

MATERIAL SAFETY DATA SHEET

FORCE INDUSTRIES DIVISION
American Solder and Flux Co., Inc.
28 Industrial Boulevard
Paoli, PA 19301

PRODUCT: AIRCOSIL #12
EFFECTIVE DATE: 7-1-97
REPLACES DATE: 7-24-95
PAGE: 1 of 5
CODE: 240

191 Fallon Road
Hollister, CA 95023

PHONE NUMBER: (800) 647-3575 - DAY
EMERGENCY: (800) 424-9300 - ALL HOURS

I. PRODUCT IDENTIFICATION

PRODUCT NAME: AIRCOSIL #12

Appearance: Smooth white paste with no noticeable odor
Use: General purpose "silver" solder/braze flux

CAS number: N/A - mixture
Name: N/A - mixture

Chemical Name & Synonyms: N/A - mixture

II. CHEMICAL COMPOSITION

<u>MATERIAL</u>	<u>CAS #</u>	<u>PEL</u>	<u>HAZARD</u>
Potassium bifluoride	7789-29-9	2.5 mg/m ³	OSHA
Potassium tetraborate**	1332-77-0	5 mg/m ³	OSHA
Boric acid	10043-35-3	15 mg/m ³	OSHA
Titanium Dioxide	1317-80-2	15 mg/m ³	OSHA

Remaining ingredients, if any, are non-hazardous and considered trade secret.

N/E = Not Established
N/A = Not Applicable

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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.

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INDUSTRIES

PRODUCT: AIRCOSIL #12
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REPLACES DATE: 7-24-95
PAGE: 2 of 5
CODE: 240

III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: WARNING! Skin, nasal, and respiratory irritant; nausea. May be harmful if swallowed or if fumes are inhaled.

Effects of Chronic Exposure: Coughing, erythema, nausea. 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. Potassium ion may cause lower blood pressure, death. Fluoride ion can reduce serum calcium levels, possibly causing fatal hypocalcemia.

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 hypo-calcemia - calcium deficiency in the blood. Inflammation and necrosis of mucous membranes.

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

Eye Contact: Strong irritation to eyes, tearing, burn of eye surface, and corrosive to eyes. May cause blindness.

IV. EMERGENCY AND FIRST AID PROCEDURES

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

Skin: Promptly flush with water to remove all residue. If rash or burn develops, consult a physician. Severe irritant. 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 residue. Get medical help NOW! Blindness can result! Hydrofluoric acid possible.

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PAGE: 3 of 5
CODE: 240

V. FIRE AND EXPLOSION DATA

Flashpoint (°F): N/A

Flammable limits in air (% by volume)
LOWER: N/A
UPPER: N/A

Extinguishing media: Does not support combustion. Be aware of other materials in surrounding area to determine if water, fog, foam or CO₂ may be used.

Special firefighting procedures: Full protective equipment required. May release boron oxide and fluoride fumes.

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

VI. REACTIVITY INFORMATION

Stability considerations: Stable
Conditions to avoid: Excessive heat: decomposes forming corrosive, skin penetrating, and toxic gases.

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

Incompatibility
Materials to avoid: Acids, alkalis

Hazardous combustion or Decomposition products: Hydrogen fluoride and caustic potash 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 local, state, and federal regulations.

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PAGE: 4 of 5
CODE: 240

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VIII. SPECIAL PROTECTION INFORMATION
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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/soldering operation so as to 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

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IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS
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Precautions to be taken in handling and storage: Store flux at ambient conditions, keep containers tightly closed and away from foodstuffs. Wash thoroughly after handling to remove all residue. 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.

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X. PHYSICAL AND CHEMICAL PROPERTIES
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Boiling Point (°F @ 760 mmHg): -212
Specific gravity (H₂O = 1 @ 72°F): 1.55
Percent volatiles by volume: N/A
Solubility in water: Moderate
Evaporation rate (butyl acetate = 1): N/A

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XI. OPTIONAL INFORMATION
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Department of Transportation: Not a regulated product - Domestic Ground.

Proper shipping name: N/A
Hazard Class: N/A
ID & Packing Group Number: N/A
Additional Information: N/A
ERG Guide Number: N/A

Toxic Substance Control Act: All components of this compound are listed within the TSCA inventory.

State Right-to-Know Programs:

Pennsylvania: This product contains borax and titanium dioxide which are listed in PA Code Title 34, Hazardous Substance List.

California: As currently manufactured this material contains compounds subject to the reporting and labelling requirements of Proposition 65, contact the manufacturer.

Miscellaneous:

- * Potassium bifluoride is currently not regulated as a SARA list hazard. The PEL expressed is for that of fluoride as F. Chronic fluoride absorption can result in osseous fluorosis, increased radiographic density of the bones and mottling of the teeth. Read OSHA CFR 1910.1000 July 1, 1980 (standard for fluorides).
- ** The PEL expressed is for that of boron oxide, B₂O₃, as a fume. This compound when used as intended will generate fumes of boron oxide. Contact your industrial hygiene department.

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