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## Safety Data Sheet

**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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### 1 IDENTIFICATION

#### Product identifier

**Trade name:** Al-Braze 1070 and Al- Flux

**Product size:** Variable

#### Other means of identification

**SDS Number:** 0133

#### Recommended use and restriction on use

**Recommended use:** Metal Brazing

**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

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

**Arc Welding Safety Information:** [www.lincolnelectric.com/safety](http://www.lincolnelectric.com/safety)

#### 24-Hour Emergency Response Telephone Numbers:

000 - Australia

111 - New Zealand

**3E Company Access Code:** 333895

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### 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



**GHSO 8 Health Hazard**

(Contd. on page 2)

STOT RE 1 H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.



GHS05 Corrosion  
Eye Dam. 1 H318 Causes serious eye damage.



GHS07  
Acute Tox. 4 H302 Harmful if swallowed.  
Skin Irrit. 2 H315 Causes skin irritation

Lact. H362 May cause harm to breast-fed children.

#### Additional information:

0 percent of the mixture consists of ingredient(s) of unknown toxicity.

There are no other hazards not otherwise classified that have been identified.

#### Label elements

##### GHS label elements

The product is classified and labelled according to the Globally Harmonized System (GHS)

##### Hazard pictograms



GHS08



GHS05



GHS07

**Signal word** Danger

#### Hazard-determining components of labelling:

lithium chloride

potassium fluoride

zinc chloride

aluminum potassium fluoride

lithium fluoride

zinc fluoride

sodium fluoride

zinc oxide

#### Hazard statements

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H362 May cause harm to breast-fed children.

H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

#### Precautionary statements

P201 Obtain special instructions before use.

P263 Avoid contact during pregnancy/while nursing.

P260 Do not breathe dust.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection.

P2701 Do not eat, drink or smoke when using this product.

P305 & P351 & P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302 & P352 IF ON SKIN: Wash with plenty of water.

P330	Rinse mouth.
P308 & P313	IF exposed or concerned: Get medical advice/attention.
P362 & P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

**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.

<b>Dangerous components:</b>		
<b>CAS</b>	<b>Name</b>	<b>Proportion</b>
7447-41-8	lithium chloride	10-30%
7783-49-5	zinc fluoride	1-5%
60304-36-1	aluminum potassium fluoride	1-5%
7789-23-3	potassium fluoride	1-5%
13775-52-5	tripotassium hexafluoroaluminate	1-5%
7646-85-7	zinc chloride	1-5%
7789-24-4	lithium fluoride	1-5%
13775-53-6	trisodium hexafluoroaluminate	<1.0%
7681-49-4	sodium fluoride	<1.0%
1314-13-2	zinc oxide	<1.0%

**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.

**After inhalation:**

Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.

**After skin contact:**

Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.

**After eye contact:**

Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed.

Obtain medical assistance at once.

**After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

**Information for doctor:****Most important symptoms and effects, both acute and delayed**

Gastric or intestinal disorders when ingested.

Breathing difficulty

Coughing

**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.

**Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

**5 Fire-fighting measures****Extinguishing media****Suitable extinguishing agents:**

As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.

For metal fires: Use specific agents only.

**For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.

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

Infrared radiation from flame or hot metal can ignite combustibles and flammable products.

**Advice for firefighters****Special fire fighting procedures:**

Use standard firefighting procedures and consider the hazards of other involved materials.

**Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

**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.

Damp down dust with water spray.

Prevent further leakage or spillage if safe to do so.

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

Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources. (Continued on Page 4)

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.  
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**

Avoid breathing dust.  
Ensure good ventilation/exhaustion at the workplace.  
Any deposit of dust which cannot be avoided must be regularly removed.  
Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at [www.lincolnelectric.com/safety](http://www.lincolnelectric.com/safety). See the Australian Standard - AS 1674.1 – 1997 – Reconfirmed 2016. Safety in Welding and Allied Processes Australia.

**Information about protection against explosions and fires:** No special measures required.

#### **Conditions for safe storage, including any incompatibilities**

##### **Storage:**

##### **Requirements to be met by storerooms and receptacles:**

Store in closed original container in a dry place. Store away from incompatible materials. Store in accordance with local/regional/national regulations.

**Information about storage in one common storage facility:** No special requirements.

**Further information about storage conditions:** No special requirements.

**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. (Continued on Page 5).

(Contd. on page 6)

**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**

Use enough ventilation, local exhaust at the the flame or heat source, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the operator to keep his head out of the fumes. Keep exposure as low as possible.

**Breathing equipment:**

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits. Particulate mask should filter at least 99% of airborne particles.

**Protection of hands:**

Thermally-protective 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

**Limitation and supervision of exposure into the environment** No special requirements.

**Risk management measures** No special requirements.

**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

<b>Form:</b>	Powder
<b>Colour:</b>	Silver-coloured
<b>Odour:</b>	Nearly Odourless

<b>Odour Threshold:</b>	Not Determined
<b>pH-value:</b>	Not applicable
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	515 - 630 °C (959 - 1166 °F)
<b>Boiling point/Boiling range:</b>	Undetermined
<b>Flash point:</b>	Not Applicable
<b>Flammability (solid, gaseous):</b>	Not Determined
<b>Auto-ignition temperature:</b>	Not Determined
<b>Decomposition temperature:</b>	Not Determined
<b>Auto igniting:</b>	Product is not self-igniting
<b>Danger of explosion:</b>	Product does not present and explosion hazard
<b>Explosion Limits:</b>	
<b>Lower:</b>	Not Determined
<b>Upper:</b>	Not Determined
<b>Vapour Pressure:</b>	Not Applicable
<b>Density:</b>	1200 kg/m <sup>3</sup>
<b>Relative Density:</b>	Not Determined
<b>Vapour Density:</b>	Not Applicable
<b>Evaporation Rate:</b>	Not Applicable
<b>Solubility in/Miscibility with water:</b>	Partly soluble
<b>Partition coefficient (n-octanol/water):</b>	Not Determined
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable
<b>Kinematic:</b>	Not applicable
<b>Other Information:</b>	No further relevant information available

## 10 Stability and reactivity

**Reactivity:** The product is non-reactive under normal conditions of use, storage and transport.

**Chemical stability:** Stable under normal temperatures and pressures.

**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**Possibility of hazardous reactions**

Reacts with strong acids and alkali.

Reacts with strong oxidizing agents.

As the product is supplied it is not capable of dust explosion; however, enrichment with fine dust causes risk of dust explosion.

**Conditions to avoid:** Avoid heat or contamination.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:**

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.

## 11 Toxicological information

### Information on likely routes of exposure

#### Ingestion:

Unlikely route of exposure.

#### Inhalation:

Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure.

**Skin Contact:** Heat rays can burn skin.

**Eye Contact:** Heat rays (infrared radiation from flame) or hot metal can injure eyes.

### Information on toxicological effects

#### 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.

#### Acute toxicity:

##### LD/LC50 values that are relevant for classification:

##### **7447-41-8 lithium chloride**

Oral LD50 526 mg/kg (rat)

##### **7789-23-3 potassium fluoride**

Oral LD50 245 mg/kg (rat)

##### **646-85-7 zinc chloride**

Oral LD50 350 mg/kg (rat)

##### **7681-49-4 sodium fluoride**

Oral LD50 52 mg/kg (rat)

##### **1314-13-2 zinc oxide**

Oral LD50 >5000 mg/kg (rat)

#### Primary irritant effect:

**On the skin:** Irritant to skin and mucous membranes.

**On the eye:** Strong irritant with the danger of severe eye injury.

**In the respiratory system:** No irritating effect.

**Sensitization:** Based on available data, the classification criteria are not met.

#### Additional toxicological information:

Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition by products may result in a condition known as polymer fume fever. (Continued on page 8) Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

**NTP (National Toxicology Program)**

None of the ingredients is listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**Other information relevant to carcinogenicity**

Cancerous lesions have been reported in persons exposed to arc rays.

**Acute effects (acute toxicity, irritation and corrosivity):**

Harmful if swallowed.

Causes serious eye damage.

Irritating to skin.

**Repeated Dose Toxicity:** Danger of very serious irreversible effects.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

Lact.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** May cause harm to breast-fed children.

**STOT-single exposure** Based on available data, the classification criteria are not met.

**STOT-repeated exposure** Causes damage to the respiratory system through prolonged or repeated exposure.

Route of exposure: Inhalation.

**Aspiration hazard** Based on available data, the classification criteria are not met.

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## **12 Ecological information**

**Persistence and degradability**

No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:**

**General notes:**

Negative ecological effects are, according to the current state of knowledge, not expected.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment:**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

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## 13 Disposal considerations

### Waste treatment methods

#### Recommendation:

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

#### Uncleaned packagings:

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

## 14 Transport Information

UN-Number DOT, ADR, ADN, IMDG, IATA	Not Regulated
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Not Regulated
Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class	Not Regulated
Packing group DOT, ADR, IMDG, IATA	Not Regulated
Environmental hazards: Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Not regulated.

## 15 Regulatory information

### Product Name: **600 Powder Flux**

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.  
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 (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.

[ End of SDS ]