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Safety Data Sheet

1. Chemical product and company identification

Product name : Cesium fluoride, 4N

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	07186
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1

Hazard pictograms

Signal word : Danger

Hazard statements : Causes severe skin burns and eye damage

Precautionary statements

Prevention : Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Rinse mouth. Do not induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.

Storage : Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national

and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
Cesium fluoride	≥ 99.99	CsF	Listed	236-487-3	13400-13-0

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.

First-aid measures after skin contact : Wash the affected areas under running water, get medical treatment as soon as possible.

First-aid measures after eye contact : Gently rinse the affected eyes with thin sodium chloride water solution and get medical treatment.

First-aid measures after ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.

Personal Protection in First Aid and Measures : Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media : This product is noncombustible.

Unsuitable extinguishing media : None

Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment : Sweep up in a chemical waste container. Flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

Technical measures	:	Wear appropriate protective equipment to avoid contact with skin or inhalation of dust.
Precautions for safe handling	:	Avoid formation of dust and aerosols.

Storage

Storage conditions	:	As the chemical is hygroscopic, keep the bottle tightly closed and store in a refrigerator (0-6℃).
Material used in packaging/containers	:	Polyethylene, Polypropylene, etc. Do not use glass, and many kinds of metals.

8. Exposure controls / Personal protection equipment

ACGIH TWA	2.5 mg/m³ (as F)

Appropriate engineering controls	:	Install a local ventilation system in case of dusty condition.

Protective equipment

Respiratory protection	:	If necessary, wear dust mask
Hand protection	:	Impervious protective gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Solid
Color	:	White
Odor	:	Odorless
pH	:	No data available
Melting point	:	684 ° C
Freezing point	:	No data available
Boiling point	:	1250 ° C
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability	:	Not flammable.
Vapor pressure	:	No data available
Relative density	:	4.61
Density	:	No data available
Relative gas density	:	No data available
Solubility	:	Water: 78.6 % (25℃)
Partition coefficient n-octanol/water (log Pow)	:	No data available
Explosive limits (vol %)	:	No data available
Viscosity, kinematic	:	No data available
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	A powerful fluorinating agent.
Chemical stability	:	Stable under normal conditions. Hygroscopic.
Possibility of hazardous reactions	:	Reacts vigorously with acids and emits corrosive hydrogen fluoride gas.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Acids, oxidizing substances.
Hazardous decomposition products	:	Fluorine, hydrogen fluoride.

11. Toxicological information

Acute toxicity (oral)	:	Classification not possible
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Causes severe skin burns Since the substance causes severe skin irritation, it was classified into category 1B.
Serious eye damage/irritation	:	Causes serious eye damage Since skin corrosion/irritation was classified into category 1B, this section was classified as category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Classification not possible IARC classifies fluoride as group 3 (not classifiable as to its carcinogenicity to humans). However, there is no information about cesium.
Reproductive toxicity	:	Classification not possible
STOT-single exposure	:	Classification not possible There is no data on this substance. However, there is a description that fluoride ions bind with serum calcium resulting in hypocalcemia, which may cause muscle tetany, decreased myocardial contractility, and cardiovascular collapse.
STOT-repeated exposure	:	Classification not possible There is no data on this substance. However, there is a report of lesions in bones related to fluorosis due to occupational exposure to inorganic fluoride in ACGIH's "FLUORIDES".
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Classification not possible
Aquatic chronic	:	Classification not possible

Persistence and degradability

No additional information available

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Roasting method : Recover metal cesium by roast reduction method. <Note> ＊In case of disposal by roasting method, it is desirable to entrust to disposal companies.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	1759
Proper Shipping Name (IMDG)	:	CORROSIVE SOLID, N.O.S.
Packing group (IMDG)	:	II
Transport hazard class(es) (IMDG)	:	8

Air transport(IATA)

UN-No. (IATA)	:	1759
Proper Shipping Name (IATA)	:	Corrosive solid, n.o.s.
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	8
Marine pollutant	:	Not applicable
MFAG-No	:	154

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources	:	Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) . NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.