**MSDS - Material Safety Data Sheet**

**Product Name: FLO-STAR**

**MSDS No.: 639**

### I. Basic Information:

- **Manufacturer:** U.N.X. INCORPORATED
- **Address:** 707 ARLINGTON BLVD.
- **City, ST Zip:** GREENVILLE, NC 27858
- **Emergency Contact:** CHEMTEL
- **Emergency Telephone Number:** 800-255-3924
- **Contact:** AMENDT; WILSON
- **Information Telephone Number:** 252-756-8616
- **Last Update:** 06/21/2002
- **Expiration Date:**

  - **Chemical State:**
    - Liquid [X]
    - Gas [ ]
    - Solid [ ]
  - **Chemical Type:**
    - Pure [ ]
    - Mixture [X]

  - **NFPA:**
    - Health [2]
    - Flammability [0]
    - Reactivity [1]

### II. Ingredients:

- **Trade Secret:** [ ]

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical Name</th>
<th>% Range</th>
<th>EHS NTP</th>
<th>IARC SUB Z</th>
<th>SARA 313 OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>16961834</td>
<td>Fluorosilicic acid</td>
<td>15-25</td>
<td>2.5mg/m3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7732185</td>
<td>Water</td>
<td>75-85</td>
<td>2.5mg/m3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### III. Hazardous Identification:

- **Hazard Category:**
  - Acute [ ]
  - Chronic [ ]
  - Fire [ ]
  - Pressure [ ]
  - Reactive [ ]

- **Hazardous Identification Information:**

### IV. First Aid Measures:

- **Route(s) of Entry:**
  - SKIN, EYES, INHALATION

- **Health Hazards (Acute and Chronic):**
  - INHALATION, CAN IRRITATE NOSE, THROAT, AND LUNGS. SKIN CONTACT, CAN CAUSE TISSUE DESTRUCTION, WITH LONG TERM EXPOSURE. INGESTION, SEVERE INTERNAL IRRITATION AND DAMAGE CAN RESULT IF TAKEN BY MOUTH.

- **Signs and Symptoms:**
  - INORGANIC FLUORIDES ARE HIGHLY IRRITATING AND TOXIC. LARGE DOSES CAN CAUSE NAUSEA, VOMITING, DIARRHEA, AND ABDOMINAL BURNING. CIRCULATORY, RESPIRATORY, NERVOUS COMPLAINTS, AND SKIN RASHES MAY OCCUR. LIQUID VAPOR MAY CAUSE SEVERE IRRITATION AND BURNS WHICH WILL NOT BE IMMEDIATELY APPARENT. IT ALSO CAUSES SEVERE IRRITATION TO THE LUNGS, NOSE AND THROAT. IF SWALLOWED, IT CAN CAUSE SEVERE DAMAGE TO THROAT AND STOMACH.

- **Medical Conditions Generally Aggravated by Exposure:**

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*Monday, August 09, 2004*
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**Emergency and First Aid Procedures:**

FOR EYES, FLUSH WITH WARM WATER FOR AT LEAST 15 MINUTES. CONTACT PHYSICIAN. CONTINUE TO FLUSH WITH WATER UNTIL MEDICAL ATTENTION IS RECEIVED. IF INGESTED, DRINK LARGE VOLUMES OF WATER FOLLOWED BY MILK. THEN ADMINISTER MILK OF MAGNESIA (APPROXIMATELY 2 TABLESPOONS). IF VOMITING OCCURS SPONTANEOUSLY, ADMINISTER FLUID REPEATEDLY. GIVE MILK OR BEATEN EGGS, EVERY ONE TO TWO HOURS.

**Other Health Warnings:**

SCLEROSIS OR CHANGES OF BONES AND LIGAMENTS CAN BE SEEN BY X-RAY. ENZYME SYSTEM EFFECTS AND PULMONARY FIBROSIS ARE REPORTED, COMMON FINDINGS ARE EYE, SKIN, AND MUCOUS MEMBRANE IRRITATION, LOSS OF WEIGHT, ANOREXIA, ANEMIA, CACHEXIA, AND DENTAL EFFECTS.

**V. Fire Fighting Measures:**

<table>
<thead>
<tr>
<th>Flash Point:</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Explosive Limit:</td>
<td>-</td>
</tr>
<tr>
<td>Upper Explosive Limit:</td>
<td>-</td>
</tr>
</tbody>
</table>

| F.P. Method: | - |

**Fire Extinguishing Media:** DRY CHEMICAL; CARBON DIOXIDE FOAMER; OR WATER FOG

**Special Fire Fighting Procedures:**

USE NIOSH/MSHA APPROVED SELF CONTAINED BREATHING APPARATUS WHERE PRODUCT IS INVOLVED IN FIRE.

**Unusual Fire and Explosion:**

AVOID CONTACT WITH BLEACHES AND LAUNDRY COMPOUNDS. STRONG DECOMPOSITION REACTION CAN RESULT. DANGEROUS WHEN HEATED TO DECOMPOSITION, HIGHLY TOXIC AND CORROSIVE FUMES OF FLUORIDES ARE Emitted; WILL REACT WITH WATER OR STEAM TO PRODUCE TOXIC AND CORROSIVE FUMES. MAY GENERATE HYDROGEN WHEN IN CONTACT WITH SOME METALS.

**VI. Accidental Release Measures:**

Steps to be Taken in Case Material is Released or Spilled:

FOR SMALL SPILL, NEUTRALIZE WITH SODA ASH AND LARGE VOLUMES OF WATER THEN FLUSH DOWN DRAIN. FOR LARGE SPILL: DIKE, COLLECT, AND ADD TO LARGE VOLUME OF COOL WATER WITH CONSTANT STIRRING. THEN SLOWLY NEUTRALIZE (pH 7.0) WITH LIMESTONE OR SODA ASH. DISPOSE OF AS FLUOSILICATE WASTE CONTACT APPROPRIATE AUTHORITY. CLEAN AND NEUTRALIZE ALL AREAS OF CONTACT.

**VII. Handling and Storage:**

**Precautions to be Taken:**

HANDLING AND STORING: EMPTY DRUMS MUST BE TREATED AS HAZARDOUS BECAUSE OF RESIDUES. STORE IN DRY COOL PLACE. KEEP CONTAINER CLOSED.

**Other Precautions:**

**VIII. Exposure Controls/Personal Protection:**

**Ventilation Requirements:**

AVOID BREATHING MIST. IF EXPOSURE IS LIKELY, USE FILTER OR PROTECTIVE RESPIRATOR. MECHANICAL VENTILATION IS ACCEPTABLE.

**Personal Protective Equipment:**
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RUBBER GLOVES SHOULD BE WORN. SAFETY GOGGLES SHOULD BE WORN. OTHER PROTECTIVE MEASURES: HAVE AN EYE BATH AND SAFETY SHOWER CLOSE BY. IF POTENTIAL FOR SKIN CONTACT, WEAR PROTECTIVE GLOVES AND HAVE A HAND WASH AREA NEAR BY (ie. SOAP SOLUTION.). WORK/HYGIENIC PRACTICES: WASH HANDS, CHANGE OUT OF CLOTHES AS SOON AS POSSIBLE. WASH CLOTHES. SHOWER OR BATHE AS SOON AS POSSIBLE.

IX. Physical and Chemical Properties:

Boiling Point: 107°C
Specific Gravity (H2O = 1): 1.06000
Solubility In Water: EXCELLENT
Appearance and Odor: GREEN LIQUID, ACID ODOR

Melting Point: -37°C
Vapor Pressure (mm Hg.): 25
Vapor Density (AIR = 1): NO DATA
Other Information: THIS PRODUCT CONTAINS NO PHOSPHATES RUST REMOVING SOUR

X. Stability and Reactivity:

Stability:
VERY STABLE

Incompatibility (Materials to Avoid):
CONTACT WITH METALS, STONEWARE, STRONG ACIDS AND ALKALI, EXPLOSIVES, TOXICANTS, READILY OXIDIZABLE MATERIALS, ALKALI METALS, COMBUSTIBLE SOLIDS, AND ORGANIC PEROXIDES.

Decomposition/By Products:
EXTREME TEMPERATURE SUCH AS A FIRE CAUSE FORMATION OF HIGHLY TOXIC FUMES OF FLUORIDES SUCH AS SILICA FLUORIDES AND HYDROGEN FLUORIDE. HYDROGEN GAS MAY BE FORMED AT TEMPS ABOVE 227°F.

Hazardous Polymerization:
HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

XI. Toxicological Information:

CONTACT U.N.X. INCORPORATED

XII. Ecological Information:

CONTACT U.N.X. INCORPORATED

XIII. Disposal Considerations:

FOR SMALL SPILL, NEUTRALIZE WITH SODA ASH AND LARGE VOLUMES OF WATER THEN FLUSH DOWN DRAIN. FOR LARGE SPILL: DIKE, COLLECT, AND ADD TO LARGE VOLUME OF COOL WATER WITH CONSTANT STIRRING. THEN SLOWLY NEUTRALIZE (pH 7.0) WITH LIMESTONE OR SODA ASH. DISPOSE OF AS FLUOSILICATE WASTE CONTACT APPROPRIATE AUTHORITY. CLEAN AND NEUTRALIZE ALL AREAS OF CONTACT.

XIV. Transport Information:

UN 1778
DOT HAZARD CLASS: 8
LABEL: CORROSIVE
PG: II
PROPER SHIPPING NAME: FLUOROSILICIC ACID
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XV. Regulatory Information:

UNLESS OTHERWISE NOTED, NO COMPONENTS ARE SARA TITLE 3 SECTION 313 40 CFR LISTED MATERIALS. THE INGREDIENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY. THIS PRODUCT IS NOT MADE WITH VOC'S THAT COULD CAUSE DAMAGE TO THE OZONE LAYER.

XVI. Other Information: