

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Product Name: AMCO 4013 CAS number: N/A - mixture
Chemical Name & Synonyms: N/A - mixture
Appearance: White powder with no characteristic odor
Use: Aluminum welding flux
Manufacturer: Force Industries Division 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
Sodium Chloride	No	7647-14-5	-----	-----
Potassium Chloride	No	7447-407	-----	10 mg/m ³
Lithium Chloride	No	7447-41-8	5 mg/m ³	10 mg/m ³
Lithium fluoride	No	7789-24-4	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.

Note: Chronic fluoride absorption can result in ossious fluorosis, increased radiographic density of the bones and mottling of the teeth. Read OSHA 29 C.F.R. 1910.1000, July 1, 1980, (standard for fluoride).

Note: Exposure to Lithium is relatively non-hazardous per two NIOSH studies HHE 80-036-422 and HHE 77-59-496. Chronic exposure to Lithium may a result in neuromuscular effects, hyperactive reflexes, and weight loss. Consult your industrial hygiene department.

Hazard Rating: HMIS: (H =2 F=0 R=0 PE=C) NFPA: (H=2 F=0 R=0)

III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: May be fatal if swallowed; causes eye and skin burns. Toxic!
Effects of Chronic Exposure: Coughing, erythema, nausea, and kidney effects.
Effects of Acute Overexposure
Swallowing: Nausea, vomiting. Can cause chemical burn to digestive system and toxic effects due to Lithium ion.
Skin Absorption: Not known as a skin absorbent.
Inhalation: Irritant to respiratory system. Lithium dust and fumes are absorbed through the lungs. Lung damage. Pre-existing lung disorders will be aggravated.
Skin Contact: Dermatitis, possible chemical burn. Existing skin disorders may be aggravated.
Eye Contact: Irritation/possible burn to eye surfaces.

IV. EMERGENCY AND FIRST AID PROCEDURES

Swallowing: Lithium and fluoride present. Call a physician or your Poison Control Center .
Skin: Wash hands with soap and water to remove all residue. If rash develops, consult a physician.
Inhalation: Remove to fresh air. If fumes, vapors, or dusts are inhaled, call a physician.
Eyes: Flush with water for at least 15 minutes to remove all residue. Promptly get medical help.

V. FIRE AND EXPLOSION DATA

Flash point (°F): N/A
Flammable limits in air: LOWER: N/A UPPER: N/A (% by volume)
Extinguishing media: None; product is an inherent retardant.
Special fire fighting procedures: Metal halide and toxic fumes produced. Use a Self Contained Breathing Apparatus.
Unusual fire and explosion hazards: None.

VI. REACTIVITY INFORMATION

Stability considerations/Conditions to avoid: Stable/None
Hazardous polymerization/Conditions to avoid: Will not occur/None
Incompatibility/Materials to avoid: Strong acids, cyanides, and sulfides.
Hazardous combustion or Decomposition products: In presence of water and heat, HCl and HF will be given off.

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VII. SPILL AND LEAK RESPONSE

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

VIII. SPECIAL PROTECTION INFORMATION

Respiratory protection: If the workstation is not properly ventilated to exhaust all fumes, vapors, and dusts, use a NIOSH approved mask.
Ventilation: Maintain airflow away from user to remove all fumes, vapors, and dusts, so that the PEL is never exceeded.
Protective gloves: Chemical and oil 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.

IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Wash hands thoroughly after handling to remove all residue. Store material under ambient conditions.
Other precautions: Remove and professionally wash contaminated clothing before re-use.

X. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (°F @ 760 mmHg):	N/A	Specific gravity (H ₂ O = 1 @ 72°F):	2.087
Vapor density (air = 1):	N/A	Vapor pressure:	N/A
Percent volatiles by volume:	N/A	Solubility in water:	Moderate
Evaporation rate (butyl acetate = 1):	N/A		

XI. OPTIONAL INFORMATION

Department of Transportation: DOMESTIC GROUND - Not a regulated product
Proper shipping name: N/A
Hazard Class: N/A
ID & Packing Group Number: N/A
ERG Guide Number: N/A

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 contact irritants. (29 CFR 1910.1200)

State Right-to-Know Programs:
Pennsylvania: This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: None
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.