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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: **Alloy 26**

Product size: Variable

Other means of identification

SDS Number: 02

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

24-Hour Emergency Response Telephone Numbers:

000 - Australia

111 - New Zealand

3E Company Access Code: 333895

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.

Additional information:

Other hazards which do not result in GHS classification:

(Contd. on page 2)

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.

| Dangerous components: | | |
|-----------------------|--------------------|------------|
| CAS | Name | Proportion |
| 7429-90-5 | aluminium | 70-80% |
| 7440-03-1 | silicon | 1-11% |
| 7784-18-1 | aluminium fluoride | 1-11% |
| 1789-24-4 | lithium fluoride | 1-11% |
| 7783-40-6 | magnesium fluoride | 1-11% |
| 7447-40-7 | potassium chloride | 1-11% |
| 1789-23-3 | potassium fluoride | 2-12% |
| 7647-14-5 | sodium chloride | 1-11% |

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 Health Hazard Data

Routes of Entry

Inhalation, skin and ingestion

Health Hazards

Electric arc-welding may create: fumes and gases can be dangerous. Arc rays can injure eyes and burn skin. Electric shock can kill.

Carcinogenicity

The ACGIH recommended general limit for welding fume NOC is 5 mg/m³. ACGIH 1984- 85 preface states: the TIV-twa should be used as guides in control of health hazards & should not be used as firm lines between safe and dangerous.

Signs & symptoms of exposure

See section v for specific fume constituents which may modify this tl_v.

Medical conditions from exposure

Short term to welding fumes-dizziness, nausea, dryness & irritation of nose, eyes throat, chest tightness, fever, allergic reaction. Long term- siderosis, believed to affect pulmonary function.

Emergency & first aid

Call for medical aid. Employ first aid techniques recommended by the Australian red cross

Additional Information N/A

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

See Below

Special Procedures

See Below

Unusual Hazards

Welding arc and sparks can ignite combustibles and flammables.

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

Spill and leak procedures N/A

Waste and disposal method

Prevent waste from contaminating surrounding environment. Discard any product residue, disposable container or liner in environmentally acceptable manner, in full compliance with federal, state, and local regulations.

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

Avoid breathing dust.

Ensure exhaust system 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. 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.

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/m³ 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.

| | | |
|-----------|-----------|--------------------------|
| 7429-90-5 | aluminium | TWA 10 mg/m ³ |
| 7440-03-1 | silicon | TWA 10 mg/m ³ |

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:

Respiratory Measures

Use respirable fume respiratory or air supplied respirator when in confined space or local exhaust does not keep exposure below recommended exposure limit

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 helmet, glasses or face shield with filter lens protective screens, flash goggles to shield others. Start with shade too dark then go to lighter shade which gives sufficient view of weld zone.



Protection: Protective work clothing

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

Risk management measures For maximum safety: Be certified for and wear a respirator at all times when welding and brazing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|-------------------------|------------------|
| Form: | Coated Metal Rod |
| Colour: | Silver-coloured |
| Odour: | Odourless |
| Odour Threshold: | Not Determined |
| pH-value: | Not applicable |

Change in condition

| | |
|-------------------------------------|----------------|
| Melting point/Melting range: | Not Applicable |
| Boiling point/Boiling range: | Not Applicable |

| | |
|---------------------------------------|---|
| Flash point: | Not Applicable |
| Flammability (solid, gaseous): | Not Determined |
| Auto-ignition temperature: | Not Determined |
| Decomposition temperature: | Not Determined |
| Auto igniting: | Product is not self-igniting |
| Danger of explosion: | Product does not present and explosion hazard |

Explosion Limits:

| | |
|---------------|----------------|
| Lower: | Not Determined |
| Upper: | Not Determined |

| | |
|--------------------------|----------------|
| Vapour Pressure: | Not Applicable |
| Vapour Density: | Not Applicable |
| Evaporation Rate: | Not Applicable |

Solubility in/Miscibility with water: Partly soluble

Partition coefficient (n-octanol/water): Not Determined

Viscosity:

Dynamic: Not applicable

Kinematic: Not applicable

Other Information: No further relevant information available

10 Stability and reactivity

Reactivity: the composition and quality of welding fumes and gases are dependent upon the

metal being welded, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of fumes and gases to which workers may be exposed include: coatings on metal being welded (such as paint, plating, or galvanizing), the number of welders and volume of the work area, the quality and amount of ventilation, the position of welder's head with respect to fume plume, and the presence of contaminants in atmosphere (chlorinated hydro-carbon vapors from cleaning and degreasing activities). When electrode is consumed, the fume and gas decomposition products generated are different in percent and form from ingredients in section 2. Fume and gas decomposition products, and not ingredients in electrode, are important. Concentration of given fume or gas component may decrease or increase by many times original concentration. New compounds in electrode may form. Decomposition products of normal operation include those originating from volatilization, reaction, or oxidation of materials in section 2, plus those from base metal and coating, etc., as noted above. Reasonably expected fume constituents of product could include primarily oxides of iron; secondarily oxides of chromium, nickel, manganese, silicon, and molybdenum. Present OSHA EXP. LIMITS FOR HEXAVALENT-CHROMIUM IS .05 mg/m³ and nickel 1mg/m³ which will result in significant reduction from 5mg/m³ general fume level. Gaseous reaction in products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from arc, in addition to shielding gases like argon and helium when employed. One recommended way to determine composition and quantity of fumes and gases is to take air sample from inside welder's helmet if worn or in breathing zone. See AWS Fl.1 and AWS Fl.2 -1985, available from the American Welding Society. See AWS publication: "Fumes and gases in the welding environment".

Chemical stability: Stable under normal temperatures and pressures.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Conditions to avoid: None unless otherwise specified.

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.

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.

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.

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.**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/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.

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]