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THE HARRIS PRODUCTS GROUP

## Safety Data Sheet

### 1 IDENTIFICATION

#### Product identifier

**Trade name:** L. T. Silver Brazing Flux

**Synonyms:** 360A – Product Code – 360B – Product Code – 360C – Product Code

**SDS #** Version 4

#### Recommended use and restriction on use

**Recommended use:** Brazing Flux – Welding Aid

**Restrictions on use:** No further relevant information available.

#### Manufacturer/Importer/Supplier/Distributor information

##### Importer:

Harris Products Group

14 Queensland Rd

Darra, QLD, Australia 4076

(07) 33753670

Website: <http://www.ausweld.com.au>

**Safety Data Sheet Questions:** sales@hgea.com.au

**Poisons Information Centre/Helpline (24 hours) Australia 13 11 26**

### 2 HAZARD(S) IDENTIFICATION

#### GHS classification of the substance/mixture.

Classified according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

#### Classification of the substance or mixture

The product is classified as hazardous according to the Globally Harmonized System (GHS)

**GHS Classification(s)** Toxic to Reproduction: Category 1B  
Acute Toxicity: Oral: Category 3  
Skin Corrosion/Irritation: Category 1B

#### Label elements

**Signal word** DANGER

#### Hazard pictograms



GHS05



GHS06



GHS08

**Hazard Statement(s)**

- H301** Toxic if swallowed.  
**H314** Causes severe skin burns and eye damage.  
**H360** May damage fertility or the unborn child.

**Prevention Statement(s):**

- P202** Do not handle until all safety precautions have been read and understood.  
**P260** Do not breathe dust/fume/gas/mist/vapours/spray.  
**P264** Wash thoroughly after handling.  
**P270** Do not eat, drink or smoke when using this product.  
**P280** Wear protective gloves/protective clothing/eye protection/face protection.

**Response statement(s):**

- P301 + P330 + P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
**P303 + P361 + P353** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF  
**P304 + P340** INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
**P305 + P351 + P338.** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P308 + P313.** IF exposed or concerned: Get medical advice/ attention  
**P310** Immediately call a POISON CENTER or doctor/physician  
**P321** Specific treatment is advised - see first aid instructions.  
**P363** Wash contaminated clothing before reuse.

**Storage Statement(s):** Store Locked Up

**Disposal Statement(s):** Dispose of contents/container in accordance with relevant regulations.

**Other Hazards** No information provided

**Additional information:****Other hazards which do not result in GHS classification:**

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.

**Hazard description:**

**WHMIS-symbols:** Not hazardous under WHMIS.

**Additional information:****Other hazards which do not result in GHS classification:**

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.

**3 Composition/information on ingredients****Chemical characterization: Mixtures**

**Description:** Mixture: consisting of the following components.

Sustances/Mixtures		
CAS	Ingredient	Proportion
10043-35-3	BORIC ACID	30-60%
7789-29-9	POTASSIUM HYDROGEN FLUORIDE	30-60%
1310-58-3	POTASSIUM HYDROXIDE	<10%
7732-18-5	WATER	10-30%

**Additional information:**

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

**Composition comments:**

The term "Dangerous Components" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

**4 First-aid measures****Description of first aid measures**

**General information:** No special measures required.

**Inhalation:**

If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

**Skin contact:**

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.

**Eye contact:**

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.

**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.

**Information for doctor:** Treat Symptomatically

**Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**Danger**

Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

**5 Fire-fighting measures****Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**Special hazards arising from the substance or mixture**

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

**Advice for firefighters**

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.

**Hazchem code**

**2X**

**2** Fine Water Spray

**X** Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

**Additional information**

Read and understand the Work Safe Australia Code of Practice on Welding Processes and “Standard for Fire Prevention During Welding, Cutting and Other Hot Work” before using this product. Section 274 of the Work Health and Safety Act (the WHS Act.)

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## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

### Environmental precautions:

Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.

### Methods and material for containment and cleaning up:

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Dispose contaminated material as waste according to item 13.

### Reference to other sections

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## 7 Handling and storage

### Handling:

#### Precautions for safe 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.

Read and understand the manufacturer's instruction and the precautionary label on the product. See the Australian Standard - AS 1674.1 – 1997 – Reconfirmed 2016. Safety in Welding and Allied Processes Australia.

### Conditions for safe storage, including any incompatibilities

#### Storage:

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

**Specific end use(s)** No further relevant information available.

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## 8 Exposure controls/personal protection

**Additional information about design of technical systems:** No further data; see item 7.

### Control parameters

#### Exposure Guidelines:

Refer to the Safe Environments risk management document – Welding Fume - <http://www.safeenvironments.com.au/welding-fume/> The exposure standard refers to the publication by Work Safe Australia “Workplace Exposure Standard for Airborne Contaminants” with the Date of Effect being 22 December 2011. Work Safe Australia note that “exposure standards do not represent a fine dividing line between a healthy and unhealthy work environment. Natural biological variation and the range of individual

susceptibilities mean that a small number of people might experience adverse health effects below the exposure standard.

The American Governmental Congress of Industrial Hygienists (ACGIH) however recommends a Threshold Limit Value (TLV) Time Weighted Average (TWA) of 5 mg/m<sup>3</sup> for welding fume, on the assumption that there are no highly toxic constituents.; However, in Australia, there is no specific exposure standard for welding fume This is due to the fume being a combination of the metals and filler material being molten together along with cleaning and fluxing agents present. Each metal or material within the process of welding will generally have its own exposure standard.

<b>Exposure Standards</b>					
CAS	Ingredient	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
10043-35-3	BORIC ACID		2.5		
7789-29-9	POTASSIUM HYDROGEN FLUORIDE		2		
1310-58-3	POTASSIUM HYDROXIDE		2		
<b>Biological Limits</b>					
CAS	Ingredient	Determinant		Sampling time	BEI
1310-58-3	POTASSIUM HYDROXIDE	Fluoride in urine		End of shift	3mg/L

Reference: ACGIH Biological Exposure Indices

Refer to Worksafe Australia for standards:

[http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace\\_Exposure\\_Standards\\_for\\_Airborne\\_Contaminants.pdf](http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace_Exposure_Standards_for_Airborne_Contaminants.pdf)

### Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. Personal air monitoring is generally undertaken over a representative period of time undertaken to Australian Standard AS 3640-2009 Workplace atmospheres – Method for sampling and gravimetric determination of inhalable dust using IOM sampling heads with flow rate of 2.0 L/min. Keep away from foodstuffs, beverages and feed.

**Engineering controls:** No further relevant information available.

#### Ventilation

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.

#### Breathing equipment:

Where an inhalation risk exists, wear a Class P2 (Metal fume) respirator. If using product in a confined area, wear an Air-line respirator.

#### Protection of hands:



Leather or welding gloves.

Suitable gloves can be recommended by the glove supplier.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

**Eye protection:**

Wear glasses or face shield with appropriate shading for brazing operations.  
(Continued on page 6)

**Body protection:** Protective work clothing**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information**

<b>Appearance:</b>	Paste
<b>Colour:</b>	White Paste
<b>Odour:</b>	Slight Odour
<b>Odour Threshold:</b>	Not Determined
<b>pH-value:</b>	3.1

**Change in condition**

<b>Melting point/Melting range:</b>	Not Applicable
<b>Boiling point/Boiling range:</b>	485 <sup>o</sup> C (After water evaporation)

<b>Flash point:</b>	Not Applicable
<b>Evaporation rate:</b>	Not Available
<b>Flammability (solid, gaseous):</b>	Not Determined

**Explosion Limits:**

<b>Lower:</b>	Not Determined
<b>Upper:</b>	Not Determined

<b>Vapour Pressure:</b>	Not Available
<b>Relative Density:</b>	Not Available
<b>Specific Gravity:</b>	1.6
<b>Vapour Density:</b>	Not Available

<b>Auto-Ignition:</b>	
<b>Decomposition Temp:</b>	Not Available
<b>Solubility in/Miscibility with water:</b>	Soluble

<b>Partition coefficient (n-octanol/water):</b>	Not Available
<b>Viscosity:</b>	
<b>Other Information:</b>	No further relevant information available

**10 Stability and reactivity**

**Reactivity:** Carefully review all information provided in sections 10 below

**Chemical stability:** Stable under normal temperatures and pressures and conditions of storage.

**Possibility of hazardous reactions**

Polymerization is not expected to occur.

**Conditions to avoid:** Avoid heat, sparks, open flames and other ignition sources.

**Incompatible materials:** Incompatible with oxidising agents (e.g. hypochlorite's) and acids (e.g. nitric acid). Also incompatible with glass.

**Hazardous decomposition products:** May evolve toxic gases if heated to decomposition.

Brazing fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being joined, the process, procedure and filler metals and flux used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being joined (such as paint, plating, or galvanizing), the number of operators and the volume of the worker area, the quality and amount of ventilation, the position of the operator's head with respect to the fume and fumes from chemical fluxes used in some brazing operations. When the wire or rod is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coating, etc., as noted above.

## 11 Toxicological information

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
10043-35-3	BORIC ACID	2660 mg/kg (rat)	1240 mg/kg (mouse)	
7789-29-9	POTASSIUM HYDROGEN FLUORIDE	52 mg/kg (rat)		
1310-58-3	POTASSIUM HYDROXIDE	273 mg/kg (rat)		

### Information on toxicological effects:

#### Acute toxicity:

Toxic if swallowed

#### Skin Contact:

Causes burns. Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.

#### Eye Contact:

Causes burns. Contact may result in irritation, lacrimation, pain, redness and possible burns.

#### Sensitization:

Not classified as causing skin or respiratory sensitisation.

#### Aspiration:

Not classified as causing aspiration

#### Inhalation:

Short-term (acute) overexposure to brazing fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to brazing fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

#### Mutagenicity:

Not classified as a mutagen.

#### Carcinogenicity:

Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B).

#### Reproductive:

May damage fertility or the unborn child. Animal studies have shown that exposure to high concentrations of borates may effect the developing foetus and the testes.

#### Sensitization:

No sensitizing effects known.

**STOT – single exposure:**

Over exposure to fumes may result in irritation of the nose and throat, nausea and headache.

**STOT – repeated exposure:**

Repeated exposure to fluorides may result in discolouration of teeth; as well as lung, kidney, liver, ligament and bone (osteosclerosis, skeletal fluorosis) damage. Repeated exposure to borates may result in skin rash, bronchitis and kidney damage.

**12 Ecological information**

Ingredient	Result	Species	Exposure
BORIC ACID – (10043-35-3)	Acute EC50 777 mg/L	Daphnia	48 Hours
	Acute EC50 226 mg/L	Daphnia	48 Hours
	Acute EC50 133 mg/L	Daphnia	48 Hours
	Acute EC50 777 to 932 ppm Fresh water	Daphnia – Water Flea	48 Hours
	Acute EC50 226 to 246 ppm Fresh water	Daphnia- Magna	<24 Hours
	Acute EC50 226 to 246 ppm Fresh water	Daphnia– Water Flea	48 Hours
	Acute LC50 >1100 mg/L	Daphnia- Magna	<24 Hours
	Acute LC50 92.83 to 148 mg/L Marine water	Fish Crustation	96 Hours 48 Hours
POTASSIUM HYDROGEN FLUORIDE – ( 7789-29-9)	Not Available	Not Available	Not Available
POTASSIUM HYDROXIDE – (1310-58-3)	Acute LC50 80 mg/L	Fish	96 Hours

**Ecotoxicity:** 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.

**Persistence and Degradability:** No data is available on the degradability of this product

**Bioaccumulative Potential:** No data is available on the degradability of this product

**Mobility in soil:** No data is available on the degradability of this product

**Other adverse effects:** No data is available on the degradability of this product

**13 Disposal considerations**

**Waste treatment methods**

**Recommendation:**

Reuse where possible. Alternatively, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport Information**





	LAND TRANSPORT ADG	SEA TRANSPORT IMDG/IMO	AIR TRANSPORT IATA/ICAO
UN-Number ADG, IMDG/IMO, IATA/ICAO	3289	3289	3289
UN proper shipping name ADG, IMDG/IMO, IATA/ICAO	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.
Transport hazard class(es) ADG, IMDG/IMO, IATA/ICAO	6.1,8	6.1,8	6.1,8
Packing group ADG, IMDG/IMO, IATA/ICAO	II	II	II
Environmental hazards: Marine pollutant:	No information provided		
Special precautions for user			
Additional Information			
Hazchem code.	2X		
GTEPG	6J6		
EMS	F-A, S-B		

## 15 Regulatory information

**Product Name:** L T Silver Brazing Flux

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**Poison Schedule:**

Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications:**

Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

**Hazard Codes:**

**C** Corrosive  
**Repr** Reproductive toxin  
**T** Toxic

Refer to the Australian Inventory of Chemical Substances – AICS at <https://www.nicnas.gov.au/chemicals-on-AICS#main>

**Poison schedule:** Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). <https://www.legislation.gov.au/Details/F2016L01638>

**Classifications:** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

## 16 Other information

### References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice

Standard for the Uniform Scheduling of Medicines and Poisons

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work, Australia

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

**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 (e.g. 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/m<sup>3</sup> ( 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 (e.g. 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 (e.g. 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 fume is classified as possibly carcinogenic to humans (IARC Group 2B).

### PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this 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.

**Disclaimer:**

We urge each end user and recipient of this SDS to study it carefully. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**WARNING: PRODUCT COMPONENTS PRESENT HEALTH AND SAFETY HAZARDS. READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET (M.S.DS.). ALSO, FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.**

The information contained herein relates only to the specific product. If the product is combined with other materials, all component properties must be considered. **BE SURE TO CONSULT THE LATEST VERSION OF THE MSDS. MATERIAL SAFETY DATA SHEETS ARE AVAILABLE FROM HARRIS PRODUCTS GROUP** Harris Products Group, HGE PTY LTD, Brisbane | Melbourne | Perth | New Zealand, 14 Queensland Rd, Darra, QLD 4076, Phone: (07) 3375 3670 | Fax: (07) 3375 3620, Email: sales@hgea.com.au, www.harrisproductsgroup.com.au,

**STATEMENT OF LIABILITY-DISCLAIMER**

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[ End of SDS ]