

# SAFETY DATA SHEET

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## **SECTION 1. IDENTIFICATION**

Product Identifier: 98% (1N8) Nickel Fluoride

Product Code: NI-F-018

CAS Number: 10028-18-9

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351 Emergency telephone number: +1 800-424-9300

## **SECTION 2. HAZARDS IDENTIFICATION**

Classification of the substance or mixture GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Acute toxicity, Oral (Category 3), H301 Acute toxicity, Inhalation (Category 3), H331 Skin irritation (Category 2), H315 Serious eye damage (Category 1), H318 Respiratory sensitization (Category 1), H334 Skin sensitization (Category 1), H317 Carcinogenicity, Inhalation (Category 1B), H350i Reproductive toxicity (Category 1B), H360 Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Respiratory Tract, H372



Signal word Danger Hazard statement(s) H301 + H331 Toxic if swallowed or if inhaled. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H350i May cause cancer by inhalation.

H360 May damage fertility or the unborn child.

H372 Causes damage to organs (Respiratory Tract) through

prolonged or repeated exposure if inhaled.

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P285 In case of inadequate ventilation wear respiratory protection.

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable

for breathing. Call a POISON CENTER/ doctor.

P305 + P351 + P338 +

P310

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/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS Strong hydrogen fluoride-releaser

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : F2Ni Molecular weight : 96.69 g/mol CAS-No. : 10028-18-9 EC-No. : 233-071-3

#### **SECTION 4. FIRST AID MEASURES**

Description of first-aid measures General advice

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure.Consult a physician. Show this material safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

First treatment with calcium gluconate paste.Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a

physician.Continue rinsing eyes during transport to hospital.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed No data available

## SECTION 5. FIREFIGHTING MEASURES

Extinguishing media Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Special hazards arising from the substance or mixture Hydrogen fluoride, Nickel/nickel oxides Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

## SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place. Do not store in glass Keep in a dry place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Personal protective equipment

Eve/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance Form: powder Odor odorless Odor Threshold No data available pH No data available Melting point/freezing point No data available Initial boiling point and boiling range No data available Flash point ()Not applicable Evaporation rate No data available Flammability (solid, gas) The product is not flammable. Upper/lower flammability or explosive limits No data available Vapor pressure No data available Vapor density No data available Relative density 4.72 g/cm3 at 25 °C (77 °F) Water solubility ca.40 g/l at 25 °C (77 °F) - soluble Partition coefficient: n-octanol/water No data available Autoignition temperature No data available Decomposition temperature No data available Viscosity No data available Explosive properties No data available Oxidizing properties No data available

## SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available Chemical stability Stable under recommended storage conditions. Possibility of hazardous reactions No data available Conditions to avoid Reacts dangerously with glass. Incompatible materials glass Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Hydrogen fluoride, Nickel/nickel oxides

#### SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity LD50 Oral - Rat - female - 178 mg/kg (OECD Test Guideline 425) Inhalation: No data available LD50 Dermal - Rat - male - > 100 mg/kg Remarks: (ECHA) No data available Skin corrosion/irritation Skin - Rabbit Result: Irritating to skin. - 4 h (OECD Test Guideline 404) Serious eye damage/eye irritation Eyes - Rabbit Result: Causes serious eye damage. (OECD Test Guideline 405)

Respiratory or skin sensitization Maximization Test - Guinea pig Result: positive (OECD Test Guideline 406) Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) May cause allergy or asthma symptoms or breathing difficulties if inhaled. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Germ cell mutagenicity Suspected of causing genetic defects. In vitro mammalian cell gene mutation test mouse lymphoma cells Result: positive **OECD** Test Guideline 474 Rat - male Result: negative Carcinogenicity Positive evidence from human epidemiological studies (inhalation) IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Nickel(2+) fluoride) 1 - Group 1: Carcinogenic to humans (Nickel(2+) fluoride) NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. Reproductive toxicity May damage the unborn child. Specific target organ toxicity - single exposure No data available Specific target organ toxicity - repeated exposure Inhalation - Causes damage to organs through prolonged or repeated exposure. -**Respiratory Tract** Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Aspiration hazard No data available Additional Information RTECS: QR6825000 Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. Salivation, Nausea, Vomiting, Fever, Dermatitis, Gastrointestinal disturbance, Material reacts with moisture on the skin, eyes, and mucous membranes to generate hydrogen fluoride. Hydrogen fluoride is extremely destructive and may cause deep progressive burns that induce subcutaneous tissues to become blanched and bloodless resulting in lesions of dead tissue that are slow to heal. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 15.3 mg/l - 96 h Remarks: (ECHA) Toxicity to daphnia and other aquatic invertebrates static test LC50 - Ceriodaphnia dubia (water flea) - 0.074 mg/l - 48h (US-EPA) Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - > 0.0815 - < 0.148 mg/l - 72 h (OECD Test Guideline 201) Toxicity to bacteria EC50 - activated sludge - 33 mg/l - 30 min (ISO 8192) Persistence and degradability The methods for determining biodegradability are not applicable to inorganic substances. **Bioaccumulative potential** No data available Mobility in soil No data available Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods Product Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Contaminated packaging Dispose of as unused product.

#### **SECTION 14. TRANSPORT INFORMATION**

DOT (US) UN number: 3288 Class: 6.1 Packing group: III Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(2+) fluoride) Reportable Quantity (RQ): Poison Inhalation Hazard: No IMDG UN number: 3288 Class: 6.1 Packing group: III EMS-No: F-A, S-A Proper shipping name: TOXIC SOLID, INORGANIC, N.O.S. (Nickel(2+) fluoride) Marine pollutant : yes IATA UN number: 3288 Class: 6.1 Packing group: III Proper shipping name: Toxic solid, inorganic, n.o.s. (Nickel(2+) fluoride)

## **SECTION 15. REGULATORY INFORMATION**

SARA 302 Components This material does not contain any components with a section 302 EHS TPQ. SARA 313 Components The following components are subject to reporting levels established by SARA Title III, Section 313: Nickel(2+) fluoride CAS-No. 10028-18-9 SARA 311/312 Hazards Acute Health Hazard, Chronic Health Hazard Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act. Pennsylvania Right To Know Components Nickel(2+) fluoride CAS-No. 10028-18-9

## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.