



SAFETY DATA SHEET

MATERION

1. Identification

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|--------------------------------------|---|
| Product identifier | Calcium fluoride |
| Other means of identification | |
| SDS number | 1GJ |
| Materion Code | 1GJ |
| CAS number | 7789-75-5 |
| Synonyms | Calcium fluoride (CaF ₂) * Calcium fluoride * Calcium difluoride (as F) |

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

| | |
|-------------------------------|---|
| Company name | Materion Electronic Materials |
| Address | 6070 Parkland Blvd Mayfield Heights, Ohio 44124 United States |
| Telephone | 1.216.383.4019 |
| E-mail | Materion-PS@materion.com |
| Contact person | Product Stewardship Director |
| Emergency phone number | See Section 16 |

2. Hazard(s) identification

| | | |
|------------------------------|---|---|
| Physical hazards | Not classified. | |
| Health hazards | Skin corrosion/irritation | Category 2 |
| | Serious eye damage/eye irritation | Category 2B |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| Environmental hazards | Not classified. | |
| OSHA defined hazards | Not classified. | |

Label elements



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| Signal word | Warning |
| Hazard statement | Causes skin irritation. Causes eye irritation. May cause respiratory irritation. |
| Precautionary statement | |
| Prevention | Do not breathe dust/fume/vapors/spray. Wear protective gloves/eye protection/face protection. Use only outdoors or in a well ventilated area. |
| Response | Take off contaminated clothing and wash it before reuse. Call a poison center/doctor if you feel unwell. If skin irritation occurs: 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. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | For further information, please contact the Product Stewardship Department at +1.800.862.4118. |

3. Composition/information on ingredients

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|------------------|---|------------|-----|
| Calcium fluoride | Calcium fluoride (CaF ₂) Calcium fluoride Calcium difluoride (as F) | 7789-75-5 | 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. 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 | Wash off with soap and water. Get medical attention if irritation develops and persists. |
| Eye contact | Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Get medical advice/attention if you feel unwell. |
| Most important symptoms/effects, acute and delayed | Dusts may irritate the respiratory tract, skin and eyes. Prolonged exposure may cause chronic effects. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. |
| General information | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Wear suitable protective equipment. |
| Fire fighting equipment/instructions | Use water spray to cool unopened containers. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. 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. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

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

US. OSHA Table Z-2 Permissible Exposure Limits (PEL) (29 CFR 1910.1000)

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

US. ACGIH Threshold Limit Values (TLV)

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

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

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

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

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

Biological limit values

ACGIH Biological Exposure Indices (BEI)

| 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.

Appropriate engineering controls

Good general ventilation 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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

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|---------------------------------------|---|
| Skin protection | |
| Hand protection | Not normally needed. Wear appropriate chemical resistant gloves. |
| Other | Wear suitable protective clothing. |
| Respiratory protection | Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

9. Physical and chemical properties

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|---|----------------------------------|
| Appearance | Powder. |
| Physical state | Solid. |
| Form | Powder. |
| Color | Not available. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | 2557.4 °F (1403 °C) |
| Initial boiling point and boiling range | 4532 °F (2500 °C) |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | <0.0000001 kPa (77 °F (25 °C)) |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Density | 3.18 g/cm ³ estimated |
| Explosive properties | Not explosive. |
| Molecular formula | Ca-F ₂ |
| Molecular weight | 78.07 g/mol |
| Oxidizing properties | Not oxidizing. |
| Specific gravity | 3.18 |

10. Stability and reactivity

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

11. Toxicological information

Information on likely routes of exposure

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|---------------------|--|
| Inhalation | Dust may irritate respiratory system. Prolonged inhalation may be harmful. |
| Skin contact | Dust or powder may irritate the skin. |
| Eye contact | Dust in the eyes will cause irritation. |
| Ingestion | Not available. |

Symptoms related to the physical, chemical and toxicological characteristics Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects

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|--|---|
| Acute toxicity | May cause respiratory irritation. Not known. |
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. |
| Serious eye damage/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. |

IARC Monographs. Overall Evaluation of Carcinogenicity

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

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

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| Reproductive toxicity | Due to lack of data the classification is not possible. |
| 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. |
| Chronic effects | Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure. |

12. Ecological information

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|--------------------------------------|---|
| Ecotoxicity | Contains a substance which causes risk of hazardous effects to the environment. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |

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.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

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 Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Listed.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

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

Issue date 08-28-2013

Revision date 04-22-2024

Version # 08

Further information Transportation Emergency
Call Chemtrec at:
US: 800.424.9300
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
South Korea Toll-free Number – 080-880-0468

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Revision information

This document has undergone significant changes and should be reviewed in its entirety.