



## **MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Calcium Fluoride

INGREDIENTS: Calcium Fluoride

SYNONYMS: Calcium difluoride, fluorspar, Irtran 3, liparite, met-spar, acid-spar

MOLECULAR FORMULA: Ca F<sub>2</sub>

CAS No: 7789-75-5

EINECS No: 232-188-7

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### **SECTION 1 – PHYSICAL/CHEMICAL CHARACTERISTICS**

APPEARANCE: white powder or colourless crystals

MELTING POINT: 1360 C

BOILING POINT: 2500 C

DENSITY (G CM<sup>-3</sup>): 3.18

WATER SOLUBILITY: negligible

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### **SECTION 2 – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY OF THE PRODUCT: Non-flammable.

AUTO-IGNITION TEMPERATURE: Not applicable.

FLASH POINTS: Not applicable.

FLAMMABLE LIMITS: Not applicable.

PRODUCTS OF COMBUSTION: Not available.

FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES: Not applicable.

EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

FIRE FIGHTING MEDIA AND INSTRUCTIONS: Not applicable.

SPECIAL REMARKS ON FIRE HAZARDS: When heated to decomposition it emits toxic fumes of hydrogen fluoride

SPECIAL REMARKS ON EXPLOSION HAZARDS: Not available.

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### **SECTION 3 – REACTIVITY DATA**

STABILITY: The product is stable.

INSTABILITY TEMPERATURE: Not available.

CONDITIONS OF INSTABILITY: Incompatible materials, dust generation

INCOMPATIBILITY WITH VARIOUS SUBSTANCES: Not available.

CORROSIVITY: Not available.

SPECIAL REMARKS ON REACTIVITY:

Hygroscopic; keep container tightly closed. Reacts with hot concentrated sulfuric acid to liberate hydrogen fluoride. There is a hazard of Hydrofluoric acid being formed.

SPECIAL REMARKS ON CORROSIVITY: Not available.

POLYMERIZATION: Will not occur.

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### **SECTION 4 – HEALTH HAZARD DATA**

POTENTIAL ACUTE HEALTH EFFECTS:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.

POTENTIAL CHRONIC HEALTH EFFECTS: CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. The substance may be toxic to blood, kidneys, lungs, liver, cardiovascular system, skin, bones, central nervous system (CNS), teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

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### **SECTION 5 – FIRST AID PROCEDURES**

EYE CONTACT: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

SERIOUS SKIN CONTACT: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

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INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SERIOUS INHALATION: Not available.

INGESTION: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

SERIOUS INGESTION: Not available.

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## **SECTION 6 – SPECIAL HANDLING INFORMATION**

PRECAUTIONS: Keep locked up.. Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

STORAGE: Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area.

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## **SECTION 7 – TOXICOLOGICAL INFORMATION**

ROUTES OF ENTRY: Inhalation. Ingestion.

TOXICITY TO ANIMALS: Acute oral toxicity (LD50): 4250 mg/kg [Rat].

CHRONIC EFFECTS ON HUMANS:

DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. May cause damage to the following organs: blood, kidneys, lungs, liver, cardiovascular system, skin, bones, central nervous system (CNS), teeth.

OTHER TOXIC EFFECTS ON HUMANS: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

SPECIAL REMARKS ON TOXICITY TO ANIMALS: Not available.

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data.

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS:

Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: Causes respiratory tract irritation. Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea, salivation, thirst, abdominal pain, fever, labored breathing (respiratory depression, apnea, dyspnea). Exposure to fluorides may also cause disturbed color vision, hypocalcemia, hyperkalemia, and hypomagnesemia, and may result in systemic toxic effects on the heart/cardiovascular system (hypotension, tachycardia, arrhythmia, weak pulse, cardiovascular collapse), liver (hepatic enzymes increased), and kidneys (abnormal renal function, renal damage). It may also affect behavior/Central Nervous System (CNS depression - headache, dizziness, weakness, somnolence, ataxia, loss of consciousness). Other neurological symptoms of acute fluoride ingestion may include muscle weakness, difficulty speaking, fitfulness(hyperreflexia), tetany, numbness or tingling of the extremities. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause dermatitis.

INHALATION: Prolonged or repeated inhalation may cause bronchitis, asthma, silicosis, increase in respiratory infections, pulmonary lesions. Ingestion: Prolonged or repeated

ingestion cause diseases of the blood, teeth, bones and other organs (osteosclerosis, fluorosis). (Fluorosis is characterized by vomiting, diarrhea or constipation, weakness joint stiffness, loss of appetite, anemia).