

Sodium fluoride

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of issue: 1/28/2019 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|----------------|-------------------|
| Product form | : Substance |
| Substance name | : Sodium fluoride |
| Chemical name | : sodium fluoride |
| IUPAC name | : Natriumfluoride |
| EC Index-No. | : 009-004-00-7 |
| EC-No. | : 231-667-8 |
| CAS-No. | : 7681-49-4 |
| Product code | : 12769293 |
| Formula | : NaF |
| Product group | : Raw material |

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

| | |
|----------------------------------|--|
| Main use category | : Industrial use, Professional use |
| Industrial/Professional use spec | : Industrial For professional use only Laboratory use. |

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Scafell Organics
Molekula Ltd
Lingfield Way
Darlington - England
T +44 (0) 1949 823777 / +44 (0) 7590 545705
info@molekula.com / kbowen@molekula.com - www.molekula.com

1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| | |
|---|------|
| Acute toxicity (oral), Category 3 | H301 |
| Skin corrosion/irritation, Category 2 | H315 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Full text of H statements : see section 16 | |

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

| | |
|--------------------------------|--|
| Signal word (CLP) | : Danger |
| Hazard statements (CLP) | : H301 - Toxic if swallowed. H315 - Causes skin irritation. H319 - Causes serious eye irritation. |
| Precautionary statements (CLP) | : P232 - Protect from moisture. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective clothing, eye protection, face protection, protective gloves. P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P330 - Rinse mouth. |
| EUH-statements | : EUH032 - Contact with acids liberates very toxic gas. |

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2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

| Name | Product identifier | % |
|-----------------|--|-----|
| Sodium fluoride | (CAS-No.) 7681-49-4 (EC-No.) 231-667-8 (EC Index-No.) 009-004-00-7 | 100 |

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If possible show this sheet, if not available show packaging or label. Do not leave affected person unattended. |
| First-aid measures after inhalation | : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. If experiencing respiratory symptoms: Get medical advice/attention. |
| First-aid measures after skin contact | : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Do not remove clothing if it sticks to the skin. In case of skin contact, wearing rubber gloves rub 2.5% calcium gluconate gel continuously into the affected area for 1.5 hours or until further medical care is available. Get immediate medical advice/attention. |
| First-aid measures after eye contact | : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persists. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Give milk to drink. Get medical advice/attention. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|-------------------------------------|--|
| Symptoms/effects | : SYMPTOMS MAY BE DELAYED. |
| Symptoms/effects after inhalation | : May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Symptoms/effects after skin contact | : Causes skin irritation. irritation (itching, redness, blistering). MAY BE HARMFUL IF ABSORBED THROUGH SKIN. |
| Symptoms/effects after eye contact | : Causes serious eye irritation. redness, itching, tears. |
| Symptoms/effects after ingestion | : Swallowing a small quantity of this material will result in serious health hazard. Absorption of excessive fluorides can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys). Abdominal pain, nausea. |

4.3. Indication of any immediate medical attention and special treatment needed

Get immediate medical advice/attention.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|------------------------------------|
| Suitable extinguishing media | : Dry powder. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : hydrogen fluoride. Sodium Oxides.

5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Precautionary measures fire | : Exposure to fire/heat: seal off low-lying areas. Keep container tightly closed and away from heat, sparks and flame. |
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. Use extinguishing agent suitable for surrounding fire. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |
| Other information | : Warn all persons of toxic hazard. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Isolate from fire, if possible, without unnecessary risk. No flames, no sparks. Eliminate all sources of ignition. Avoid dust formation.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

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Emergency procedures : Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not touch or walk on the spilled product.

Measures in case of dust release : Keep upwind. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc).

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Use self-contained breathing apparatus and chemically protective clothing.

Emergency procedures : Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimise generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Use only equipment of compatible materials of construction.

Precautions for safe handling : Provide local exhaust or general room ventilation. Avoid creating or spreading dust.

Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Always wash hands after handling the product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ensure adequate ventilation, especially in confined areas.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Keep container closed when not in use. Protect from moisture. Store contents under inert gas.

Incompatible products : Glass packaging. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. Moisture sensitive. Material is hygroscopic.

Storage area : Store at ambient temperature.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium fluoride (7681-49-4)

| | | |
|----------------|------------------------------|---|
| United Kingdom | WEL TWA (mg/m ³) | 2.5 mg/m ³ Where no specific short-term exposure limit is listed, a figure three |
|----------------|------------------------------|---|

8.2. Exposure controls

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Provide local exhaust or general room ventilation.

Personal protective equipment:

Wear recommended personal protective equipment. Avoid all unnecessary exposure.

Hand protection:

The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374

| Type | Material | Permeation | Thickness (mm) | Penetration | Standard |
|-------------------|----------------------|-------------------|----------------|-------------|----------|
| Disposable gloves | Nitrile rubber (NBR) | 6 (> 480 minutes) | 0.11 | | EN 374 |

Eye protection:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against powders and dusts. Chemical goggles or safety glasses

| Type | Use | Characteristics | Standard |
|-----------------------------|------|-------------------|----------|
| Safety glasses, Face shield | Dust | With side shields | EN 166 |

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| | | | |
|--|--------------------|------------------|-----------------|
| Skin and body protection: | | | |
| Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use | | | |
| Type | | Standard | |
| Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product | | EN ISO 13982 | |
| Respiratory protection: | | | |
| Self contained breathing apparatus, in case of emergency. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended | | | |
| Device | Filter type | Condition | Standard |
| Respiratory protective device with a particle filter | Type P3 | Dust protection | EN 14387 |

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--------------------------|
| Physical state | : Solid |
| Appearance | : Powder. |
| Molecular mass | : 41.99 g/mol |
| Colour | : white. |
| Odour | : odourless. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : 993 °C lit. |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapour pressure | : 1.9 hPa |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 2.78 g/cm ³ |
| Solubility | : No data available |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Contact with acids liberates very toxic gas. Highly reactive material.

10.4. Conditions to avoid

Moisture. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Glass. Strong acids.

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10.6. Hazardous decomposition products

hydrogen fluoride. Sodium Oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Toxic if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Sodium fluoride (7681-49-4)

| | |
|---|--|
| LD50 oral rat | 148.5 mg/kg |
| Skin corrosion/irritation | : Causes skin irritation. |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitisation | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Reproductive toxicity | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT-single exposure | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| STOT-repeated exposure | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Aspiration hazard | : Not classified |
| Additional information | : Based on available data, the classification criteria are not met |
| Potential adverse human health effects and symptoms | : Toxic if swallowed. |

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Sodium fluoride (7681-49-4)

| | |
|----------------|---|
| LC50 fish 1 | 200 mg/l <i>Oncorhynchus mykiss</i> (rainbow trout) - 200 mg/l - 96 h |
| EC50 Daphnia 1 | 98 mg/l <i>Daphnia magna</i> (Water flea) - 98 mg/l - 48 h |

12.2. Persistence and degradability

Sodium fluoride (7681-49-4)

Persistence and degradability : No data available.

12.3. Bioaccumulative potential

Sodium fluoride (7681-49-4)

Bioaccumulative potential : No data available.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Sodium fluoride (7681-49-4)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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Ecology - waste materials

: Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

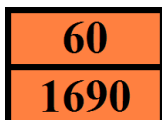
| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| 14.1. UN number | | | | |
| 1690 | 1690 | 1690 | 1690 | 1690 |
| 14.2. UN proper shipping name | | | | |
| SODIUM FLUORIDE, SOLID | SODIUM FLUORIDE, SOLID | Sodium fluoride, solid | SODIUM FLUORIDE, SOLID | SODIUM FLUORIDE, SOLID |
| Transport document description | | | | |
| UN 1690 SODIUM FLUORIDE, SOLID (Sodium fluoride), 6.1, III, (E) | UN 1690 SODIUM FLUORIDE, SOLID (Sodium fluoride), 6.1, III | UN 1690 Sodium fluoride, solid (Sodium fluoride), 6.1, III | UN 1690 SODIUM FLUORIDE, SOLID (Sodium fluoride), 6.1, III | UN 1690 SODIUM FLUORIDE, SOLID (Sodium fluoride), 6.1, III |
| 14.3. Transport hazard class(es) | | | | |
| 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
|  |  |  |  |  |
| 14.4. Packing group | | | | |
| III | III | III | III | III |
| 14.5. Environmental hazards | | | | |
| Dangerous for the environment : No | Dangerous for the environment : No Marine pollutant : No | Dangerous for the environment : No | Dangerous for the environment : No | Dangerous for the environment : No |

No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : T5
Limited quantities (ADR) : 5kg
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P002, IBC08, LP02, R001
Special packing provisions (ADR) : B3
Mixed packing provisions (ADR) : MP10
Portable tank and bulk container instructions (ADR) : T1
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAH
Tank special provisions (ADR) : TU15, TE19
Vehicle for tank carriage : AT
Transport category (ADR) : 2
Special provisions for carriage - Bulk (ADR) : VC1, VC2, AP7
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13, CV28
Special provisions for carriage - Operation (ADR) : S9
Hazard identification number (Kemler No.) : 60
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : ZZ

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Transport by sea

| | |
|------------------------------------|---|
| Packing instructions (IMDG) | : P002, LP02 |
| IBC packing instructions (IMDG) | : IBC08 |
| IBC special provisions (IMDG) | : B3 |
| Tank instructions (IMDG) | : T1 |
| Tank special provisions (IMDG) | : TP33 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-A |
| Stowage category (IMDG) | : A |
| Segregation (IMDG) | : SG35 |
| Properties and observations (IMDG) | : White crystals or powder. React with acids, evolving hydrogen fluoride, a toxic, irritating and corrosive gas, apparent as white fumes. Toxic if swallowed, by skin contact or by inhalation. |

Air transport

| | |
|--|---------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y645 |
| PCA limited quantity max net quantity (IATA) | : 10kg |
| PCA packing instructions (IATA) | : 670 |
| PCA max net quantity (IATA) | : 100kg |
| CAO packing instructions (IATA) | : 677 |
| CAO max net quantity (IATA) | : 200kg |
| ERG code (IATA) | : 6L |

Inland waterway transport

| | |
|-----------------------------------|----------|
| Classification code (ADN) | : T5 |
| Special provisions (ADN) | : 802 |
| Limited quantities (ADN) | : 5 kg |
| Excepted quantities (ADN) | : E1 |
| Carriage permitted (ADN) | : B |
| Equipment required (ADN) | : PP, EP |
| Number of blue cones/lights (ADN) | : 0 |

Rail transport

| | |
|---|---------------------------|
| Classification code (RID) | : T5 |
| Excepted quantities (RID) | : E1 |
| Packing instructions (RID) | : P002, IBC08, LP02, R001 |
| Special packing provisions (RID) | : B3 |
| Mixed packing provisions (RID) | : MP10 |
| Portable tank and bulk container instructions (RID) | : T1 |
| Portable tank and bulk container special provisions (RID) | : TP33 |
| Tank codes for RID tanks (RID) | : SGAH |
| Special provisions for RID tanks (RID) | : TU15 |
| Transport category (RID) | : 2 |
| Special provisions for carriage – Bulk (RID) | : VC1, VC2, AP7 |
| Special provisions for carriage - Loading, unloading and handling (RID) | : CW13, CW28, CW31 |
| Colis express (express parcels) (RID) | : CE11 |
| Hazard identification number (RID) | : 60 |

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Sodium fluoride is not on the REACH Candidate List

Sodium fluoride is not on the REACH Annex XIV List

Directive 2012/18/EU (SEVESO III)

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15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

| Full text of H- and EUH-statements: | |
|-------------------------------------|---|
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| H301 | Toxic if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| EUH032 | Contact with acids liberates very toxic gas. |

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product