**Revision Number:** 008.2

**Issue date:** 11/21/2024

## 1. IDENTIFICATION

**Product name:** **BONDERITE C-IC 4104 AERO known as TURCO NITRADD (T-4104)**

**IDH number:** 597527

**Product type/ Recommended use:** Additive

**Item number:** 597527

**Restriction of Use:** None identified

**Region:** United States

**Company address:**
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

**Contact information:**
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
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.henkelna.com

## 2. HAZARDS IDENTIFICATION

| EMERGENCY OVERVIEW | |
|---|---|
| DANGER: | H302 - HARMFUL IF SWALLOWED.<br>H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. |

| HAZARD CLASS | HAZARD CATEGORY |
|---|---|
| ACUTE TOXICITY ORAL | 4 |
| SKIN CORROSION | 1 |
| SERIOUS EYE DAMAGE | 1 |

**PICTOGRAM(S)**

**Precautionary Statements**

**Prevention:**
P264 - Wash affected area thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves, clothing, eye and face protection.

**Response:**
P301+P312+P330 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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.
P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P363 - Wash contaminated clothing before reuse.

**Storage:**
P405 - Store locked up.

**Disposal:**
P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

**Other hazards** Not available.

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 | Weight %* |
|---|---|---|
| Ammonium bifluoride | 1341-49-7 | 10 - 30 |
| acetic acid | 64-19-7 | 10 - 30 |
| Ammonium fluoride | 12125-01-8 | 1 - 5 |

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

**Non hazardous components**

Actual concentration or concentration range is withheld as a trade secret

## 4. FIRST AID MEASURES

### First Aid Measures by likely routes of exposure

**Inhalation:** If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist. If breathing is difficult, give oxygen. Trained personnel should administer 2.5% calcium gluconate through a nebulizer for 20 minutes.

**Skin contact:** Remove contaminated clothing and footwear while rinsing the affected area with large amounts of running water for at least 15 minutes. GET IMMEDIATE MEDICAL ATTENTION. If iced solution of 0.13% aqueous Benzalkonium Chloride (Zephiran) or 2.5% calcium gluconate gel is available, rinsing may be limited to 5 minutes, with the soak solution or gel applied as soon as the rinsing is stopped. Gloves should be worn when applying the gel to prevent transfer of HF and secondary burns. If using calcium gluconate gel, it should be continuously re-applied and massaged into the affected area until pain has been relieved for at least 30 minutes. If Benzalkonium Chloride (Zephiran) or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided.

**Eye contact:** Immediately flush affected eye with large amounts of gently flowing water or 0.9% sterile saline solution for at least 15 minutes. Hold eyelid wide open. Get immediate medical attention. Eye flushing should continue during transportation to a doctor.

**Ingestion:** Get immediate medical attention. Do not induce vomiting. Attempt immediate administration of a fluoride binding substance: milk, chewable calcium carbonate tablets or 4-8 ounces (120-240 ml) of milk of magnesia or a liquid antacid. Avoid large amounts of liquid as it may induce vomiting. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects (acute and delayed):** The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.

**Indication of any immediate medical attention / special treatment needed:** 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

**Extinguishing media:** Use media appropriate for surrounding material.

**Improper extinguishing agents:** Not available.

**Special firefighting procedures:** Wear full protective clothing. Wear self-contained breathing apparatus.

**Unusual fire or explosion hazards:** This product is an aqueous mixture which will not burn. May react with metals to form flammable hydrogen gas.

**Hazardous combustion products:** Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. May liberate hydrogen fluoride. Ammonia.

## 6. ACCIDENTAL RELEASE MEASURES

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

**Environmental precautions:** Do not allow product to enter sewer or waterways.

**Clean-up methods:** Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

## 7. HANDLING AND STORAGE

**Handling:** Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

**Storage:** Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.
For safe storage, store between 40 °F (4.4 °C) and 100 °F (37.8 °C)

**Shelf Life Statement: Not available.**

## 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/m3 TWA (as F) | 2.5 mg/m3 PEL (as F)<br>2.5 mg/m3 TWA Dust. | None | None |
| acetic acid | 15 ppm STEL<br>10 ppm TWA | 10 ppm (25 mg/m3) PEL | None | None |
| Ammonium fluoride | 2.5 mg/m3 TWA (as F) | 2.5 mg/m3 PEL (as F)<br>2.5 mg/m3 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:** Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.

**Eye/face protection:** Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

**Skin protection:** Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Color:** Colourless / Colorless
**Odor:** Acidic
**Odor threshold:** Not available.

| | |
|---|---|
| **pH:** | < 2 |
| **Vapor pressure:** | Not determined |
| **Boiling point/range:** | 118 °C (244.4 °F) |
| **Melting point/ range:** | Not applicable |
| **Density/Relative density:** | 1.09 - 1.11 |
| **Relative vapor density:** | Not determined |
| **Flash point:** | > 100 °C (> 212°F) calculated; Aqueous solution |
| **Flammable/Explosive limits - lower:** | Not available. |
| **Flammable/Explosive limits - upper:** | Not available. |
| **Autoignition temperature:** | Not determined |
| **Flammability:** | Not applicable |
| **Evaporation rate:** | Not determined |
| **Solubility:** | Complete Water |
| **Partition coefficient n-octanol/water (logarithmic value):** | Not determined |
| **VOC content:** | 159 g/l |
| **Dynamic viscosity:** | Not available. |
| **Kinematic viscosity:** | Not available. |
| **Particle characteristics:** | Not available. |
| **Decomposition temperature:** | Not available. |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability:** | Stable under normal conditions of storage and use. |
| **Hazardous reactions:** | None under normal processing. |
| **Hazardous decomposition products:** | May liberate hydrogen fluoride. Ammonia. |
| **Incompatible materials:** | This product may react with strong alkalies. Explosive HYDROGEN GAS may be released if aqueous solutions of this material come into contact with reactive metals (IRON, ZINC, ALUMINUM). |
| **Reactivity:** | Not available. |
| **Conditions to avoid:** | Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials. |

## 11. TOXICOLOGICAL INFORMATION

**Likely routes of exposure:** Skin, Inhalation, Eyes, Ingestion

**Potential Health Effects/Symptoms**

**Inhalation:** Mists, vapors or liquid may cause severe irritation or burns. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

**Skin contact:** This product is severely irritating to the skin and may cause burns. Liquid or vapor can also cause fluoride-type irritation or burns which may not be immediately painful or visible. Hydrofluoric acid will penetrate the skin and attack underlying tissue and bone. Large burns (over 25 square inches) may also cause hypocalcemia and other systemic effects which may be fatal.

**Eye contact:** This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

**Ingestion:** Ingestion of small amounts of this product may result in potentially fatal hypocalcemia and systemic toxicity. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death. Ingestion causes burns of the upper digestive and respiratory tracts. Contains fluorides. Exposure to fluorides over years may cause fluorosis.

| Hazardous Component(s) | LD50s and LC50s |
|---|---|
| Ammonium bifluoride | Oral LD50 (Rat) +/- 130 mg/kg |
| acetic acid | Oral LD50 (Rabbit) = 1,200 mg/kg<br>Oral LD50 (Mouse) = 4,960 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) = > 16000 ppm |
| Ammonium fluoride | Inhalation LC50 (Rat, 4 h) = 1 mg/l |

| Hazardous Component(s) | Immediate Health Effects | Delayed Health Effects | Chronic Health Effects |
|---|---|---|---|
| Ammonium bifluoride | Corrosive<br>Irritant | | Cardiac<br>Gastrointestinal tract<br>Kidney<br>Lung<br>Metabolic<br>Nervous System<br>Respiratory<br>Teeth |
| acetic acid | Corrosive<br>Irritant | Allergen | Eyes<br>Gastrointestinal<br>Immune system<br>Kidney |
| Ammonium fluoride | Corrosive<br>Irritant | | Cardiac<br>Kidney<br>Metabolic<br>Muscle<br>Nervous System<br>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. Follow all local, state, federal and provincial regulations for disposal.

## 14. TRANSPORT INFORMATION

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

**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 as active or are exempt from listing on the Toxic Substances Control Act (TSCA) 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:** | Please refer to the GHS classification in Section 2 |
| **CERCLA/SARA Section 313:** | None above reporting de minimis. |
| **California Proposition 65:** | No California Proposition 65 listed chemicals are known to be present. |

**Canada Regulatory Information**

| | |
|---|---|
| **CEPA DSL/NDSL 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 Safety Data Sheet format.

**Prepared by:** Regulatory Affairs

**Issue date:** 11/21/2024

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