



Code: ULTRA-FLUX
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WOLVERINE JOINING TECHNOLOGIES, INC.

MATERIAL SAFETY DATA SHEET

Product: ULTRA FLUX SILVER BRAZING FLUX, ULTRA FLUX II

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common Name : BRAZING FLUX
Chemical Name : CHEMICAL MIXTURE
Formula : CHEMICAL MIXTURE
Product CAS No.: CHEMICAL MIXTURE
Product Use : Welding/Brazing/Soldering

Supplier : WOLVERINE JOINING TECHNOLOGIES, INC.
Address : 235 KILVERT STREET
City, St, Zip : WARWICK, RI 02886
Phone : 1-401-739-9550

FOR CHEMICAL EMERGENCY CALL CHEMTREC (24 HOURS):
1-800-424-9300 (US, Canada, Puerto Rico, Virgin Islands)
1-703-527-3887 (Outside Above Area)

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% Wt.
POTASSIUM TETRABORATE	1332-77-0	30-40
BORIC ACID	10043-35-3	20-30
POTASSIUM BIFLUORIDE	7789-29-9	20-30
POTASSIUM PENTABORATE	11128-29-3	1-5
SODIUM DODECYL SULFATE	151-21-3	0-0.5

amounts may be fatal.

CARCINOGENICITY

NTP? NO

IARC? NO

OSHA? NO

CHRONIC HEALTH HAZARDS

Exposure to FLUORIDES over years may produce mottling of tooth enamel, embrittlement and calcification 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.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

May adversely affect existing medical conditions such as eye, skin, respiratory, liver and/or kidney ailments, and central nervous system disorders.

NOTE: See Section 8 for Exposure Limits, Section 11 for Toxicological Information and Section 12 for Ecological Information.

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 30 minutes. Hold eyelids open during this flushing with water. Call a physician immediately.

SKIN CONTACT: Flush area with water while removing contaminated clothing and shoes. Follow by washing with soap and large amounts of water until no evidence of chemical remains (15-20 minutes). Get medical attention if needed.

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, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

SECTION 5: FIRE-FIGHTING MEASURES

Flash Point: Not Applicable
Auto-Ignition: Not Applicable
LEL: Not Applicable
UEL: Not Applicable

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

INGREDIENT	PEL-OSHA	TLV-ACGIH
POTASSIUM TETRABORATE CAS NO.: 1332-77-0	None Established	None Established
BORIC ACID CAS NO.: 10043-35-3	None Established	None Established
POTASSIUM BIFLUORIDE CAS NO.: 7789-29-9	2.5 mg/m3 (as F)	2.5 mg/m3 (as F)
POTASSIUM PENTABORATE CAS NO.: 11128-29-3	None Established	None Established
SODIUM DODECYL SULFATE CAS NO.: 151-21-3	None Established	None Established
WATER CAS NO.: 7732-18-5	None Established	None Established

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 1999 Standards. All OSHA PELs refer to 29 CFR Part 1910 Air Contaminants: Final Rule, January 19, 1989.

RESPIRATORY PROTECTION

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 1910.139).

VENTILATION

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

BORIC ACID CAS NO.: 10043-35-3	20-30	3,450 mg/kg MOUSE, oral	9,600 ug/m3/4 hr RAT
POTASSIUM BIFLUORIDE CAS NO.: 7789-29-9	20-30	Not Available	Not Available
POTASSIUM PENTABORATE CAS NO.: 11128-29-3	1-5	Not Available	Not Available
SODIUM DODECYL SULFATE CAS NO.: 151-21-3	0-0.5	1,288 mg/m3 RAT, oral	Not Available
WATER CAS NO.: 7732-18-5	10-20	Not Available	Not Available

NOTE: See Sections 3, 8 and 12 for additional information.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY

No data available.

ENVIRONMENTAL FATE

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

US EPA Waste Number: Not Regulated

Federal, state and local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. All waste materials should be reviewed to determine the applicable hazards (testing may be necessary). 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.

SECTION 14: TRANSPORT INFORMATION

INTERNATIONAL

VOLATILE ORGANIC COMPOUND (CARB): Not Determined

CANADIAN REGULATIONS

DSL/NDSL: DSL

WHMIS Classification: Class D Division 2 Subdivision B
Class E

EUROPEAN REGULATIONS

EINECS: Yes

OTHER REGULATIONS

MITI (Japan): No

AICS (Australia): Yes

SECTION 16: OTHER INFORMATION

REVISIONS

Revision Number: 12

This MSDS has been revised in the following section(s):

SECTION 3: HAZARDS IDENTIFICATION

SECTION 4: FIRST AID MEASURES

LABEL COPY

PREPARATION INFORMATION

Prepared By: Corporate Environment, Health & Safety Group
Phone Number: See Section 1

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 Material Safety Data Sheet is more than three years old, please contact the supplier at the phone number listed in Section 1 to make certain that this sheet is current. Copyright Wolverine Technologies, Inc. License granted to make unlimited copies for internal use only. End of MSDS.....