

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Auralloy 700 Silver Brazing Flux
AURALLOY PART NUMBER: 8796
PRODUCT TYPE: Ultra Flux Silver Brazing Flux
CHEMICAL FAMILY: N/A

DATE PREPARED: January 2000

CHROMATE INDUSTRIAL CORPORATION
100 DaVinci Drive, Bohemia, NY 11716 • (888) 567-2206

2. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME	% BY WEIGHT	OSHA PEL	ACGIH TLV	STEL	CAS#
Potassium Tetraborate	30-40	Not Established	Not Established	N/D	1332-77-0
Boric Acid	20-30	Not Established	Not Established	N/D	10043-35-3
Potassium Bifluoride	20-30	2.5 mg/m ³ (as F)	2.5 mg/m ³ (as F)	N/D	7789-29-9
Potassium Pentaborate	1-5	Not Established	Not Established	N/D	11128-29-3
Sodium Dodecyl Sulfate	0-0.5	Not Established	Not Established	N/D	151-21-3
Water	10-20	Not Established	Not Established	N/D	7732-18-5

NOTE: The percentage by weight values reported for the ingredients in this product represent approximate formulation values.

* An asterisk (*) indicates the toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372.

3. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY: Inhalation, Ingestion, Skin, Eye

EFFECTS OF OVEREXPOSURE:

INHALATION: May cause respiratory tract and mucous membrane irritation. Harmful if inhaled. May cause nasal discharge, nosebleed, cough, sore throat and labored breathing, bronchospasm, pulmonary edema and systemic toxicity.

INGESTION: Harmful if swallowed. May cause abdominal pain, diarrhea, vomiting, excess salivation, thirst, perspiration and painful spasms of the limbs. Large amounts may be fatal.

SKIN CONTACT: May cause skin irritation. Causes burns which are not immediately visible or painful. Harmful if absorbed through skin. May cause fluoride burns which may not be immediately painful or evident, especially on prolonged contact. This material may be absorbed through the skin resulting in systemic poisoning. Symptoms of poisoning are similar to those that occur with ingestion.

EYE CONTACT: May cause eye irritation and burns.

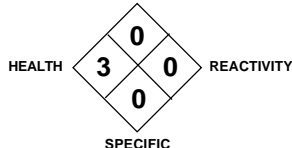
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: May adversely affect existing medical conditions such as eye, skin, respiratory, liver and/or kidney ailments and central nervous system disorders.

CHRONIC HEALTH HAZARDS: Prolonged or repeated inhalation and ingestion may cause delayed injury involving the kidneys and the blood, gastrointestinal, nervous and reproductive systems. Exposure to fluorides over years may produce mottling of tooth enamel, embrittlement and decalcification of bones, and increased calcification of ligaments and vertebrae resulting in spinal stiffness (fluorosis). Prolonged absorption of boron compounds may cause mild gastrointestinal irritation, loss of appetite, nausea and erythematous rash. Dryness of the skin and mucous membranes, loss of hair, conjunctivitis and kidney injury have also been observed. Reproductive effects have been observed in laboratory animals.

HAZARD RATINGS

NFR: FLAMMABILITY

HMSI:



4. FIRST AID MEASURES

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician.

INGESTION: If swallowed, do not induce vomiting. Give large quantities of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

SKIN CONTACT: Immediately flush with cold water for at least 15 minutes while removing contaminated clothing and shoes, paying particular attention to skin under nails. Then immerse and soak contaminated area in 0.13% (1:750) iced, aqueous Zephiran Chloride solution for 30-60 minutes. Saturated compresses can be used if area cannot be immersed. Change compresses every two minutes. If irritation persists after initial Zephiran Chloride treatment, continue with Zephiran Chloride (Benzalkonium Chloride) and call a physician.

EYE CONTACT: Immediately flush with plenty of water for least 30 minutes. Do not use Zephiran Chloride solutions on eyes. Call a physician.

5. FIRE FIGHTING MEASURES

FLASH POINT (METHOD USE): Not Applicable **FLAMMABLE LIMITS: LEL** N/A **UEL** N/A

EXTINGUISHING MEDIA: Use water spray, dry chemical, alcohol foam, or carbon dioxide. Use water to keep fire-exposed containers cool.

FIRE FIGHTING PROCEDURES: Wear NIOSH/MSHA approved positive-pressure self-contained breathing apparatus and protective clothing as specific in 29 CFR 1910.156.

UNUSUAL AND EXPLOSION HAZARDS: Not a fire or explosion hazard. However, toxic and corrosive fluoride compounds may be released in a fire situation.

6. ACCIDENTIAL RELEASE MEASURES

SPILLS OR LEAKS: Wearing full protective clothing, control spill sources, contain by diking and ventilate area. Soak up spill using an absorbent. Scoop into container. Notification of the National Response Center (800-424-8802) may be required. Refer to EPA, DOT and applicable state and local regulations for current response information. It is recommended that each user establish a spill prevention, control and counter-measure plan (SPCC). Such plan should include procedures applicable to proper storage, control and clean-up of spills, including reuse or disposal as appropriate (see Section 13: Disposal Considerations).

7. HANDLING AND STORAGE

SPECIAL PRECAUTIONS: Wash thoroughly after handling. Keep container closed. Store in a cool, dry location away from incompatible materials. Avoid contact with any dusts, mists or fumes resulting from the use of this product. Do not eat, drink, or smoke in work area. Use with adequate ventilation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN: Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWAs) and total dust (particulates only). All ACGIH TLVs refer to the 1995-96 Standards. All OSHA PELs refer to 29 CFR Part 1910 Air Contaminants: Final Rule, January 19, 1989*. (*NOTE: As a result of the July 7, 1992 decision by the U.S. Circuit Court of Appeals (AFL-CIO v. OSHA) to vacate the 1989 PELs, OSHA will no longer enforce these new limits and will return to the pre-1980 PELs).

RESPIRATORY: If there is a potential to exceed the TLV, NIOSH/MSHA approved respiratory protection is required. For airborne levels up to 10 times the appropriate TLV's, an air purifying acid gas cartridge respirator would be suitable. If used in a manner that generates a mist, a dust/mist cartridge as well as the acid gas cartridge would be necessary. Above 10 times the TLV, an air supplied full facepiece respirator would be required. If respiratory protection is used, follow all the requirements for respirator programs set forth in the OSHA regulations (29 CFR 1910.134).

SKIN PROTECTION: Rubber or neoprene gloves. Body protection as necessary to prevent skin contact, refer to ANSI/ASC Z49.1-94 (Safety in Welding, Cutting and Allied Processes), published by the American Welding Society, for further information on the selection of personal protective equipment.

EYE PROTECTION: Chemical goggles.

VENTILATION: General; local exhaust ventilation as necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

PERSONNEL SAMPLING PROCEDURE: For fluoride compounds refer to NIOSH Manual of Analytical Methods (NMAM), 45h Edition, Methods 7902, 7906.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A

VAPOR PRESSURE (mm Hg): N/A

VAPOR DENSITY (AIR = 1): N/A

SOLUBILITY IN WATER: 100%

PERCENT VOLATILE BY VOLUME: N/A

VOLATILE WEIGHT: N/A

APPEARANCE & ODOR: White Paste, Odorless

PRODUCT WEIGHT: N/D

SPECIFIC GRAVITY (H₂O = 1): 1.49

MELTING POINT: 422.4°C

pH: 8.8 to 9.1

EVAPORATION RATE: N/A

FORM: Paste **VOLATILE COMPONENTS:** N/A

10. STABILITY AND REACTIVITY

STABILITY: Generally considered stable.

CONDITIONS TO AVOID: Temperatures at or above 225°C.

HAZARDOUS POLYMERIZATION: Polymerization is not expected to occur.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong acids and alkalis.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Emits toxic and corrosive fluoride compounds. May also emit oxides of boron and potassium when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

CHEMICAL NAME	% BY WEIGHT	LD50	LC50	CAS #
Potassium Tetraborate	30-40	Not Available	Not Available	1332-77-0
Boric Acid	20-30	3,450 mg/kg Mouse, Oral	9,600 ug/m ³ /4 hr Rat	10043-35-3
Potassium Bifluoride	20-30	Not Available	Not Available	7789-29-9
Potassium Pentaborate	1-5	Not Available	Not Available	11128-29-3
Sodium Dodecyl Sulfate	0-0.5	1,288 mg/m ³ Rat, Oral	Not Available	151-21-3
Water	10-20	Not Available	Not Available	7732-18-5

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: No data available.

CHEMICAL FATE INFORMATION: No data available.

N/D — NOT DETERMINED N/A — NOT APPLICABLE N/R — NOT REGULATED

Conforms to 29 CFR 1910.1200, OSHA

ANSI Z129.1 - 1988 American National Standard for Hazardous Industrial Chemicals

13. DISPOSAL CONSIDERATIONS

RCRA HAZARD CLASS: D002

WASTE DISPOSAL METHOD: Federal, state and local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. All waste material should be reviewed to determine the applicable hazards (testing may be necessary). Any waste solution with a pH of $< = 2$ or $> = 12.5$ is considered a hazardous waste under EPA hazardous waste regulations. Disposal requirements are dependent on the hazard classification and will vary – by location and the type of disposal selected.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented above incomplete, inaccurate or otherwise inappropriate.

As local regulations may vary; all waste must be disposed/recycled/reclaimed in accordance with federal, state and local environmental control regulations.

14. TRANSPORT INFORMATION

INTERNATIONAL

UN NUMBER: UN3266

UNITED STATES

EPA WASTE NUMBER: D002

DOT CLASSIFICATION: 8 Corrosive Material

DOT PROPER SHIPPING NAME: Corrosive liquid, basic inorganic, n.o.s. (Contains Potassium Bifluoride) (NOTE: Validated export license required for IC60C outside of COCOM countries. Consumer quantity ORM-D, when purchase in < 1 liter/unit and not exceeding 66 lbs/box.)

PACKING GROUP: III

CANADA:

PIN NUMBER: UN3266

TDG CLASS: 8 Corrosive Material

EC

DGL: Corrosive Substance

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

TSCA: In TSCA

SARA 311 AND 312 HAZARD CATEGORIES

IMMEDIATE (ACUTE) HEALTH HAZARD: Yes

DELAYED (CHRONIC) HEALTH HAZARD: Yes

FIRE HAZARD: No

REACTIVITY HAZARD: No

SUDDEN RELEASE OF PRESSURE: No

SARA SECTION 313 NOTIFICATION: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

OZONE DEPLETING SUBSTANCES (ODS): This product neither contains nor is manufactured with an ozone depleting substance subject to the labelling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

VOLATILE ORGANIC COMPOUNDS (VOC): None

US STATE REGULATIONS

VOLATILE ORGANIC COMPOUND (CARB): Not Determined

CANADIAN REGULATIONS

DSL/NDL: DSL

WHMIS CLASSIFICATION: Class D Division 2 Subdivision B Class E

EUROPEAN REGULATIONS

EINECS: Yes

OTHER REGULATIONS

MITI (Japan): No

AICS (Australia): Yes

16. OTHER INFORMATION

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, and management and for persons working with or handling this product. The information presented in the MSDS is premised upon proper handling and anticipated uses and is for the material without chemical additions/alterations. We believe this information to be reliable and up-to-date as of the date of publication, but make no warranty that it is. Additionally, if this MSDS is more than three years old, please contact the supplier at the phone number listed in Section I to make certain that this sheet is current.

N/D — NOT DETERMINED N/A — NOT APPLICABLE N/R — NOT REGULATED

Conforms to 29 CFR 1910.1200, OSHA

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