

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Product Name: AMCO 69 CAS number: N/A - mixture
Chemical Name & Synonyms: N/A - mixture
Appearance: Viscous 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

Material	SARA III	CAS Number	OSHA PEL	ACGIH TLV
Ethanolamine	--	141-43.5	8.0 mg/m ³	---
Ammonium fluoborate	--	13826-83-0	2.5 mg/m ³ as F	2.5 mg/m ³ as F
Zinc oxide	--	1314-13-2	5.0 mg/m ³	10 mg/m ³
Diethanolamine	--	111-42-2	12.9 mg/m ³	---
Triethanolamine	--	102-71-6	--	5.0 mg/m ³
Stannous Fluoborate	--	13814-97-6	2.5 mg/m ³ as F	2.5 mg/m ³ as F

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)

III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: Danger. Skin, nasal, and respiratory irritant, nausea. Harmful if swallowed or inhaled.

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

Effects of Acute Overexposure

Swallowing: Can cause damage to digestive system and mucous membranes. May cause salivation, nausea, vomiting, diarrhea and abdominal pain. Fluoride ion can reduce serum calcium levels, possible causing 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.

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

Eye Contact: Corrosive to eye tissues. May cause blindness.

IV. EMERGENCY AND FIRST AID PROCEDURES

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

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): 200

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

Extinguishing media: Water, fog, foam, or dry chemical

Special firefighting procedures: Full protective equipment required. May release toxic ammonia, boron oxide or fluoride fumes. 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: decomposes forming corrosive, skin penetrating and toxic gases.

Hazardous polymerization/Conditions to avoid: Will not occur / None

Incompatibility/Materials to avoid: Cyanide, sulfides, strong oxidants, nitrites

Hazardous combustion or 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: If molten allow to solidify, 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 workstation is not properly ventilated to exhaust all fumes and dusts, use a NIOSH approved mask.

Ventilation: Maintain airflow 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 so as to prevent any contact. Review operations to avoid contact with hazardous gas, liquids or solids.

IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store flux at ambient conditions, keep under extremely dry and controlled conditions. Wash thoroughly after handling to remove all residues. No eating or smoking in work area.

Other precautions: Do not breathe fumes. Professionally wash contaminated clothing before re-use. Material will naturally absorb moisture and cake solid. Existing lung disorders will have increased toxic susceptibility.

X. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (°F @ 760 mmHg):	N/A	Specific gravity:	1.31
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: Ethanolamine Solution Mixture

Hazard Class: Class 8

ID & Packing Group Number: UN 2491, PG III

ERG Guide Number: 153

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. (29 CFR 1910.1200)

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 compound	N/A	<2%

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State Right-to-Know Programs:

Pennsylvania:

This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: Ethanolamine, Diethanolamine, Triethanolamine 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.