Printing date 20/01/2011 Reviewed on 01/01/2017

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:
NEW ZEALAND
Harris Products Group
47 Edmundson St, Onekawa, Napier
New Zealand 4110
(06) 83405875
Safety Data Sheet Questions: sales@harrisnz.com
Website: http://www.harrisproductsgroup.co.nz

New Zealand National Poisons Centre/Helpline (24 hours) 0800 POISON (0800 764 766)
Fire Service - Ambulance – 111

AUSTRALIA
Harris Products Group
14 Queensland Rd
Darra, QLD, Australia 4076
(07) 33753670
Safety Data Sheet Questions: sales@hgea.com.au
Website: http://www.harrisproductsgroup.com.au

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**

(Contd. on page 2)

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.

(Contd. on page 3)

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.
I**nformation 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.

(Contd. on page 4)

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.)

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.

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.

8 Exposure controls/personal protection

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

(Contd. on page 5)

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^3 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.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3
10043-35-3	BORIC ACID		2.5		
7789-29-9	POTASSIUM HYDROGEN FLUORIDE		2		
1310-58-3	POTASSIUM HYDROXIDE		2		
Biological Limits					
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

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.

(Contd. on page 6)

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

Appearance:	Paste
Colour:	White Paste
Odour:	Slight Odour
Odour Threshold:	Not Determined
pH-value:	3.1

Change in condition

Melting point/Melting range:	Not Applicable
Boiling point/Boiling range:	485^{0}C (After water evaporation)

Flash point:	Not Applicable
Evaporation rate:	Not Available
Flammability (solid, gaseous):	Not Determined

Explosion Limits:

Lower:	Not Determined
Upper:	Not Determined

Vapour Pressure:	Not Available
Relative Density:	Not Available
Specific Gravity:	1.6
Vapour Density:	Not Available
Auto-Ignition:	
Decomposition Temp:	Not Available
Solubility in/Miscibility with water:	Soluble
Partition coefficient (n-octanol/water:	Not Available
Viscosity:	
Other Information:	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.

(Contd. on page 7)

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. W hen 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:

(Contd. on page 8)

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 Acute EC50 226 mg/L Acute EC50 133 mg/L Acute EC50 777 to 932 ppm Fresh water Acute EC50 226 to 246 ppm Fresh water Acute LC50 >1100 mg/L Acute LC50 92.83 to 148 mg/L Marine water	Daphnia Daphnia Daphnia Daphnia – Water Flea Daphnia- Magna Daphnia– Water Flea Daphnia- Magna Fish Crustation	48 Hours 48 Hours 48 Hours 48 Hours <24 Hours 48 Hours <24 Hours 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

(Contd. on page 9)

	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.

(Contd. on page 10)

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 Codie of Practice

Standard for the Uniform Scheduling of Medicines and Poisons

Australian Code for the Transport of Dangerous Goods by Road & Rail.
Modell 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 (ACGIIH)

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/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 (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.

(Contd. on page 11)

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
To the best of the Harris Products Group knowledge, the information and recommendations contained in this publication are reliable and accurate as of the date prepared. However, accuracy, suitability, or completeness are not guaranteed, and no warranty, guarantee, or representation, expressed or implied, is made by Harris Products Group. as to the absolute correctness or sufficiency of any representation contained in this and other publications; Harris Products Group assumes no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this and other publications, or that other or additional measures may not be required under particular or exceptional conditions or circumstances. Data may be changed from time to time.

[End of SDS]