

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Product Name: AMCO 66A CAS number: N/A - mixture
Chemical Name & Synonyms: N/A - mixture
Appearance: White granular powder with no noticeable odor
Use: Aluminum soldering flux
Manufacturer: Force Industries Division. 28 Industrial Blvd. Paoli, PA 19301. Tel. 610-647-3575
EMERGENCY PHONE No. CALL CHEMTREC (800) 424-9300 * Available 24 Hours

II. CHEMICAL COMPOSITION

| <u>Material</u> | <u>SARA III</u> | <u>CAS Number</u> | <u>OSHA PEL</u> | <u>ACGIH TLV</u> |
|-------------------|-----------------|-------------------|----------------------------|----------------------------|
| Zinc Chloride | <90% | 7646-85-7 | 1.0 mg/m ³ | 1.0 mg/m ³ |
| Sodium Fluoride | <10% | 7681-49-4 | 2.5 mg/m ³ as F | 2.5 mg/m ³ as F |
| Ammonium Chloride | <20% | 12125-02-9 | 10 mg/m ³ | 10 mg/m ³ |

Others, if any, are non-hazardous and are claimed as trade secret.

Note: Zinc Chloride: Corrosive Overexposure (acute or chronic) may result in permanent disability see Sec. III
Fluoride: Acute and chronic effects (as sodium salt) See Section III. See also 29 CFR 1910.1000
Ammonium chloride: May be nuisance dust.

Note: Both fluorides and ammonia chloride are listed in 29 CFR 1910.1000. Use above zinc chloride levels, which are the most restrictive, for AMCO 4959.

Hazard Rating: HMIS: (H=3 F=0 R=1 PE=C) NFPA: (H=3 F=0 R=1)

III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: Danger. Causes severe burns to skin, eyes and respiratory system. Harmful if swallowed or inhaled. Fluorides affect bones, muscles and may have crippling effects.

Effects of Chronic Exposure: Dermatitis and contact burn to skin, eyes and respiratory system. Scarring of skin tissues.

Effects of Acute Overexposure

Swallowing: May be fatal. Corrosive to mucous membranes and digestive system.

Skin Absorption: None currently known.

Inhalation: Irritation to respiratory system. Coughing, chest pains, nausea and headaches. Existing lung disorders will be aggravated.

Skin Contact: Dermatitis, possible chemical burns; corrosive to skin. Existing disorders will be aggravated.

Eye Contact: Irritation/possible burn of eyes surfaces.

IV. EMERGENCY AND FIRST AID PROCEDURES

Swallowing: Call a physician or your Poison Control Center at once. Advise of Section II immediately. Corrosive to mucous membranes. Can lead to shock or coma.

Skin: Promptly flush with water to remove all residues. If rash or burn develops, consult a physician. Material is corrosive. HF may present. Over inhalation may cause life-threatening lung injury.

Inhalation: Remove to fresh air. If fumes are inhaled call a physician.

Eyes: Flush with water for at least 15 minutes to remove all residues. Get medical help NOW. Blindness can result.

V. FIRE AND EXPLOSION DATA

Flash point (°F): N/A
Flammable limits in air: LOWER: N/A UPPER: N/A (% by volume)
Extinguishing media: N/A
Special fire fighting method: May release zinc oxide and HCl fumes Metal halide and toxic fumes produced..
Unusual fire and explosion hazards: Dense smoke may be generated

VI. REACTIVITY INFORMATION

Stability considerations / Conditions to avoid: Stable / None
Hazardous polymerization / Conditions to avoid: Will not occur / None
Incompatibility, Materials to avoid: Strong acid, cyanides
Hazardous combustion or decomposition products: In presence of H₂O and heat, HCl, HF, and ZnO.

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VII. SPILL AND LEAK RESPONSE

Steps to be taken if material is released or spilled: If molten allow to solidify, contain spill, absorb, sweep-up and dispose. Flush area to chemical sewer
Waste disposal method: Dispose of in accordance with all federal, state, and local regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory protection: If the work station is not properly ventilated to exhaust all fumes and vapors, use a NIOSH approved mask.
Ventilation: Maintain air flow away from user to remove all fumes and vapors, so that the PEL is never exceeded. Adhere to environmental regulations for exhausts.
Protective gloves: Chemical and acid impervious.
Eye protection: Chemical tight safety goggles. Do not wear contact lenses.
Other protective equipment: Full protective equipment normally used in a braze/soldering operation to prevent any contact. Review operations to avoid contact with hazardous gas, liquid or solid. See also:
29 CFR 1910. 132 - 29 CFR 1910. 140. Personal Protective Equipment
29 CFR 1910. 251 - 29 CFR. 257. Welding, Cutting and Brazing

IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store solution at ambient conditions. Wash thoroughly after handling to remove all residues.
Other precautions: Do not breathe fumes. Professionally wash contaminated clothing before re-use. Existing lung disorders will have increased toxic susceptibility.

X. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---------------------------------------|------|----------------------|----------|
| Boiling Point (°F @ 760 mmHg): | N/A | Specific gravity: | 2.7 |
| Bulk density (lb/ft ³): | 93.8 | Vapor pressure: | N/E |
| Percent volatiles by volume: | N/A | Solubility in water: | Complete |
| Evaporation rate (butyl acetate = 1): | N/A | | |

XI. OPTIONAL INFORMATION

Department of Transportation: DOMESTIC GROUND
Proper shipping name: Corrosive Solid, N.O.S. (Zinc Chloride, Sodium Fluoride)
Hazard Class: Class 8
ID & Packing Group No. UN 1759, PG III
ERG Guide Number: 154
Toxic Substance Control Act: All components of this compound are listed within the TSCA inventory.
SARA Title III Program: This product contains the following toxic chemicals subject to the reporting requirements of EPCRA of 1986 and 40 CFR 372. This information must be included in all MSDS that are copied and distributed for this material.

| <u>Chemical Name</u> | <u>CAS No.</u> | <u>Concentration</u> |
|----------------------|----------------|----------------------|
| Zinc Chloride | 7646-85-7 | <90% |

CERCLA. The following components of the product and their respective RQs are listed in 40CFR 302.

| | | | |
|-------------------|---------|------------|---------------|
| Ammonium Chloride | CAS No. | 12125-02-9 | RQ= 5000 lbs. |
| Sodium Fluoride | CAS No. | 7681-49-4 | RQ= 1000 lbs |
| Zinc Chloride | CAS No. | 7646-85-7 | RQ= 1000 lbs |

Hazard Communication Program: Hazardous warnings and training requirements as mandated for corrosive
Pennsylvania: This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: Zinc Chloride
California: This product contains the following compounds subject to the reporting and labeling requirements of Proposition 65: None
Miscellaneous: This product contains the following marine pollutants listed under 49 CFR 172.101 Appendix B: None

NOTES: NA=Not Applicable NE=Not Established H=Health
F=Fire R=Reactivity PE=Personal Equipment

While we believe all information presented herein is accurate and reliable, the data are not to be taken as a guarantee or representation of any kind for which Force Industries assumes legal responsibility. They are offered solely for your consideration, investigation, and verification.