

# Material Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** SODIUM FLUOROSILICATE

**Other name(s):** Disodium hexafluorosilicate; Sodium silicon fluoride; Sodium silicofluoride.

**Recommended Use:** Water fluoridation, wood and leather preservative, etchant for opalescent glass.

**Supplier:** Orica Australia Pty Ltd  
**ABN:** 004 117 828  
**Street Address:** 1 Nicholson Street,  
Melbourne 3000  
Australia  
**Telephone Number:** +61 3 9665 7111  
**Facsimile:** +61 3 9665 7937

**Emergency Telephone:** 1 800 033 111 (ALL HOURS)

## 2. HAZARDS IDENTIFICATION

This material is hazardous according to criteria of ASCC; HAZARDOUS SUBSTANCE.

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

**Risk Phrases:** Toxic by inhalation, in contact with skin and if swallowed.

**Safety Phrases:** Do not breathe dust. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

**Poisons Schedule:** S6 Poison.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components / CAS Number	Proportion	Risk Phrases
Sodium fluorosilicate 16893-85-9	100%	R23/24/25

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## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (Phone eg. Australia 131 126; New Zealand 0 800 764766) or a doctor at once. Urgent hospital treatment is likely to be needed.

**Inhalation:** Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

**Skin Contact:** If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. This material can be absorbed through the skin with resultant toxic effects. Seek immediate medical assistance.

**Eye Contact:** If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.

**Ingestion:** Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Get to a doctor or hospital quickly.

**Medical attention and special treatment:** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

**Hazards from combustion products:** Non-combustible material.

**Precautions for fire fighters and special protective equipment:** Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

**Suitable Extinguishing Media:** Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

**Hazchem Code:** 2X

## 6. ACCIDENTAL RELEASE MEASURES

**Emergency procedures:** Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

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**Methods and materials for containment and clean up:** Wear protective equipment to prevent skin and eye contact and breathing in dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal.

## 7. HANDLING AND STORAGE

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

**Conditions for safe storage:** Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for spills.

**Precautions for safe handling:** Avoid skin and eye contact and breathing in dust. Avoid handling which leads to dust formation. Keep out of reach of children.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits:

No value assigned for this specific material by the National Occupational Health and Safety Commission. However, Exposure Standard(s) for constituent(s):

Fluorides (as F): 8hr TWA = 2.5 mg/m<sup>3</sup>

As published by the National Occupational Health and Safety Commission.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

These 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 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.

### Engineering controls:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Avoid generating and breathing in dusts. Use with local exhaust ventilation or while wearing dust mask. Keep containers closed when not in use.

### Personal Protective Equipment:

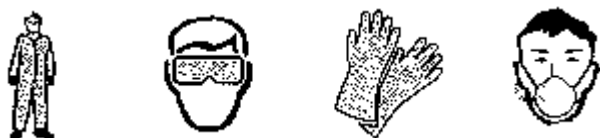
The selection of PPE is dependant on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

Orica Personal Protection Guide No. 1, 1998: F - OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.

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Wear overalls, chemical goggles and impervious gloves. Avoid generating and inhaling dusts. If dust exists, wear dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Crystalline Powder
<b>Colour:</b>	White
<b>Odour:</b>	Pungent
<b>Molecular Formula:</b>	Na <sub>2</sub> SiF <sub>6</sub>
<b>Solubility:</b>	Soluble in water.
<b>Specific Gravity:</b>	2.68
<b>Relative Vapour Density (air=1):</b>	Not applicable
<b>Vapour Pressure (20 °C):</b>	Not applicable
<b>Flash Point (°C):</b>	Not applicable
<b>Autoignition Temperature (°C):</b>	Not applicable
<b>% Volatile by Volume:</b>	Not available
<b>Solubility in water (g/L):</b>	Not available
<b>Melting Point/Range (°C):</b>	Not available
<b>Boiling Point/Range (°C):</b>	Not available
<b>Decomposition Point (°C):</b>	500
<b>pH:</b>	6 - 7

## 10. STABILITY AND REACTIVITY

<b>Chemical stability:</b>	No information available.
<b>Conditions to avoid:</b>	Avoid dust generation.
<b>Incompatible materials:</b>	Incompatible with metals and acids .
<b>Hazardous decomposition products:</b>	None known.
<b>Hazardous reactions:</b>	None known.

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## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

**Ingestion:** Swallowing can result in nausea, vomiting, diarrhoea, and abdominal pain. Larger exposures may result in muscular weakness, shock, convulsions and spasms. Can be fatal due to respiratory and cardiac failure.

**Eye contact:** An eye irritant.

**Skin contact:** Contact with skin may result in irritation.

**Inhalation:** Breathing in dust may result in respiratory irritation. Breathing in high concentrations may result in the same symptoms described for 'INGESTION'.

### Long Term Effects:

Repeated or prolonged exposure may result in fluorosis.

### Toxicological Data:

Oral LD50 (rat): 125 mg/kg.  
SKIN: Mild irritant (rabbit).  
EYES: Severe irritant (rabbit).

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.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Avoid contaminating waterways. Although an active ingredient in this material is toxic to the aquatic environment, if used in accordance with the recommendations it is not expected to present a risk to the environment.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Refer to local government authority for disposal recommendations. Dispose of material through a licensed waste contractor. Decontamination and destruction of containers should be considered.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

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

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**UN No:** 2674  
**Class-primary:** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** SODIUM FLUOROSILICATE  
**Hazchem Code:** 2X

## Marine Transport

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

**UN No:** 2674  
**Class-primary:** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** SODIUM FLUOROSILICATE

## Air Transport

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

**UN No:** 2674  
**Class-primary:** 6.1 Toxic  
**Packing Group:** III  
**Proper Shipping Name:** SODIUM FLUOROSILICATE

## 15. REGULATORY INFORMATION

**Classification:** This material is hazardous according to criteria of ASCC; HAZARDOUS SUBSTANCE.

**Hazard Category:** T : Toxic

**Risk Phrase(s):** R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

**Safety Phrase(s):** S22: Do not breathe dust.  
S24/25: Avoid contact with skin and eyes.  
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.  
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

**Poisons Schedule:** S6 Poison.

This material is listed on the Australian Inventory of Chemical Substances (AICS).

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## 16. OTHER INFORMATION

'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2008.

In: 'The Dictionary of Substances and their Effects'. Ed. Gangolli S. Royal Society of Chemistry, 1999.

### Reason(s) for Issue:

5 Yearly Revised Primary MSDS

This MSDS 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 Orica Limited 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 Orica representative or Orica Limited at the contact details on page 1.

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

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