

# MATERIAL SAFETY DATA SHEET

## I. PRODUCT IDENTIFICATION

Product Name: AMCO 121 CAS number: N/A - mixture  
Chemical Name & Synonyms: N/A - mixture  
Appearance: Clear water- white liquid with no characteristic  
Use: Stainless Steel Soldering Flux  
Manufacturer: Force Industries Division. 28 Industrial Blvd. Paoli PA 19301. Tel. 610-647-3575  
EMERGENCY PHONE No. Transportation: 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	<30%	7646-85-7	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Ammonium Chloride	-----	12125-02-9	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Hydrochloric Acid	<30%	7647-01-0	7 mg/m <sup>3</sup>	7.5 mg/m <sup>3</sup>
Methyl Alcohol	<3%	67-56-1	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Boric acid	-----	10043-35-3	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

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

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

## III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: Danger. Can cause severe burn to skin, eyes, and respiratory system

Effects of Chronic Exposure: Contact burns, dermatitis. Possible liver and kidney effects.

Effects of Acute Overexposure

Swallowing: Chemical burn to digestive system. Nausea, vomiting and possible shock  
Skin Absorption: Dermatitis, possible chemical burn. Existing skin disorders will be aggravated.  
Inhalation: Irritation to respiratory system. Headache, cough or fever. Pre-existing lung disorders will be aggravated.  
Skin Contact: Dermatitis, possible chemical burns, corrosive to skin. Existing disorders will be aggravated.  
Eye Contact: Irritation to eyes, may burn of eye surfaces, tearing, may cause blindness.

## IV. EMERGENCY AND FIRST AID PROCEDURES

Swallowing: Contain strong acid. Call a physician or Poison control center. Advise of section II.  
Skin: Promptly flush with water to remove all residues. If rash or burn develops, consult a physician. Material is corrosive.  
Inhalation: Remove to fresh air. Do not aspirate into lungs. 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): 52 as Methyl alcohol  
Flammable limits in air: LOWER: N/E UPPER: N/E (% by volume)  
Extinguishing media: Does not support combustion. Be aware of other materials in surrounding area to determine if water, fog, foam or CO<sub>2</sub> may be used.  
Special fire fighting method: Full protective equipment required. May release toxic metal halide and corrosive hydrochloric acid fumes.

## VI. REACTIVITY INFORMATION

Stability considerations / Conditions to avoid: Stable / Reacts with metals. Hydrogen gas may liberate  
Hazardous polymerization / Conditions to avoid: Will not occur / None  
Incompatibility, Materials to avoid: In contact with hot metals like iron, explosive hydrogen gas may evolve.  
Hazardous combustion or decomposition products: Hydrogen chloride, Ammonia, Zinc chloride.

## VII. SPILL AND LEAK RESPONSE

Steps to be taken if material is released or spilled: 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.

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## 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 1910. 257. Welding, Cutting and Brazing

## IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Wash thoroughly after handling to remove all residues. Store solution at ambient conditions. Do not use metal container.

Other precautions: Do not breathe fumes. Professionally wash contaminated clothing before re-use. Use full protection equipment.

## X. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (°F @ 760 mmHg):	228	Specific gravity (H <sub>2</sub> O = 1 @ 72°F):	1.347
Vapor density (air = 1):	0.48	Vapor pressure:	N/E
Percent volatiles by volume:	<15%	Solubility in water:	Completely
Evaporation rate (butyl acetate = 1) :	<1		

## XI. OPTIONAL INFORMATION

Department of Transportation: DOMESTIC GROUND

Proper shipping name: Corrosive liquid N.O.S (Hydrochloric acid, Zinc chloride)

Hazard Class: 8

ID & Packing Group No. UN 1760 PG II

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>
Hydrochloric Acid	7647-01-0	<30%
Zinc compound	7646-85-7	<30%
Methanol	67-56-1	<3 %

Hazard Communication Program: Hazardous warnings and training requirements as mandated for corrosive

State Right-to-Know Programs:

Pennsylvania: This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: Hydrochloric Acid, Zinc Chloride, Ammonium

California: This product contains the following compounds subject to the reporting and labeling requirements of Proposition 65: 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.