

SAFETY DATA SHEET



Revision date: 18-Jul-2024

Revision Number 6

Section 1: Identification

Product identifier

Product Name SODIUM FLUOROSILICATE

Product Code(s) 000031020201

Other means of identification

UN number or ID number 2674

CAS No. 16893-85-9

Synonyms Disodium hexafluorosilicate; Sodium silicon fluoride; Sodium silicofluoride.

Recommended use of the chemical and restrictions on use

Recommended use Fluoridation of water.

Uses advised against No information available.

Details of manufacturer or importer

Supplier

IXOM Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

Section 2: Hazard identification

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

GHS Classification

| | |
|---|------------|
| Acute toxicity - Oral | Category 3 |
| Acute toxicity - Dermal | Category 3 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 3 |
| Serious eye damage/eye irritation | Category 2 |
| Specific target organ toxicity (repeated exposure) | Category 1 |

Label elements

Skull and crossbones
Health hazard
Exclamation mark



Signal word
DANGER

Hazard statements

H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Do not breathe dusts or mists.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/clothing and eye/face protection.
Avoid release to the environment.

Precautionary Statements - Response

Get medical advice/attention if you feel unwell.
Specific treatment (see First aid on this SDS).
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
Remove/Take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Rinse mouth.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Other hazards which do not result in classification

Harmful to aquatic life with long lasting effects.

Section 3: Composition and information on ingredients

| Chemical name | CAS No. | Weight-% |
|-----------------------|------------|----------|
| Sodium fluorosilicate | 16893-85-9 | >95 |

Section 4: First aid measures

Description of first aid measures

| | |
|-----------------------|---|
| General advice | For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance. |
| Inhalation | Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. |
| Eye contact | In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur. |
| Skin contact | Wash skin with soap and water. Get medical attention if symptoms occur. |
| Ingestion | Clean mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. |

Most important symptoms and effects, both acute and delayed

Symptoms Irritating. May cause redness and tearing of the eyes.

Effects of Exposure No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians A calcic depletion may occur. A supervision of the acid-base balance and the calcium rate in the serum of the blood is necessary.

Section 5: Firefighting measures**Suitable Extinguishing Media**

Suitable extinguishing media Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Non-combustible. Environmentally hazardous.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code 2X

Section 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions Avoid contact with skin, eyes or clothing. Avoid generation of dust. Do not breathe dust. Do not touch or walk through spilled material. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment as required. Wash thoroughly after

handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink or smoke when using this product.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust.

Section 7: Handling and storage

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Do not breathe dust. Do not eat, drink or smoke when using this product. Use personal protection equipment. Wash thoroughly after handling. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store away from foodstuffs. Keep container closed when not in use.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Strong acids. Mineral acids. Iron. Alkalis.

Section 8: Exposure controls and personal protection

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

| Chemical name | Australia | New Zealand | ACGIH TLV |
|-------------------------------------|----------------------------|----------------------------|------------------------------|
| Sodium fluorosilicate 16893-85-9 | TWA: 2.5 mg/m ³ | TWA: 2.5 mg/m ³ | TWA: 2.5 mg/m ³ F |

| Chemical name | European Union | United Kingdom | Germany DFG |
|-------------------------------------|----------------------------|---|---------------------------------|
| Sodium fluorosilicate 16893-85-9 | TWA: 2.5 mg/m ³ | TWA: 2.5 mg/m ³ STEL: 7.5 mg/m ³ | TWA: 1 mg/m ³ Sk* |

| Chemical name | Australia | ACGIH | European Union |
|-------------------------------------|-----------|------------------|----------------|
| Sodium fluorosilicate 16893-85-9 | - | 2 mg/L 3 mg/L | - |

Fluorides (as F): 8hr TWA = 2.5 mg/m³
Dusts not otherwise classified: 8hr TWA = 10 mg/m³

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Apply technical measures to comply with occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



| | |
|--|--|
| Eye/face protection | Goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| Skin and body protection | Boots. Overalls. |
| Hand protection | Impervious gloves. |
| Respiratory protection | If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. |
| Environmental exposure controls | No information available. |
| Thermal hazards | No information available. |

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

| | |
|-----------------------|--------------------------|
| Physical state | Solid |
| Appearance | Free-flowing Powder |
| Color | White |
| Odor | Odourless |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--------------------------|-------------------|-------------------------|
| pH | Not applicable | None known |
| pH (as aqueous solution) | No data available | None known |

| | | |
|---|--------------------|------------|
| Melting point / freezing point | No data available | None known |
| Boiling point / boiling range | No data available | None known |
| Flash point | Not applicable | None known |
| Evaporation rate | No data available | None known |
| Flammability (solid, gas) | No data available | None known |
| Flammability Limit in Air | | None known |
| Upper flammability or explosive limits | Not applicable | |
| Lower flammability or explosive limits | Not applicable | |
| Vapor pressure | Negligible at 20°C | None known |
| Vapor density | No data available | None known |
| Relative density | 2.68 (water=1) | None known |
| Water solubility | 0.65 g/L @ 17°C | None known |
| Solubility(ies) | No data available | None known |
| Partition coefficient | No data available | None known |
| Autoignition temperature | No data available | None known |
| Decomposition temperature | No data available | None known |
| Kinematic viscosity | Not applicable | None known |
| Dynamic viscosity | No data available | None known |

Other information**Section 10: Stability and reactivity**Reactivity

Reactivity Contact with acids liberates toxic gas.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Corrosive to metals in the presence of moisture.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Heat. Dust formation. Moisture.

Incompatible materials

Incompatible materials Strong acids. Mineral acids. Iron. Alkalis.

Hazardous decomposition products

Hazardous decomposition products Hydrogen fluoride. Oxides of silicon. Sodium oxides. Fluoric acid.

Section 11: Toxicological informationInformation on likely routes of exposure

| | |
|----------------------------|---|
| Product Information | No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are: |
| Inhalation | May cause irritation. Toxic if inhaled. |
| Eye contact | Causes serious eye irritation. |
| Skin contact | May cause irritation. Toxic in contact with skin. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Toxic if swallowed. Large exposures may be fatal. |
| Symptoms | Irritating. May cause redness and tearing of the eyes. |

Acute toxicity**Numerical measures of toxicity - Product Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|-----------------------|---------------------|-------------|--|
| Sodium fluorosilicate | = 125 mg/kg (Rat) | - | = 2.021 mg/L (Rat) 4 h = 1.673 mg/L (Rat) 4 h |

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|--|---|
| Skin corrosion/irritation | Not classified. |
| Serious eye damage/eye irritation | Causes serious eye irritation. |
| Respiratory or skin sensitization | No information available. |
| Germ cell mutagenicity | No information available. |
| Carcinogenicity | This material has been classified by the International Agency for Research on Cancer (IARC) as a Group 3 agent. Group 3 - The agent is not classifiable as to its carcinogenicity to humans. Data available is insufficient for an assessment to be made. |

| Chemical name | Australia | European Union | IARC |
|------------------------------------|-----------|----------------|---------|
| Sodium fluorosilicate - 16893-85-9 | - | - | Group 3 |

| | |
|---------------------------------|---|
| Reproductive toxicity | No information available. |
| STOT - single exposure | No information available. |
| STOT - repeated exposure | Causes damage to organs through prolonged or repeated exposure. |
| Aspiration hazard | No information available. |

Chronic effects: Fluorosis in humans can result with the repeated ingestion of >6mg of fluorine per day. The fluoride accumulates in bone and can lead to the development of osteosclerosis and other bone changes. Teeth may also be affected.

Symptoms of fluorosis may include weight loss, brittle bones, anaemia, weakness and stiffness of joints.

Section 12: Ecological information

Ecotoxicity

Aquatic ecotoxicity Keep out of waterways. Harmful to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|-----------------------|----------------------|--|----------------------------|-----------|
| Sodium fluorosilicate | - | LC50: =65mg/L (96h, <i>Poecilia reticulata</i>) | - | - |

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Mobility

Mobility No information available.

Other adverse effects

Other adverse effects No information available.

Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Refer to Waste Management Authority. Dispose of material through a licensed waste contractor.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

See section 8 for more information

Section 14: Transport information

ADG Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number or ID number 2674

Proper shipping name SODIUM FLUOROSILICATE
Transport hazard class(es) 6.1
Packing group III
Hazchem code 2X

IATA Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number 2674
UN proper shipping name SODIUM FLUOROSILICATE
Transport hazard class(es) 6.1
Packing group III

IMDG Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 2674
UN proper shipping name SODIUM FLUOROSILICATE
Transport hazard class(es) 6.1
Packing group III
IMDG EMS Fire F-A
IMDG EMS Spill S-A
Marine pollutant Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

Section 15: Regulatory information

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

National regulations

Australia

Classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

See section 8 for national exposure control parameters

Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Poison Schedule Number 6

Australian Industrial Chemicals Introduction Scheme (AICIS)

Contact supplier for inventory compliance status

| Chemical name | Australian Industrial Chemicals Introduction Scheme (AICIS) | Additional information |
|------------------------------------|---|------------------------|
| Sodium fluorosilicate - 16893-85-9 | Present | - |

Illicit Drug Precursors/Reagents

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

National pollutant inventory

Subject to reporting requirement

| Chemical name | National pollutant inventory |
|------------------------------------|--|
| Sodium fluorosilicate - 16893-85-9 | 10 tonne/yr Threshold category 1 400 tonne/yr Threshold category 2a 1 tonne/h Threshold category 2a 2000 tonne/yr Threshold category 2b 60000 MWH Threshold category 2b 20 MW Threshold category 2b |

International Inventories

| | |
|----------------------|--|
| AIIC | This material is listed on the Australian Inventory of Industrial Chemicals. |
| NZIoC | This material is listed on the New Zealand Inventory of Chemicals. |
| TSCA | Contact supplier for inventory compliance status. |
| DSL/NDSL | Contact supplier for inventory compliance status. |
| EINECS/ELINCS | Contact supplier for inventory compliance status. |
| ENCS | Contact supplier for inventory compliance status. |
| IECSC | Contact supplier for inventory compliance status. |
| KECL | Contact supplier for inventory compliance status. |
| PICCS | Contact supplier for inventory compliance status. |

Legend:**AIIC- Australian Inventory of Industrial Chemicals****NZIoC - New Zealand Inventory of Chemicals****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**Section 16: Other information**

Supplier Safety Data Sheet 04/ 2021

Reason(s) For Issue: Revised Primary SDS**Prepared By** This Safety Data Sheet has been prepared by IXOM Operations Pty Ltd (Toxicology and SDS Services).**Revision date:** 18-Jul-2024**Revision Note:**

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend**

SVHC: Substances of Very High Concern for Authorization:
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
 STOT: Specific Target Organ Toxicity
 ATE: Acute Toxicity Estimate
 LC50: 50% Lethal Concentration
 LD50: 50% Lethal Dose

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | * | Skin designation |
| C | Carcinogen | | |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 Australian Industrial Chemicals Introduction Scheme (AICIS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since IXOM Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their IXOM representative or IXOM Operations Pty Ltd at the contact details on page 1.

IXOM Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet