

# MATERIAL SAFETY DATA SHEET

## I. PRODUCT IDENTIFICATION

Product Name: AMCO 64 CAS number: N/A - mixture  
Chemical Name & Synonyms: N/A - mixture  
Appearance: Viscous yellow/amber liquid with strong ammonia odor.  
Use: General purpose low temperature 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>
Aminoethylethanolamine	--	111-41-1	-----	-----
Ammonium fluoroborate*	--	13826-83-0	2.5 mg/m <sup>3</sup> as F	2.5 mg/m <sup>3</sup> as F
Zinc oxide	--	1314-13-2	5.0 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=0 R=0 PE=E)

NFPA: (H=3 F=0 R=0)

Note: \*Chronic fluoride absorption can result in osseous fluorosis, increased radiographic density of the bones and mottling of the teeth. Read OSHA 29 CFR 1910.1000 July 1, 1980, standard for fluorides.

\*This compound when used as intended will generate fumes of boron oxide; contact your industrial hygiene department.

## III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: DANGER! Causes severe burns to skin and eyes. Harmful if inhaled swallowed, or absorbed through the skin.

Effects of Chronic Exposure: Coughing, liver and kidney effects, nausea erythema. Osseous fluorosis due to fluoride.

Effects of Acute Overexposure

Swallowing: Can cause damage to digestive system. Corrosive to mucous membranes. May cause salivation, nausea, vomiting, diarrhea and abdominal pain. Fluoride ion can reduce serum calcium levels, possible causing fatal hypocalcemia. Systemic toxicity and shock. Do not aspirate into lungs.

Skin Absorption: None currently known. Fumes may be penetrable.

Inhalation: Highly irritating to respiratory system. Coughing and sneezing. Existing lung disorders will be aggravated. Inhalation may yield: chills, labored breathing, fevers, and unproductive cough. The fluoride ion may cause hypocalcemia-calcium deficiency in the blood. Inflammation and necrosis of mucous membranes.

Skin Contact: Severe dermatitis; possible chemical burns and pustular dermatitis, corrosive to skin. Existing disorders will be aggravated.

Eye Contact: Strong irritation to eyes, may burn of eye surfaces. May cause blindness.

## IV. EMERGENCY AND FIRST AID PROCEDURES

Swallowing: Corrosive to mucous membranes. May contain corrosive hydrofluoric acid solution. Call a physician at once or your Poison Control Center.

Skin: Promptly flush with water to remove all residues. If rash or burn develops, consult a physician. Product is corrosive, Hydrofluoric acid possible

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

Eyes: Flush with water for at least 20 minutes to remove all residues. Get medical help now. Blindness can result. Hydrofluoric acid possible

## V. FIRE AND EXPLOSION DATA

Flashpoint (°F): 275

Flammable limits in air: LOWER: 1.6 estimated UPPER: 10.0 estimated (% by volume)

Extinguishing media: Water, fog foam, or dry chemical

Special firefighting procedures: Full protective equipment required. May release toxic ammonia, boron oxide, fluoride fumes and oxides of nitrogen.

Unusual fire and explosion hazards: Avoid splashing this material and solutions of it onto personnel. Hydrofluoric acid solution may be formed within water runoff.

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## VI. REACTIVITY INFORMATION

Stability considerations/Conditions to avoid: Stable/Excessive heat  
Hazardous polymerization: Will not occur/None  
Incompatibility/Materials to avoid: Cyanide, sulfides, strong oxidants  
Hazardous combustion/Decomposition products: Toxic hydrofluoric acid, ammonia, and boron trifluoride are expected.

## VII. SPILL AND LEAK RESPONSE

Steps to be taken if material is released or spilled: Contain, absorb, sweep-up and dispose. Flush area to chemical sewer. Prevent direct contact to skin, eyes, and clothes.  
Waste disposal method: Dispose of in accordance with all federal, state, and local regulations.

## VIII. SPECIAL PROTECTION EQUIPMENT

Respiratory protection: If the work station is not properly ventilated to exhaust all fumes and dusts, use a NIOSH approved mask for complete respiratory and eye protection.  
Ventilation: Maintain air flow away from user to remove all fumes and dusts, 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/welding operation prevent any contact. Review operations to avoid contact with hazardous gas, liquids or solids.  
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

Handling/storage precautions: Store flux at ambient conditions, keep containers tightly closed and away from foodstuffs. Poison. Wash thoroughly after handling to remove all residues. No eating or smoking in work area.  
Other precautions: Do not breathe fumes, may be fatal! Professionally wash contaminated clothing before re-use. Existing lung disorders will have increased toxic susceptibility.

## X. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point, °F:	N/A	Specific gravity, 72°F:	1.38
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 liquid, N.O.S. (Aminoethylethanolamine, Ammonium Fluoborate)  
Hazard Class: 8  
ID & Packing Group Number: UN 1760, PG II  
ERG Guide Number: 154

Toxic Substance Control Act: All components of this compound are listed within the TSCA inventory.  
Hazard Communication Program: Hazardous warnings and training requirements as mandated for corrosive products.

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 compounds	N/A	<15%

### State Right-to-Know Programs

Pennsylvania: This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: aminoethylethanolamine, ammonium fluoborate and zinc oxide  
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.