Fluorosilicic Acid (FSA)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

1.1. Product identifier

Product form : Substance
Substance name : Fluorosilicic Acid (FSA)
Chemical name : Hydro Fluorosilicic Acid (HSA)
Product code : M17200

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

1.3. Details of the supplier of the safety data sheet

JR Simplot Company
Boise, ID 83707
T 1-208-336-2110

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Acute Tox. 4 (Oral) H302
Skin Corr. 1A H314

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) :
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS-US) :
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash ... thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P312 - If swallowed: Call a poison center/doctor/... if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center/doctor/...
P321 - Specific treatment (see ... on this label)
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available
Fluorosilicic Acid (FSA)
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SECTION 3: Composition/information on ingredients

3.1. Substance
Name: Fluorosilicic Acid (FSA)

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>hexafluorosilicic acid, conc=25%, aqueous solution</td>
<td>(CAS No) 16961-83-4</td>
<td>100</td>
<td>Skin Corr. 1B, H314</td>
</tr>
</tbody>
</table>

3.2. Mixture
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 you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation: Assure fresh air breathing. Allow the victim to rest.
First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries: Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
No additional information available

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.
Emergency procedures: Ventilate area.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. 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
Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Fluorosilicic Acid (FSA)
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7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Keep container closed when not in use.
Incompatible products: Strong bases. Strong acids.
Incompatible materials: Sources of ignition. Direct sunlight.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4)

<table>
<thead>
<tr>
<th>USA ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Personal protective equipment: Avoid all unnecessary exposure.
Hand protection: Wear protective gloves.
Eye protection: Chemical goggles or safety glasses.
Respiratory protection: Wear appropriate mask.
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: Liquid
Appearance: Clear, colorless to pale straw liquid.
Color: Colorless
Odor: Characteristic
Odor threshold: No data available
pH: 1
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: No data available
Boiling point: 105 °C
Flash point: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: No data available
Solubility: Soluble.
Water: Solubility in water of component(s) of the mixture:
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing 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
No additional information available

10.2. Chemical stability
Stable. Not established.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Extremely high temperatures. Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

**Fluorsilicic Acid (FSA)**

| LD50 oral rat | 430 mg/kg |
| ATE US (oral) | 430.00000000 mg/kg body weight |

Skin corrosion/irritation : Causes severe skin burns and eye damage.

| pH: 1 |

Serious eye damage/irritation : Not classified

| pH: 1 |

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

| Based on available data, the classification criteria are not met |

Carcinogenicity : Not classified

**hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4)**

| IARC group | 3 - Not classifiable |

Reproductive toxicity : Not classified

| Based on available data, the classification criteria are not met |

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

| Based on available data, the classification criteria are not met |

Aspiration hazard : Not classified

| Based on available data, the classification criteria are not met |

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

| hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4) |
| LC50 fish 1 | > 10 mg/l (96 h; Brachydanio rerio) |
| Threshold limit algae 1 | 10 mg/l (96 h; Scenedesmus quadricauda; Cell numbers) |

12.2. Persistence and degradability

**Fluorsilicic Acid (FSA)**

| Persistence and degradability | Not established. |
Fluorosilicic Acid (FSA)
Safety Data Sheet
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<table>
<thead>
<tr>
<th>hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

Fluorosilicic Acid (FSA)
Bioaccumulative potential: Not established.

hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4)
Bioaccumulative potential: Not bioaccumulative. Not established.

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on ozone layer: No additional information available
Effect on the global warming: No known ecological damage caused by this product.
Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT
Transport document description: UN1778 Fluorosilicic acid, 8, II
UN-No.(DOT): 1778
DOT NA no.: UN1778
DOT Proper Shipping Name: Fluorosilicic acid
Department of Transportation (DOT) Hazard Classes: 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT): 8 - Corrosive

Packing group (DOT): II - Medium Danger
Fluorosilicic Acid (FSA)
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DOT Special Provisions (49 CFR 172.102)

- A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging.
- A7 - Steel packaging must be corrosion-resistant or have protection against corrosion.
- B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
- B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.
- IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
- N3 - Glass inner packaging are permitted in combination or composite packaging only if the hazardous material is free from hydrofluoric acid.
- N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
- T8 - 4 178.274(d)(2) Normal............. Prohibited

DOT Packaging Exceptions (49 CFR 173.xxx)

- None

DOT Packaging Non Bulk (49 CFR 173.xxx)

- 202

DOT Packaging Bulk (49 CFR 173.xxx)

- 242

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)

- 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

- 30 L

DOT Vessel Stowage Location

- A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Additional information

Other information

- No supplementary information available.

ADR

- Transport document description

Transport by sea

- No additional information available

Air transport

- No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Fluorosilicic Acid (FSA)

- Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

- No additional information available

EU-Regulations

- No additional information available

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

- Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC

- Not classified

15.2.2. National regulations

- No additional information available
15.3. US State regulations

hexafluorosilicic acid, conc=25%, aqueous solution (16961-83-4)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information:

Data sources:

Other information:
None.

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation Category 1A</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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