Material Safety Data Sheet

Product Name **L.T. SILVER BRAZING FLUX**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name	**AUSWELD**
Address	46 Holloway Drive, Bayswater, VIC, AUSTRALIA, 3153
Telephone	(03) 9761 1099
Fax	(03) 9761 1899
Emergency	(03) 9761 1099
Email	arvo@ausweld.com
Web Site	http://www.ausweld.com/
Synonym(s)	360A - PRODUCT CODE • 360B - PRODUCT CODE • 360C - PRODUCT CODE
Use(s)	BRAZING FLUX • WELDING AID
SDS Date	20 Jan 2011

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R25	Toxic if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.

SAFETY PHRASES

S1/2	Keep locked up and out of reach of children.
S22	Do not breathe dust.
S24/25	Avoid contact with skin and eyes.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	3289	**DG Class**	6.1	**Subsidiary Risk(s)**	8
Packing Group	II	**Hazchem Code**	2X		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
BORIC ACID	B-H3-O3	10043-35-3	30-60%
POTASSIUM HYDROGEN FLUORIDE	K-H-F2	7789-29-9	30-60%
POTASSIUM HYDROXIDE	K-O-H	1310-58-3	<10%
WATER	H2O	7732-18-5	10-30%

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Apply calcium gluconate gel to the affected area.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
Advice to Doctor	Treat symptomatically.

First Aid Facilities Eye wash facilities and safety shower are recommended.

5. FIRE FIGHTING MEASURES

Flammability Non flammable. May evolve toxic gases/ fumes (metal oxides, borates, fluorides, boron oxides) during brazing, soldering or fluxing operations.

Fire and Explosion Treat as per requirements for Surrounding Fires: Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

Extinguishing Prevent contamination of drains or waterways.

Hazchem Code 2X

6. ACCIDENTAL RELEASE MEASURES

Spillage Use personal protective equipment. Contain spillage, then cover / absorb spill with non-combustible absorbant material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. CAUTION: Spill site may be slippery.

7. STORAGE AND HANDLING

Storage Store in a cool, dry, well ventilated area, removed from oxidising agents, acids and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Also store removed from glass.

Handling Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Stds

Ingredient	Reference	TWA		STEL	
Fluorides, as F	SWA (AUS)	--	2.5 mg/m^3	--	--
Potassium hydroxide	SWA (AUS)	--	2 mg/m^3	--	--

Biological Limits No biological limit allocated.

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE Wear brazing goggles, a leather apron, leather boots, welding or leather gloves, a welding helmet and coveralls. Fume extraction should be used wherever practicable. Where an inhalation risk exists, wear: a Class P2 (Metal fume) respirator. If using product in a confined area, wear: an Air-line respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	WHITE PASTE	**Solubility (water)**	SOLUBLE
Odour	SLIGHT ODOUR	**Specific Gravity**	1.6
pH	3.1	**% Volatiles**	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE	**Flammability**	NON FLAMMABLE
Vapour Density	NOT AVAILABLE	**Flash Point**	NOT RELEVANT
Boiling Point	485°C (After water evaporation)	**Upper Explosion Limit**	NOT RELEVANT
Melting Point	NOT AVAILABLE	**Lower Explosion Limit**	NOT RELEVANT
Evaporation Rate	NOT AVAILABLE		
Autoignition Temperature	NOT AVAILABLE	**Decomposition Temperature**	NOT AVAILABLE
Partition Coefficient	NOT AVAILABLE	**Viscosity**	NOT AVAILABLE

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to Avoid	Incompatible with oxidising agents and acids (eg. nitric acid). Also incompatible with glass.
Hazardous Decomposition Products	May evolve toxic gases if heated to decomposition.
Hazardous Reactions	Polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Corrosive - toxic. This product has the potential to cause adverse health effects. Use safe work practices to avoid eye or skin contact and inhalation. Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B). Chronic exposure to fluorides may result in discolouration of teeth; as well as lung, kidney, liver, ligament and bone (osteosclerosis, skeletal fluorosis) damage. Chronic exposure to borates may result in skin rash, bronchitis and kidney damage.

Eye Corrosive - irritant. When heated, fumes evolved may result in irritation, lacrimation and conjunctivitis.

Inhalation Slightly corrosive - irritant. Over exposure to fumes may result in irritation of the nose and throat, nausea and headache. Freshly formed metal fumes may result in metal fume fever, a flu-like illness with symptoms including; metallic or sweet taste, dry throat, coughing and tight chest. High level exposure may result in pulmonary oedema.

Skin Slightly corrosive. Contact may result in irritation, redness, pain, rash, dermatitis and possible burns. May be absorbed through skin with harmful effects.

Ingestion Toxic. Ingestion may result in a metallic taste, thirst, vomiting and ulceration. Metals may accumulate within the body with toxic effects. Ingestion is considered an unlikely exposure route.

Toxicity Data

BORIC ACID (10043-35-3)
- LCLo (Inhalation): 28 mg/m³/4 hours (rat)
- LD50 (Ingestion): 2660 mg/kg (rat)
- LD50 (Intravenous): 1240 mg/kg (mouse)
- LDLo (Ingestion): 200 mg/kg (woman)
- TDLo (Ingestion): 45 g/kg (90 days pregnant rat - reproductive effects)

POTASSIUM HYDROGEN FLUORIDE (7789-29-9)
- LD50 (Ingestion): 52 mg/kg (rat)
- LDLo (Ingestion): 71 mg/kg (human)
- LDLo (Skin): 300 mg/kg (mouse)
- TDLo (Ingestion): 214 ug/kg (human)

POTASSIUM HYDROXIDE (1310-58-3)
- LD50 (Ingestion): 273 mg/kg (rat)

12. ECOLOGICAL INFORMATION

Environment Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Reuse where possible. Alternatively, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer for additional information.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping Name	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.				
UN No.	3289	**DG Class**	6.1	**Subsidiary Risk(s)**	8
Packing Group	II	**Hazchem Code**	2X	**GTEPG**	6J6

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 6 (S6) Poison using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information

WELDING (1): Due to the diversity of welding techniques, processes, materials used, nature of the surface being welded and the presence of contaminants, the fumes & gases associated with welding will vary in composition and quantity. When assessing a welding process, the toxic fumes generated may not only be associated with the parent metal, filler wire or electrode. The welding/cutting arc may generate nitrogen oxides, carbon monoxide & other gases, whilst UV radiation emitted from some arcs generates ozone. Ozone may irritate mucous membranes and cause pulmonary oedema & haemorrhage. Shielding gases (eg. carbon dioxide and inert gases i.e. argon and helium) in high concentrations, in confined spaces, may reduce oxygen in the atmosphere to dangerous levels, resulting in possible asphyxiation.

WELDING (2): In addition to complying with individual exposure standards for specific contaminants, where current manual welding processes are used, the fume concentration inside the welder's helmet should not exceed 5 mg/m³ (unless otherwise classified) when collected in accordance with Australian Standard AS 3853.1: Fume from welding and allied processes - Guide to methods for the sampling and analysis of particulate matter and AS 3853.2: Fume from welding and allied processes - Guide to methods for the sampling and analysis of gases. Airway irritation and metal fume fever are the most common acute effects from welding fumes. Reported to cause reduced sperm quality in welders.

WELDING (3): Other gases and fumes associated with welding processes include :- Inert shielding gases (eg. argon, carbon dioxide, helium) which may reduce the atmospheric oxygen content in poorly ventilated areas. UV-radiation and Infra-Red radiation may decompose chlorinated degreasing agents to form highly toxic and irritating phosgene gas. This may occur if a metal has been degreased but inadequately dried or when vapours from a nearby degreasing bath enter the welding zone.

WELDING (4): Welding fumes may contain a wide variety of chemical contaminants, including oxides and salts of metals and other compounds which may be generated from electrodes, filler wire, flux materials and from the welded material eg. painted surfaces. Welding stainless-steel and its alloys generates nickel and chromium (VI) compounds. Welding fumes are retained in the lungs. Sparingly soluble compounds may be released slowly from the lungs. Welding fumes are classified as possibly carcinogenic to humans (IARC Group 2B).

ABBREVIATIONS:
ACGIH - American Conference of Industrial Hygienists.
ADG - Australian Dangerous Goods.
BEI - Biological Exposure Indice(s).
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EC No - European Community Number.
HSNO - Hazardous Substances and New Organisms.
IARC - International Agency for Research on Cancer.
mg/m³ - Milligrams per Cubic Metre.
NOS - Not Otherwise Specified.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
STEL - Short Term Exposure Limit.
SWA - Safe Work Australia.
TWA - Time Weighted Average.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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End of Report