MATERIAL SAFETY DATA SHEET
M3 (AS2239) Magnesium
Issue Date: 02SEP24

Company Details: Head Office
8 Endeavour Drive
Kunda Park, Queensland
Australia, 4556
07 5476 9788

Email: sales@cathodicanodes.com.au
Web: www.cathodicanodes.com.au

PHYSICAL DATA

Alloy composition: (Australian Standard AS2239 Galvanic Sacrificial Anodes for Cathodic Protection)

Ingredient	C.A.S. Number	Proportion (%)
Magnesium (Mg)	7439-95-4	Balance
Aluminium (Al)	7429-90-5	5.3 – 6.7
Zinc (Zn)	7440-66-6	2.5 – 3.5
Manganese (Mn)	7439-96-5	0.25 – 0.40
Copper (cu)	7440-50-8	0.0 – 0.05
Iron (Fe)	7439-89-6	0.0 - 0.03
Nickel (Ni)	7440-02-0	0.0 - 0.003

Solubility in water:	Insoluble in water
Melting Point:	468 ° C
Specific Gravity:	1.95 cm/g
Appearance:	Metallic Lustre Grey
Odor:	None
Form:	Solid
Vapor Pressure:	2 mm Hg @ 699 ° C
Vapor Density (Air = 1):	> 0.8
Flammability Limits:	Not applicable
Dangerous Goods Class:	4.1
UN Number:	1869
pH:	Not applicable
Hazchem Code:	4[Y]
Packing Group:	III
Recommended Uses:	Anode

Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.

First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie or belt. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie or belt.

Serious Ingestion: Not available.

Safe Handling

Work Area: Extraction fans should be employed in the work area to stop any build up of dust and fumes.

When Molten: Ensure that ingots are pre-heated prior to use in the furnace to eliminate moisture which may cause a steam explosion.

Respiratory Protection: When casting molten alloy, use appropriate approved respirators, as per AS 1716.

Eye Protection: General use industrial safety glasses, goggles or face shield.

Other Equipment: Safety Boots and fire retardant apron.

Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, incompatible materials, water or moisture, moist air.

Incompatibility with various substances: Reactive with moisture, oxides, chlorides, nitrates, peroxides, cyanides and phosphates.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Violent chemical reaction with oxidizing agents.

Reacts with water to create hydrogen gas and heat. Must be kept dry.

Reacts with acids to form hydrogen gas which is highly flammable and explosive.

Magnesium forms hazardous or explosive mixtures with aluminium and potassium perchlorate; ammonium nitrate; barium nitrate, barium dioxide and zinc; beryllium oxide; boron phosphodiiodide; bromobenzyl trifluoride; cadmium cyanide; cadmium oxide; calcium carbide; carbonates; carbon tetrachloride; chlorine; chlorine trifluoride; chloroform; cobalt cyanide; copper cyanide; copper sulfate(anhydrous), ammonium nitrate, potassium chlorate and water; cupric oxide; cupric sulfate; fluorine; gold cyanide; hydrogen and calcium carbonate; hydrogen iodide; hydrogen peroxide; iodine; lead cyanide; mercuric oxide; mercury cyanide; methyl chloride; molybdenum trioxide; nickel cyanide; nitric acid; nitrogen dioxide; oxygen (liquid); performic acid; phosphates; potassium chlorate; potassium perchlorate; silver nitrate; silver oxide; sodium perchlorate; sodium peroxide; sodium peroxide and carbon dioxide; stannic oxide; sulfates; trichloroethylene; zinc cyanide; zinc oxide.

Fire and Explosion Data

Flammability of the Product: Flammable. Oxidation may be self sustaining above 550^{o}C

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:

Highly flammable in presence of open flames and sparks, of heat.

Flammable in presence of acids, of moisture.

Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
Explosive in presence of acids, of moisture.
Fire Fighting Media and Instructions:
Flammable solid.
Caution: DO NOT use water or ordinary extinguishers. DO use dry materials such as DRY sand, powdered talc, G-1 powder. These materials should be shovelled onto the fire until it is completely blanketed.
Special Remarks on Fire Hazards:
Magnesium turnings, chips or granules, ribbons, are flammable. They can be easily ignited. They may reignite after fire is extinguished. Produces flammable gases on contact with water and acid. May ignite on contact with water or moist air.
Magnesium fires do not flare up violently unless moisture is present.
Special Remarks on Explosion Hazards: Reacts with acids and water to form hydrogen gas which is highly flammable and explosive. In case of large fire hazard Evacuate area. Fire fighters should wear full body protective heat resistant clothing with breathing apparatus.

Spill and Disposal Information
Molten Alloy: Avoid breathing dust and fume, wear suitable respirator and clothing (as described above). Allow spill to solidify and cool. Take care not to introduce water under molten metal as this may result in explosions. If necessary dam the spill area to prevent molten metal spilling into drains. Return spilled metal to manufacturer for recycling or hold for re-melting.
Dust and Powder: Magnesium in the form of dust or powder should be swept up dry and must be stored in specifically labelled containers. No other materials shall be stored with it and it shall be kept dry.
Disposal: Professional disposal should be sought unless the material is to be reused as a furnace additive. Material should be disposed of in accordance with state and federal legislation.

Storage and Transport
Store magnesium ingots and anodes in a cool dry area free of ignition sources. Magnesium powder or dust should be stored in sealed drums within a fire resistant storage room, separated from other material. Magnesium ingots are not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road and rail.

Contact Information
For further information contact Cathodic Anodes 07 5476 9788

Note: The information given above is based upon the most recent data available to us and is reproduced in good faith as being both authoritative and valid. The information given should be used to help identify potential problem areas in compatibility, storage, handling and usage. It is not possible to cover every eventuality and users are urged to carry out their own tests under their own conditions wherever possible.

This data is not intended to relieve any user of the material described from taking all precautions reasonably required in connection with the use of the material and complying with all relevant requirements.

The use of this material in particular situations may involve matters beyond the scope of this data sheet and users should in all cases use appropriately skilled persons to advise upon and carry out each particular application or use of the product.