



SAFETY DATA SHEET

MATERION

1. Identification of the substance or mixture and of the supplier

1.1 GHS product identifier	Calcium fluoride
1.2 Other means of identification	
Common name(s), synonym(s)	Calcium fluoride (CaF ₂) * Calcium fluoride * Calcium difluoride (as F)
SDS number	1GJ
Materion Code	1GJ
CAS number	7789-75-5
1.3 Recommendations and restrictions on the use of substances or mixtures	
Recommended use	Not available.
Recommended restrictions	Not available.
1.4 Supplier's details	
Manufacturer	
Company name	Materion Advanced Chemicals Inc.
Address	407 N 13th Street 1316 W. St. Paul Avenue Milwaukee WI 53233 United States
Telephone	414.212.0257
E-mail	advancedmaterials@materion.com
Contact person	Laura Hamilton
1.5 Emergency phone number	Chemtrec 800.424.9300

2. Hazards identification

2.1 GHS classification of substance or mixture, and national or regional information

Physical hazards	Not classified.
Health hazards	Acute toxicity, oral Category 5 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation Specific target organ toxicity, repeated exposure Category 2
Environmental hazards	Not classified.

2.2 GHS label elements

Hazard symbol(s)



Signal word

Warning

Hazard statement(s)

May be harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Do not breathe dust. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye/face protection. Use personal protective equipment as required.

Response	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. If eye irritation persists: Get medical advice/attention.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
2.3 Other hazards which do not result in GHS classification	The Safety Information Sheet Chemicals of hazardous chemical can be obtained through phone, email or on the company website.
Supplemental information	Not applicable.

3. Composition/information on ingredients

3.1 Substance

Chemical identity	Common name and synonym	CAS number and other unique identifiers	Concentration or concentration range
Calcium fluoride	Calcium fluoride (CaF ₂) Calcium fluoride Calcium difluoride (as F)	7789-75-5	90 - 100

4. First-aid measures

4.1 Description of first-aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical advice/attention if you feel unwell. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed Irritation of eyes and mucous membranes. Prolonged exposure may cause chronic effects.

4.3 Indication of immediate medical considerations and important specific treatment that should be performed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General advice IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

5.1 Prohibited extinguishing media and suitable extinguishing media

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	None known.

5.2 Specific hazards arising from chemicals During fire, gases hazardous to health may be formed.

5.3 Special protective equipment and precautions for fire-fighters Wear suitable protective equipment.

Fire fighting equipment/instructions Use water spray to cool unopened containers.

General fire hazards No unusual fire or explosion hazards noted.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away.
- 6.2 Environmental precautions** Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.
- 6.3 Methods and materials for containment and cleaning up** If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

- 7.1 Precautions for safe handling, use and storage** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid contact with skin and eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Practice good housekeeping. Avoid release to the environment.
- 7.2 Conditions for safe storage, including any incompatibilities** Store locked up. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep out of the reach of children.

8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Thailand. OELs. Notification of the Ministry of Interior, Re: Working Safety in Respect to Environmental Condition (Chemical)

Material	Type	Value	Form
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3	Dust.
		2.5 mg/m3	

US. ACGIH Threshold Limit Values

Material	Type	Value
Calcium fluoride (CAS 7789-75-5)	TWA	2.5 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Calcium fluoride (CAS 7789-75-5)	3 mg/l	Fluoride	Urine	*
	2 mg/l	Fluoride	Urine	*

* - For sampling details, please see the source document.

- 8.2 Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Provide eyewash station.

8.3 Personal protective measures

Eye/face protection Wear eye/face protection. Use tight fitting goggles if dust is generated.

Skin protection

Hand protection Not normally needed.

Other Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

9. Physical and chemical properties

9.1 Appearance	Powder.
Physical state	Solid.
Form	Powder.
Color	Not available.
9.2 Odor	Not available.
9.3 Odor threshold limit	Not available.
9.4 pH	Not available.
9.5 Melting point/freezing point	2557.4 °F (1403 °C)
9.6 Initial boiling point and boiling range	4532 °F (2500 °C)
9.7 Flash point	Not available.
9.8 Evaporation rate	Not available.
9.9 Flammability (solid, gas)	Not available.
9.10 Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
9.11 Vapor pressure	< 0.0000001 kPa at 25 °C
9.12 Vapor density	Not available.
9.13 Relative density	Not available.
9.14 Solubility(ies)	
Solubility (water)	Not available.
9.15 Partition coefficient: n-octanol/water	Not available.
9.16 Auto-ignition temperature	Not available.
9.17 Decomposition temperature	Not available.
9.18 Viscosity	Not available.
Other information	
Density	3.18 g/cm ³ estimated
Molecular formula	Ca-F ₂
Molecular weight	78.07 g/mol
Specific gravity	3.18

10. Stability and reactivity

10.1 Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2 Chemical stability	Material is stable under normal conditions.
10.3 Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4 Conditions to avoid	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
10.5 Incompatible materials	None known.
10.6 Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

11.1 Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause damage to organs by inhalation. Inhalation of dusts may cause respiratory irritation.
Skin contact	Due to lack of data the classification is not possible.
Eye contact	Causes serious eye irritation. Dust in the eyes will cause irritation.
Ingestion	May be harmful if swallowed.

11.2 Symptoms related to physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

11.3 Delayed and immediate effects, including chronic effects from short- and long-term exposure Occupational exposure to the substance or mixture may cause adverse effects.

11.4 Numerical values of toxicity

Acute toxicity May be harmful if swallowed. May cause respiratory irritation.

Product	Species	Test Results
Calcium fluoride (CAS 7789-75-5)		
<u>Acute</u>		
Oral		
LD50	Rat	4250 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Due to lack of data the classification is not possible.

Serious eye damage/eye irritation Causes serious eye irritation. Dust in the eyes will cause irritation.

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

Skin sensitization Due to lack of data the classification is not possible.

Germ cell mutagenicity Due to lack of data the classification is not possible.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

Calcium fluoride (CAS 7789-75-5) A4 Not classifiable as a human carcinogen.

IARC. Monographs on the evaluation of carcinogenic risks to humans

Calcium fluoride (CAS 7789-75-5) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity May cause harm to breastfed babies. Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Respiratory tract irritation.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Due to lack of data the classification is not possible.

Further information This product has no known adverse effect on human health.

12. Ecological information

12.1 Ecological toxicity Contains a substance which causes risk of hazardous effects to the environment.

12.2 Persistence and degradability No data is available on the degradability of this product.

12.3 Bioaccumulative potential No data available.

12.4 Mobility in soil No data available.

12.5 Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

ADR

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Federal regulations

Hazardous substances in the work place (DLPW Notification Re: List of Hazardous Chemicals, Royal Gazette, Vol. 130 Part 185 Ngor, issued December 20, B.E.2556 (2013))

Not listed.

Thailand. Explosive Substances & Precursors (Ministry of Defense Notification Re: Arms Subject to Imports License)

Not regulated.

Thailand. Reportable Hazardous Substances (Notification of Ministry of Industry Re: Bases respecting report of quantity of hazardous materials under Department of Industrial Works, B.E. 2547)

Not regulated.

International regulations The product does not need to be labelled in accordance with EC directives or respective national laws.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-14-2019
Version #	01
Disclaimer	<p>This safety data sheet was prepared in accordance with the Safety Data Sheet for Chemical Products (JIS Z 7250:2010). Additional information is given in the Material Safety Data Sheet. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations. The information in the sheet was written based on the best knowledge and experience currently available.</p>
Revision information	Product and Company Identification: Synonyms