (solid, gas)	<i>No data available</i>
Explosive limits	
LEL	<i>No data available</i>
UEL	<i>No data available</i>
Vapour pressure	<i>No data available</i>
Vapour density (air = 1)	<i>No data available</i>
Specific gravity (Relative density) (Density)	<i>4.89</i>
Solubility	
Water	<i>0.159g/100g(0°C) 0.162g/100g(18°C)</i>
Other solvents	<i>No data available</i>
n-octanol/Water partition coefficient	<i>No data available</i>
Auto-ignition temperature	<i>No data available</i>
Decomposition temperature	<i>No data available</i>
Viscosity (Coefficient of viscosity)	<i>No data available</i>

CANON OPTRON INC.

SDS Number: EB01C

Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
Revised Date 2018/6/6

Other data

None

SECTION 10 Stability and reactivity

BaF2

Reactivity	No data available
Chemical stability	I is considered stable.
Hazardous reactions	Do not react in the storage conditions and normal handling.
Conditions to avoid	No data available
Incompatible materials	Concentrated sulfuric acid
Hazardous decomposition products	By incompatible with concentrated sulfuric acid, and generate hydrogen fluoride gas.

SECTION 11 Hazard information

BaF2

Acute toxicity(oral)	LD50 value of 250mg/kg oral study in rats (EHC 107, 1990)
Acute toxicity(dermal)	No data available
Acute toxicity(inhalation)	The solid in the definition of GHS: (gas) inhalation. Inhalation (vapor): No data Inhalation (dust): No data Inhalation (mist): No data
Skin corrosion/irritation	stimulate the skin and the mucous membranes.
Eye damage/eye irritation	I is irritating to the eyes.
Respiratory sensitization/Skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	Decrease in the frequency of embryo the 5th at the cleavage stage, the decrease in birth weight, increased mortality at birth was seen when administered orally 0.03-0.1 of LD50 values in rats of pregnancy the first day of the substances, description of the (107, 1990 EHC) of teratogenic effects have not been reported.
Specific target organ toxicity(single exposure)	You are there is a respiratory tract irritation to fluoride ACGIH-TLV of 1 Priority document (2005).
Specific target organ toxicity(repeated exposure)	It has been that there is (fluorosis) effects on bone fluoride ACGIH-TLV of 1 Priority document (2005), it was classified as Category 1 (bone). In addition, changes in urine composition in the inhaled administration of 5.66mg/m ³ /4H/17 weeks to rats, normocytic anemia, weight loss have been observed (RTECS, 2004).
Aspiration hazard	No data available
Others	None

SECTION 12 Ecological information

CANON OPTRON INC.
 SDS Number: EB01C
 Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1
 Revised Date 2018/6/6

BaF2

Ecotoxicity

Fish	No data available
Crustaceantoxicity(single exposure)	No data available
Algae	No data available
Other organisms	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazard to the ozone layer	No data available
Others	No data available

SECTION 13 Notes on disposal

Waste from residues	Entrust the process to industrial waste disposal contractor has received a license from the governor.
Contaminated container and contaminated packaging	Recycle or in the clean container and take appropriate disposal in accordance with the criteria of the relevant legislation sequence municipality.

SECTION 14 Transport information

BaF2

International regulation

UN classification	6.1
UN number	1564
UN proper shipping name	BARIUM COMPOUND, N.O.S.
Packing group	III
Japanese laws and regulations	Poisonous and Deleterious Substances Control Law, Fire Service Act
Conditions and specific safety measures of transport	Requires retention of yellow card when transporting. Do not top up heavy objects. Do not transport with food and feedstuffs. During transport, I avoid direct rays of the sun, the loading of container damage, corrosion, so that there is no leakage, it is surely the prevention of collapse of cargo.

SECTION 15 Regulatory information (Japan)

BaF2

PRTR Law	None
Occupational Safety and Health Law	None

CANON OPTRON INC.

SDS Number: EB01C

Product Name: BaF2 (Optical Crystal)

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2014/9/1

Revised Date 2018/6/6

Poisonous and Deleterious Substances control Law	<i>There is it in the case of an application or an application</i>
Explosives control Law	<i>None</i>
High-pressure gas security Law	<i>None</i>
Fire fighting Law	<i>There is it in the case of an application or an application</i>
Chemical substances control Law	<i>None</i>
Ship safety Law	<i>There is it in the case of an application or an application</i>
Aviation Law	<i>There is it in the case of an application or an application</i>
Prevention of marine pollution Law	<i>None</i>
Pneumoconiosis Law	<i>None</i>
Note	Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

SECTION 16 Other information

The Safety Data Sheet (SDS) has been prepared based on currently available materials, information and data, and may be revised based on new information. Further, the important points in the SDS are made for the purpose of normal handling.

When handling the user product in a specialized manner, take the appropriate safety measures for the application or method.

Further, Canon Optron Inc. has paid sufficient attention to the described contents of the SDS, but does not guarantee the accuracy of its contents.

Literature Reference

[References]

Industrial Safety and Health Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Poisonous and Deleterious Substances Control Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Pollutant Release and Transfer Register All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Recommendations for Allowable Concentrations (Fiscal 2017): Japan Society for Occupational Health Journal of Occupational Health, Vol. 59 2017

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National Institute of Technology and Evaluation Homepage

Japan Advanced Information Center of Safety and Health Homepage

Ministry of Health, Labour and Welfare Homepage

[Regulatory review Tools]

ezCRIC (Japan Chemical Database Ltd)