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Safety Data Sheet

1 IDENTIFICATION

Product identifier

Trade name: Cor-Al

Other means of identification: Flux Cored Aluminium Alloy

SDS # 3

Recommended use and restriction on use

Recommended use: Welding

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

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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 not classified as hazardous according to the Globally Harmonized System (GHS).

Additional information:

EMERGENCY OVERVIEW. These products consist of odourless, solid rods, which have a metallic lustre. There are no immediate health hazards associated with these products. These products are not reactive. If involved in a fire, these products may generate irritating aluminium fumes and a variety of metal oxides. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (burning, melting, welding, swing, brazing, grinding and machining) may be hazardous to your health. Dusts may also be irritating to the unprotected skin or eyes.

The classification given below pertains to the product during processing:

GHS Classification(s) Respiratory Sensitisation - 1
 Skin Sensitisation - 1

Eye Irritation – 2B
 Aquatic Chronic - 3
 Specific Organ Toxicity – Repeated Exposure 1

Label elements



Signal word **DANGER**

Hazard Statements:

H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H351 – Suspected of causing cancer

H361 – Suspected of damaging fertility or the unborn child

H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements:

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P260 - Do not breathe dust/fume/gas/mist/vapours/spray P261 - Avoid breathing dust/fume/gas/mist/vapours/spray

P264 - Wash thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P272 - Contaminated work clothing should not be allowed in the workplace

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell

P302+P352 - IF ON SKIN: Wash with plenty of soap and water

P308+P313 - IF exposed or concerned: Get medical advice/attention

P314 - Get medical advice and attention if you feel unwell P321 - Specific treatment (see label)

P330 - If swallowed, rinse mouth

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

P362+P364 - Take off contaminated clothing and wash it before reuse

Storage Statement(s):

P405 - Store locked up

Disposal Statement(s):

P501 - Dispose of contents/container in accordance with regulations

Unknown Acute Toxicity Not available

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.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture: consisting of the following components.

Sustances/Mixtures		
CAS	Ingredient	Proportion
7440-21-3	Silicon	6.0 Max
7439-89-6	Iron	1.0 Max
7440-50-8	Copper	0.5 Max
7439-96-5	Manganese	1.0 Max
743995-95-4	Magnesium	6.0 Max

7440-66-6	Zinc	0.5 Max
7440-32-6	Titanium	0.5 Max
7429-90-5	Aluminium	94 Max
13826-83-0	Ammonium Fluoroborate	4 Max
111-41-1	Aminoethylethaneanolamine	4 Max
102-71-6	Triethananoamine	4 Max
7440-31-5	Tin	1 Max
N/A	Total Fluoride as F	3 Max
N/A	Total Boron as B2O3	3 Max

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: Symptoms of poisoning may occur after several hours; therefore medical observation is advised for at least 48 hours after the accident.

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:

Do NOT rub eyes. 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

Amorphous or crystalline silicon both react exothermically when heated with alkali-metal carbonates attaining incandescence and evolving carbon monoxide. Mixtures of silicon, aluminium, and lead explode when heated. If incinerated, product will release the following toxic fumes: Oxides of aluminium, chromium, copper, iron, manganese, magnesium, nickel, silicon, beryllium, titanium, zirconium and zinc.

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.

Unusual Fire and Explosion Hazards: When involved in a fire, these products may generate irritating fumes and a variety of metal compounds. The molten material can present a significant thermal hazard to firefighters.

Additional information

These items are not reactive, flammable, or explosive and essentially not hazardous at ambient temperatures. Welding arcs and sparks can ignite combustibles and flammable products. If involved in a fire, these products may generate irritating aluminium fumes and a variety of metal oxides. Emergency responders must wear personal protection equipment suitable for the situation. Use the extinguishing media recommended for the burning materials and fire situation.

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**

Ensure adequate ventilation.

Wear protective equipment.

Keep unprotected persons away.

Avoid contact with skin, eyes and clothing.

Refer to recommendations in Section 8.

Environmental precautions:

Avoid release to the environment.

Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Pick up mechanically.

Dispose contaminated material as waste according to section 13.

Dispose of the collected material according to 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**

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 away from strong acids, strong bases, strong oxidizing agents and strong reducing agents.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed.

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.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³
7440-21-3	Silicon		10		
7439-89-6	Iron		Not Established		
7440-50-8	Copper Dust		1		
7440-50-8	Copper Fume		0.2		
7439-96-5	Manganese		1 Dust		3 Fume
743995-95-4	Magnesium		10		
7440-66-6	Zinc Fume		5		10
7440-32-6	Titanium		Not Established		
7429-90-5	Aluminium		10 Powders 5 Fumes		
13826-83-0	Ammonium Fluoroborate		2.5		
111-41-1	Aminoethylethaneanolamine		4.3		
102-71-6	Triethananoamine		5		
7440-31-5	Tin		2		
N/A	Total Fluoride as F		2.5		
N/A	Total Boron as B203		10		

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.

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:	Solid Wire/Rod
Colour:	Silver/grey wire covered by various coloured fluxes
Odour:	Odourless until used
Odour Threshold:	Not Determined
pH-value:	Not Applicable

Change in condition

Melting point/Melting range:	Not Determined
Boiling point/Boiling range:	Not Determined

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

Explosion Limits:

Lower:	Not Determined
Upper:	Not Determined
Vapour Pressure:	Not Determined
Relative Density:	Not Determined
Specific Gravity:	Not Available
Vapour Density:	Not Available
Auto-Ignition:	
Decomposition Temp:	Not Available
Solubility in/Miscibility with water:	Not Soluble
Partition coefficient (n-octanol/water):	Not Determined
Viscosity:	
Other Information:	No further relevant information available

10 Stability and reactivity

Reactivity: Stable under normal conditions.

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

Possibility of hazardous reactions: Contact with acids or strong bases may cause generation of gas.

Conditions to avoid: No further relevant information available.

Incompatible materials: Strong acids, strong bases, strong oxidizing agents and strong reducing agents.

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. 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
7440-21-3	Silicon	3160 gm/kg Rat		
7439-89-6	Iron	30gm/kg Rat		
7440-50-8	Copper		3.5gm/kg Mouse	
7439-96-5	Manganese	9000gm/kg Rat		
743995-95-4	Magnesium	Not Established		
7440-66-6	Zinc	>5000 mg/kg Mouse		
7440-32-6	Titanium	Not Established		
7429-90-5	Aluminium	>2000mg/kg Rat		888 mg/L Rat
13826-83-0	Ammonium Fluoroborate	Not Established		
111-41-1	Aminoethylethaneanolamine	3gm/kg Rat	2mg/kg Rat	
102-71-6	Triethananoamine	4.92mL/kg Rat	1450mg/kg Mouse	

7440-31-5	Tin	Not Established		
N/A	Total Fluoride as F	Not Established		
N/A	Total Boron as B2O3	Not Established		

Information on toxicological effects:**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.

Additional toxicological information:**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

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

CAS	Ingredient	Result	Species	Exposure
7440-21-3	Silicon	N/A		
7439-89-6	Iron	N/A		
7440-50-8	Copper	58 mg/L	Fish	96 Hours
7439-96-5	Manganese	>3.6mg/L	Fish	96 Hours
743995-95-4	Magnesium	N/A		
7440-66-6	Zinc	0.00272mg/L	Fish	96 Hours
7440-32-6	Titanium	N/A		
7429-90-5	Aluminium	2.6 mg/L	Daphnia Magna	24 hour
13826-83-0	Ammonium Fluoroborate	>6 mg/L	Fish	4 Days
111-41-1	Aminoethylethaneanolamine	N/A		
102-71-6	Triethananoamine	N/A		
7440-31-5	Tin	N/A		
N/A	Total Fluoride as F	N/A		
N/A	Total Boron as B2O3	N/A		

Persistence and degradability

No further relevant information available.

Behaviour in environmental systems:**Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Additional ecological information:****General notes:**

Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms.

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:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Observe all federal, state and local environmental regulations when disposing of this material.

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:** Cor AI**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)].

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.

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]