

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 New Zealand Limited
Street Address: Orica Chemnet House
Level four, 123 Carlton Gore Road
Newmarket, Auckland
New Zealand

Telephone Number: +64 9 368 2700
Facsimile: +64 9 368 2710
Emergency Telephone: 0 800 734 607 (ALL HOURS)

2. HAZARDS IDENTIFICATION

Classified as a Dangerous Good according to NZS 5433:2007 Transport of Dangerous Goods on Land.

Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

Subclasses: Subclass 6.1 Category C - Substances which are acutely toxic.
Subclass 6.4 Category A - Substances that are irritating to the eye.
Subclass 9.3 Category B - Substances that are ecotoxic to terrestrial vertebrates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

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.

Product Name: SODIUM FLUOROSILICATE
Substance No: 000031020201

Issued: 05/09/2008 **Version:** 2

Safety Data Sheet



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.

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

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.

Product Name: SODIUM FLUROSILICATE
Substance No: 000031020201

Issued: 05/09/2008 **Version:** 2

Safety Data Sheet



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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

No value assigned for this specific material by the New Zealand Occupational Safety and Health Service (OSH). However, Workplace Exposure Standard(s) for constituent(s):

Fluorides, as F: WES-TWA 2.5 mg/m³, bio

As published by the New Zealand Occupational Safety and Health Service (OSH).

WES - TWA (Workplace Exposure Standard - Time Weighted Average) - The eight-hour, time-weighted average exposure standard is designed to protect the worker from the effects of long-term exposure.

'bio' - Biological Exposure Index.

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.



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.

Product Name: SODIUM FLUROSILICATE
Substance No: 000031020201

Issued: 05/09/2008 **Version:** 2

Safety Data Sheet



9. PHYSICAL AND CHEMICAL PROPERTIES

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

10. STABILITY AND REACTIVITY

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

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.

Product Name: SODIUM FLUOROSILICATE
Substance No: 000031020201

Issued: 05/09/2008 Version: 2
Page 4 of 7

Safety Data Sheet



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 a Dangerous Good according to NZS 5433:2007 Transport of Dangerous Goods on Land.



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

Product Name: SODIUM FLUOROSILICATE
Substance No: 000031020201

Issued: 05/09/2008

Version: 2

Safety Data Sheet



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: Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

Subclasses: Subclass 6.1 Category C - Substances which are acutely toxic.
Subclass 6.4 Category A - Substances that are irritating to the eye.
Subclass 9.3 Category B - Substances that are ecotoxic to terrestrial vertebrates.

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.

Product Name: SODIUM FLUOROSILICATE
Substance No: 000031020201

Issued: 05/09/2008

Version: 2

Safety Data Sheet



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.

Product Name: SODIUM FLUOROSILICATE
Substance No: 000031020201

Issued: 05/09/2008 **Version:** 2
Page 7 of 7