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Version 1

1. IDENTIFICATION

Product Identifier**Product Name** SmartWash Step 1**Other means of identification****SDS #** WS-031R**UN/ID No** UN1790**Recommended use of the chemical and restrictions on use****Recommended Use** Cleaning agent.**Details of the supplier of the safety data sheet****Supplier Address**Whiting Systems, Inc.
9000 Highway 5 North
Alexander, AR 72002**Emergency Telephone Number****Company Phone Number** 1-800-542-9031
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Blue liquid**Physical state** Liquid**Odor** acrid Acid odor**Classification**

| | |
|---|------------|
| Acute toxicity - Oral | Category 3 |
| Acute toxicity - Dermal | Category 3 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

Signal Word**Danger****Hazard statements**Toxic if swallowed
Toxic in contact with skin
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Immediately call a poison center or doctor/physician
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a poison center or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse
 Immediately call a poison center or doctor/physician
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a poison center or doctor/physician
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth
 Do not induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No | Weight-% |
|----------------------------------|------------|----------|
| Monocarbamide Dihydrogen Sulfate | 21351-39-3 | 1-5 |
| Hydrofluoric acid | 7664-39-3 | 1-5 |

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

| | |
|-----------------------|--|
| General Advice | When seeking medical attention, emphasize exposure to hydrofluoric acid. |
| Eye Contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Immediate medical attention is required. Irrigate open eyelids with 500 to 1,000 cc's of 1% Calcium Gluconate in saline solution. |
| Skin Contact | Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. Immediate medical attention is required. Apply 2.5% Calcium Gluconate ointment to contacted area. |

| | |
|-------------------|---|
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician immediately. |
| Ingestion | Rinse mouth. Do not induce vomiting. Drink high amounts of calcium based antacid in water followed by milk or milk of magnesia. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. |

Most important symptoms and effects

| | |
|-----------------|---|
| Symptoms | Vapor causes irritation to nasal and respiratory passages. In severe cases, burns, corneal damage, and blindness may occur. Irritation and corrosive burns to mouth, throat, and stomach. Prolonged contact may even cause severe skin irritation or mild burn. |
|-----------------|---|

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|--|
| Notes to Physician | Treat symptomatically. Inhaling HF vapors can seriously damage the lungs. Delayed reactions up to and including fatal pulmonary edema may not be apparent for hours after the initial exposure. In 20%-50% HF concentrations, burns can be delayed 1 to 8 hours. Concentrations of less than 20% HF may cause delayed painful erythema up to 24 hours after contact. Latent skin burns and necrosis with slow healing can occur even at concentrations of 2% HF. |
|---------------------------|--|

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Carbon dioxide (CO₂). Water spray (fog). Dry chemical. Chemical foam.

Unsuitable Extinguishing Media Do not use solid streams of water, except to cool closed containers.

Specific Hazards Arising from the Chemical

Keep containers cool with water spray to prevent container rupture due to steam buildup. Contents are corrosive and all personal contact must be avoided. Contact with B:C extinguisher powder may produce large amounts of carbon dioxide. Contact with soft metals may evolve flammable hydrogen gas.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions Use personal protective equipment as required.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. For spills in excess of allowable limits (RQ) notify the National Response Center (800) 424-8802; refer to SARA Title III, Section 313 40 CFR 372, and CERCLA 40 CFR 302 for detailed instructions concerning reporting requirements. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Confine and absorb into approved absorbent.

Methods for Clean-Up Place in appropriate containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use only in well-ventilated areas. Use personal protection recommended in Section 8. Protect container from physical damage.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep locked up and out of reach of children. Protect from extreme temperatures.

Packaging Materials

This product will attack glass, concrete, and certain metals.

Incompatible Materials

Strong oxidizing agents. Strong alkalis. Metals. Cyanides. Sulfides. Glass. Ceramics.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------------------|---|--|--|
| Hydrofluoric acid 7664-39-3 | TWA: 0.5 ppm F TWA: 2.5 mg/m ³ F S* Ceiling: 2 ppm F | TWA: 3 ppm F TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m ³ (vacated) STEL: 6 ppm F | IDLH: 30 ppm Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min TWA: 3 ppm TWA: 2.5 mg/m ³ |

Other Information

Airborne concentrations of 10-15 ppm will irritate the eyes, skin, and respiratory tract; 30 ppm is considered "Immediately Dangerous to Life and Health" (IDLH) and may have irreversible health effects; above 50 ppm, even brief exposure may be fatal.

Appropriate engineering controls

Engineering Controls

Apply technical measures to comply with the occupational exposure limits. Provide sufficient mechanical ventilation to maintain exposure below TLV(s). Eyewash stations. Showers.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Wear approved safety goggles. Wear safety glasses with side shields (or goggles).

Skin and Body Protection

Saranex, Barricade, Chemrel, Responder, or Butyl rubber gloves required. Do not use nitrile rubber, polyvinyl alcohol, or polyvinyl chloride. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection

None needed under normal use conditions with adequate ventilation. If the occupational exposure limits are exceeded, a NIOSH approved respirator with acid gas cartridges or supplied air respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|-------------|-----------------------|----------------|
| Physical state | Liquid | Odor | acid Acid odor |
| Appearance | Blue liquid | Odor Threshold | Not determined |
| Color | Blue | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|-------------------------------------|--------------------|-------------------------|
| pH | <1.0 | |
| Melting Point/Freezing Point | Not determined | |
| Boiling Point/Boiling Range | 100 °C / 212 °F | |
| Flash Point | Non-flammable | |
| Evaporation Rate | <1 | (Water = 1) |
| Flammability (Solid, Gas) | n/a-liquid | |
| Flammability Limits in Air | | |
| Upper Flammability Limits | Not applicable | |
| Lower Flammability Limit | Not applicable | |
| Vapor Pressure | 17 mm Hg | @ 23°C |
| Vapor Density | >1 | (Air=1) |
| Relative Density | 1.026 | |
| Water Solubility | Completely soluble | |
| Solubility in other solvents | Not determined | |
| Partition Coefficient | Not determined | |
| Auto-ignition Temperature | Not determined | |
| Decomposition Temperature | Not determined | |
| Kinematic Viscosity | Not determined | |
| Dynamic Viscosity | Not determined | |
| Explosive Properties | Not determined | |
| Oxidizing Properties | Not determined | |

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur. Non-hazardous endothermic polymerization may occur in both the liquid and gas phases.

Conditions to Avoid

Extreme temperatures.

Incompatible Materials

Strong oxidizing agents. Strong alkalis. Metals. Cyanides. Sulfides. Glass. Ceramics.

Hazardous Decomposition Products

Decomposition will not occur if handled and stored properly. In case of fire, oxides of carbon, hydrocarbons, fumes or vapors, and smoke may be produced. Fluorine.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|---|
| Eye Contact | Causes severe eye damage. |
| Skin Contact | Toxic in contact with skin. Causes severe skin burns. |
| Inhalation | Harmful if inhaled. |
| Ingestion | Toxic if swallowed. |

Component Information

| Chemical Name | ATEmix (oral) | ATEmix (dermal) | Inhalation LC50 |
|--|---------------------|---------------------|-------------------------|
| Monocarbamide Dihydrogen Sulfate 21351-39-3 | = 350 mg/kg (Rat) | > 2 g/kg (Rabbit) | - |
| Hydrofluoric acid 7664-39-3 | - | - | = 0.79 mg/L (Rat) 1 h |

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Carcinogenicity Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

12. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|--------------------------------|----------------------|------------------------------------|-------------------------------------|
| Hydrofluoric acid 7664-39-3 | | 660: 48 h Leuciscus idus mg/L LC50 | 270: 48 h Daphnia species mg/L EC50 |

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Not determined

| Chemical Name | Partition Coefficient |
|--------------------------------|-----------------------|
| Hydrofluoric acid 7664-39-3 | -1.4 |

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

- Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number

| Chemical Name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|--------------------------------|------|--------------------------|------------------------|------------------------|
| Hydrofluoric acid 7664-39-3 | U134 | | | U134 |

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

- UN/ID No** UN1790
- Proper Shipping Name** Hydrofluoric acid solution
- Hazard Class** 6.1
- Packing Group** III
- Reportable Quantity (RQ)** hydrofluoric acid 100 lbs

IATA

- UN/ID No** UN1790
- Proper Shipping Name** Hydrofluoric acid solution
- Hazard Class** 6.1
- Packing Group** III

IMDG

- UN/ID No** UN1790
- Proper Shipping Name** Hydrofluoric acid solution
- Hazard Class** 6.1
- Packing Group** III

15. REGULATORY INFORMATION

International Inventories

| Chemical Name | TSCA | DSL/NDSL | EINECS/E LINCS | ENCS | IECSC | KECL | PICCS | AICS |
|----------------------------------|------|----------|----------------|---------|-------|---------|-------|------|
| Monocarbamide Dihydrogen Sulfate | X | X | X | Present | | | | |
| Hydrofluoric acid | X | X | X | Present | X | Present | X | X |

Legend:

- 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*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Chemical Name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|--------------------------------|--------------------------|----------------|---|
| Hydrofluoric acid 7664-39-3 | 100 lb | 100 lb | RQ 100 lb final RQ RQ 45.4 kg final RQ |

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical Name | CAS No | Weight-% | SARA 313 - Threshold Values % |
|-------------------------------|-----------|----------|-------------------------------|
| Hydrofluoric acid - 7664-39-3 | 7664-39-3 | 1-5 | 1.0 |

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|-------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Hydrofluoric acid | 100 lb | | | X |

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|--------------------------------|------------|---------------|--------------|
| Hydrofluoric acid 7664-39-3 | X | X | X |

16. OTHER INFORMATION

| | | | | |
|--------------------|-----------------------|---------------------|-------------------------|----------------------------|
| <u>NFPA</u> | Health Hazards | Flammability | Instability | Special Hazards |
| | Not determined | Not determined | Not determined | Not determined |
| <u>HMIS</u> | Health Hazards | Flammability | Physical hazards | Personal Protection |
| | 3 | 0 | 1 | Not determined |

Issue Date: 22-Nov-2004
 Revision Date: 23-Feb-2016
 Revision Note: New formula

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet