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Safety Data Sheet



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**1. PRODUCT AND COMPANY IDENTIFICATION**

|                               |   |                     |               |
|-------------------------------|---|---------------------|---------------|
| <b>Product name:</b>          | <b>BONDERITE C-IC 4104 AERO known as TURCO NITRADD (T-4104)</b> | <b>IDH number:</b>  | 597527        |
| <b>Product type:</b>          | Additive  | <b>Item number:</b> | 597527        |
| <b>Restriction of Use:</b>    | None identified   | <b>Region:</b>      | United States |
| <b>Company address:</b>       | <b>Contact information:</b>                                     |                     |               |
| Hankel Corporation            | Telephone: (860) 571-5100                                       |                     |               |
| One Henkel Way                | MEDICAL EMERGENCY Phone: Poison Control Center                  |                     |               |
| Rocky Hill, Connecticut 06067 | 1-877-671-4608 (toll free) or 1-303-592-1711                    |                     |               |
|                               | TRANSPORT EMERGENCY Phone: CHEMTREC                             |                     |               |
|                               | 1-800-424-9300 (toll free) or 1-703-527-3887                    |                     |               |
|                               | Internet: www.henkeln.com                                       |                     |               |

**2. HAZARDS IDENTIFICATION**

| EMERGENCY OVERVIEW |   |
|--------------------|---|
| <b>DANGER:</b>     | <b>HARMFUL IF SWALLOWED.<br/>CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.<br/>MAY CAUSE RESPIRATORY IRRITATION.</b> |

| HAZARD CLASS                                     | HAZARD CATEGORY |
|--|-----------------|
| ACUTE TOXICITY ORAL                              | 4               |
| SKIN CORROSION                                   | 1B              |
| SERIOUS EYE DAMAGE                               | 1               |
| SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE | 3               |



**Precautionary Statements**

|                    |  |
|--------------------|--|
| <b>Prevention:</b> | Do not breathe vapors, mist, or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, eye protection, and face protection.  |
| <b>Response:</b>   | IF SWALLOWED: Immediately call poison control or physician if you feel unwell. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. Continue rinsing. Immediately call a poison control center or physician. Wash contaminated clothing before reuse. |
| <b>Storage:</b>    | Store in a well-ventilated place. Keep container tightly closed. Store locked up.  |
| <b>Disposal:</b>   | Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.  |

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Component(s) | CAS Number | Percentage* |
|------------------------|------------|-------------|
| Ammonium bifluoride    | 1341-49-7  | 10 - 30     |
| Acetic acid            | 64-19-7    | 10 - 30     |
| Ammonium fluoride      | 12125-01-8 | 1 - 5       |

\* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

### 4. FIRST AID MEASURES

|                            |   |
|----------------------------|---|
| <b>Inhalation:</b>         | If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.   |
| <b>Skin contact:</b>       | Rinse with large amounts of running water. GET MEDICAL ATTENTION IMMEDIATELY! If iced 0.13% benzalkonium chloride (Zephiran) solution or 2.5% calcium gluconate gel are available, the rinsing may be limited to 5 minutes, with the soaks or gel applied as soon as the rinsing is stopped. If benzalkonium chloride or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided. |
| <b>Eye contact:</b>        | In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.  |
| <b>Ingestion:</b>          | Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.  |
| <b>Symptoms:</b>           | See Section 11.   |
| <b>Notes to physician:</b> | Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.   |

### 5. FIRE FIGHTING MEASURES

|   |   |
|---|---|
| <b>Extinguishing media:</b>               | Use media appropriate for surrounding material.   |
| <b>Special firefighting procedures:</b>   | Wear full protective clothing. Wear self-contained breathing apparatus.                                       |
| <b>Unusual fire or explosion hazards:</b> | This product is an aqueous mixture which will not burn. May react with metals to form flammable hydrogen gas. |
| <b>Hazardous combustion products:</b>     | May liberate hydrogen fluoride.   |

### 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

|                                   |  |
|-----------------------------------|--|
| <b>Environmental precautions:</b> | Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment. Do not allow product to enter sewer or waterways. Isolate area. Keep unnecessary personnel away. |
| <b>Clean-up methods:</b>          | Collect spilled material with an inert absorbent such as sand or vermiculite. Place in properly labeled closed container. Dispose of according to Federal, State and local governmental regulations.   |

## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists of this product. Wash thoroughly after handling. Do not reuse the empty container.

**Storage:** For safe storage, store between 40 °F (4.4 °C) and 100 °F (37.8 °C). Keep the container tightly closed and in a cool, well-ventilated place.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

| Hazardous Component(s) | ACGIH TLV                        | OSHA PEL  | AIHA WEEL | OTHER |
|------------------------|----------------------------------|---|-----------|-------|
| Ammonium bifluoride    | 2.5 mg/m <sup>3</sup> TWA (as F) | 2.5 mg/m <sup>3</sup> PEL (as F)<br>2.5 mg/m <sup>3</sup> TWA Dust. | None      | None  |
| Acetic acid            | 15 ppm STEL<br>10 ppm TWA        | 10 ppm (25 mg/m <sup>3</sup> ) PEL                                  | None      | None  |
| Ammonium fluoride      | 2.5 mg/m <sup>3</sup> TWA (as F) | 2.5 mg/m <sup>3</sup> PEL (as F)<br>2.5 mg/m <sup>3</sup> TWA Dust. | None      | None  |

**Engineering controls:** Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

**Respiratory protection:** If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

**Eye/face protection:** Wear chemical goggles; face shield (if splashing is possible).

**Skin protection:** Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |                   |
|---|-------------------|
| <b>Physical state:</b>                          | Liquid            |
| <b>Color:</b>                                   | Colorless         |
| <b>Odor:</b>                                    | Acidic            |
| <b>Odor threshold:</b>                          | Not available.    |
| <b>pH:</b>                                      | < 2               |
| <b>Vapor pressure:</b>                          | Not determined    |
| <b>Boiling point/range:</b>                     | 118 °C (244.4 °F) |
| <b>Melting point/ range:</b>                    | Not applicable    |
| <b>Specific gravity:</b>                        | 1.09 - 1.11       |
| <b>Vapor density:</b>                           | Not determined    |
| <b>Flash point:</b>                             | Not applicable    |
| <b>Flammable/Explosive limits - lower:</b>      | Not available.    |
| <b>Flammable/Explosive limits - upper:</b>      | Not available.    |
| <b>Autoignition temperature:</b>                | Not determined    |
| <b>Evaporation rate:</b>                        | Not determined    |
| <b>Solubility in water:</b>                     | Complete          |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined    |
| <b>VOC content:</b>                             | 159 g/l           |
| <b>Viscosity:</b>                               | Not available.    |
| <b>Decomposition temperature:</b>               | Not available.    |

## 10. STABILITY AND REACTIVITY

|  |   |
|--|---|
| <b>Stability:</b>                        | Stable at normal conditions.  |
| <b>Hazardous reactions:</b>              | Will not occur.   |
| <b>Hazardous decomposition products:</b> | May liberate hydrogen fluoride.   |
| <b>Incompatible materials:</b>           | This product may react with strong alkalis. Explosive HYDROGEN GAS may be released if aqueous solutions of this material come into contact with reactive metals (IRON, ZINC, ALUMINUM). |
| <b>Reactivity:</b>                       | Not available.  |
| <b>Conditions to avoid:</b>              | Store away from incompatible materials.   |

## 11. TOXICOLOGICAL INFORMATION

**Relevant routes of exposure:** Skin, Inhalation, Eyes

**Potential Health Effects/Symptoms**

|                      |  |
|----------------------|--|
| <b>Inhalation:</b>   | Can cause severe irritation and burns to the respiratory tract. Contains fluorides. Exposure to fluorides over years may cause fluorosis.  |
| <b>Skin contact:</b> | Corrosive to the skin. Contact with the skin or mucous membranes may cause severe irritation and burns. Following skin exposure to this product, the sensation of irritation or pain may be delayed. |
| <b>Eye contact:</b>  | This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.   |
| <b>Ingestion:</b>    | This product may produce corrosive damage to the gastrointestinal tract if it is swallowed.  |

| Hazardous Component(s) | LD50s and LC50s  | Immediate and Delayed Health Effects  |
|------------------------|--|---|
| Ammonium bifluoride    | Oral LD50 (RAT) +/- 130 mg/kg  | Cardiac, Corrosive, Gastrointestinal tract, Irritant, Kidney, Lung, Metabolic, Nervous System, Respiratory, Teeth |
| Acetic acid            | Oral LD50 (RABBIT) = 1,200 mg/kg<br>Oral LD50 (RAT) = 3.53 g/kg<br>Oral LD50 (RAT) = 3.31 g/kg<br>Dermal LD50 (RABBIT) = 1,060 mg/kg<br>Inhalation LC50 (RAT, 4 h) = 11.4 mg/l | Allergen, Corrosive, Eyes, Gastrointestinal, Immune system, Irritant, Kidney                                      |
| Ammonium fluoride      | None   | Cardiac, Corrosive, Irritant, Kidney, Metabolic, Muscle, Nervous System, Respiratory                              |

| Hazardous Component(s) | NTP Carcinogen | IARC Carcinogen | OSHA Carcinogen (Specifically Regulated) |
|------------------------|----------------|-----------------|--|
| Ammonium bifluoride    | No             | No              | No                                       |
| Acetic acid            | No             | No              | No                                       |
| Ammonium fluoride      | No             | No              | No                                       |

## 12. ECOLOGICAL INFORMATION

**Ecological information:** Not available.

### 13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

**Recommended method of disposal:** Follow all local, state, federal and provincial regulations for disposal.

**Hazardous waste number:** This product, if discarded directly, would be a characteristic RCRA corrosive waste (D002).

### 14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

#### U.S. Department of Transportation Ground (49 CFR)

**Proper shipping name:** Ammonium hydrogendifluoride, solution  
**Hazard class or division:** 8 (6.1)  
**Identification number:** UN 2817  
**Packing group:** II

#### International Air Transportation (ICAO/IATA)

**Proper shipping name:** Ammonium hydrogendifluoride solution  
**Hazard class or division:** 8 (6.1)  
**Identification number:** UN 2817  
**Packing group:** II

#### Water Transportation (IMO/IMDG)

**Proper shipping name:** AMMONIUM HYDROGENDIFLUORIDE SOLUTION  
**Hazard class or division:** 8 (6.1)  
**Identification number:** UN 2817  
**Packing group:** II

### 15. REGULATORY INFORMATION

#### United States Regulatory Information

**TSCA 8 (b) Inventory Status:** All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

**TSCA 12 (b) Export Notification:** None above reporting de minimis

**CERCLA/SARA Section 302 EHS:** None above reporting de minimis  
**CERCLA/SARA Section 311/312:** Immediate Health, Delayed Health  
**CERCLA/SARA Section 313:** This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Ammonium bifluoride (CAS# 1341-49-7). Ammonium fluoride (CAS# 12125-01-8).

**CERCLA Reportable quantity:** Ammonium bifluoride (CAS# 1341-49-7) 100 lbs. (45.4 kg)  
Acetic acid (CAS# 64-19-7) 5,000 lbs. (2,270 kg)  
Ammonium fluoride (CAS# 12125-01-8) 100 lbs. (45.4 kg)

**California Proposition 65:** No California Proposition 65 listed chemicals are known to be present.

#### Canada Regulatory Information

**CEPA DSL/NDL Status:** All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

### 16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

**Prepared by:** Mark Mau, Regulatory Affairs Specialist

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