

Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **FLUOROSILICIC ACID 40%**

Recommended Use: Lead and tin refining, additive in electroplating chromium, fluoridation of water supplies, pretreatment and finishing various metals, increases hardness of ceramics, plaster and cement.

Supplier: Orica Australia Pty Ltd
ABN: 99 004 117 828
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 Safe Work Australia; 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: Causes burns. Risk of serious damage to eyes.

Safety Phrases: Keep locked up and out of the reach of children. 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: S7 Dangerous Poison.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS Number | Proportion | Risk Phrases |
|--------------------|------------|------------|--------------|
| Sulfuric acid | 7664-93-9 | max 0.1% | R35, R41 |
| Water | 7732-18-5 | max 60% | - |
| Fluorosilicic acid | 16961-83-4 | min 40% | R34, R41 |

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

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.

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Skin Contact:

If skin contact occurs, immediately remove contaminated clothing. Flush skin under running water for 15 minutes. Then apply calcium gluconate gel. Contact the Poisons Information Centre. For skin burns, cover with a clean, dry dressing until medical help is available.

Eye Contact:

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a 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. Seek immediate medical assistance.

Medical attention and special treatment:

Treat symptomatically. Effects may be delayed. Can cause corneal burns.

5. FIRE FIGHTING MEASURES

Hazards from combustion products:

Non-combustible material.

Precautions for fire fighters and special protective equipment:

Decomposes on heating emitting toxic fumes, including those of hydrogen fluoride. Keep containers cool with water spray. 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 vapours. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Neutralise with lime or soda ash. Collect and seal in properly labelled containers or drums for disposal. Wash area down with detergent and excess water.

7. HANDLING AND STORAGE

This material is a Scheduled Poison S7 and must be stored, maintained and used in accordance with the relevant regulations.

Conditions for safe storage:

Store in cool place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Keep dry - reacts with water, may lead to drum rupture. Keep containers closed when not in use - check regularly for leaks.

Precautions for safe handling:

Avoid skin and eye contact and breathing in vapour, mists and aerosols. Always add the acid to water, never the reverse.

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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/m³

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. If inhalation risk exists: Use with local exhaust ventilation or while wearing suitable mist respirator. 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: D - OVERALLS, RUBBER BOOTS, CHEMICAL GOGGLES, FACE SHIELD, SAFETY SHOES, GLOVES (Long), APRON.

Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

If risk of inhalation exists, wear suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|----------------------|
| Physical state: | Clear Liquid |
| Colour: | Almost Colourless |
| Odour: | Acidic |
| Solubility: | Miscible with water. |
| Specific Gravity: | 1.42 |
| Relative Vapour Density (air=1): | Not available |
| Vapour Pressure (20 °C): | Not available |
| Flash Point (°C): | Not applicable |
| Flammability Limits (%): | Not applicable |
| Autoignition Temperature (°C): | Not applicable |
| Boiling Point/Range (°C): | 115 |
| pH: | Not available |
| Freezing Point/Range (°C): | -30 |

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10. STABILITY AND REACTIVITY

| | |
|--|--|
| Chemical stability: | Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. |
| Conditions to avoid: | Avoid contact with foodstuffs. |
| Incompatible materials: | Incompatible with alkalis, sulphides, carbonates, cyanides, and many metals. |
| Hazardous decomposition products: | Hydrogen fluoride. |
| Hazardous reactions: | Reacts exothermically on dilution with water. Corrosive to metals. Reacts violently with bases, and organic chemicals. |

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, abdominal pain and chemical burns to the gastrointestinal tract. |
| Eye contact: | A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury. |
| Skin contact: | Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns. |
| Inhalation: | Breathing in mists or aerosols may produce respiratory irritation. |
| Long Term Effects: | Repeated or prolonged exposure may result in fluorosis. |

Toxicological Data: No LD50 data available for the product. For the constituent FLUOSILICIC ACID:
Oral LD50 (rat): 430 mg/kg.

12. ECOLOGICAL INFORMATION

Ecotoxicity Avoid contaminating waterways.

13. DISPOSAL CONSIDERATIONS

Disposal methods:
Refer to Waste Management Authority. 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: 1778
Class-primary 8 Corrosive
Packing Group: II
Proper Shipping Name: FLUOROSILICIC ACID
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: 1778
Class-primary: 8 Corrosive
Packing Group: II
Proper Shipping Name: FLUOROSILICIC ACID

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: 1778
Class-primary: 8 Corrosive
Packing Group: II
Proper Shipping Name: FLUOROSILICIC ACID

15. REGULATORY INFORMATION

Classification: This material is hazardous according to criteria of Safe Work Australia; HAZARDOUS SUBSTANCE.

Hazard Category: C: Corrosive

Risk Phrase(s): R34: Causes burns.
R41: Risk of serious damage to eyes.

Safety Phrase(s): S1/2: Keep locked up and out of the reach of children.
S24/25: Avoid contact with skin and eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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: S7 Dangerous Poison.

All the constituents of this material are 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, 2006.

Reason(s) for Issue:

Creation in WERCS database

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 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.