SAFETY DATA SHEET
SDS Aluminium Mig Wire and Tig Rods_V1.1_171024

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product Name: Elite Mig Wire and Tig Rods – Non Ferrous Metals –ER5356, ER5183
Part Numbers: VW84101207, VW84101207, VW84110005, VW84112005, VW84501207, VR89116102, VR89124102, VR89132102

1.2 Other means of identification

GMAW (MIG) Gas metal arc welding
GTAW (TIG) Gas tungsten arc welding (Filler rods)

1.3 Recommended use of the chemical and restrictions on use

ARC Welding, Welding applications

1.4 Details of the supplier of the product

Supplier name:	Euromarc Industries
Address:	203 Glover Road, Hawera, NZ 4610
Phone:	0800 278 600
Email:	sales@euromarc.co.nz
Web Site:	www.euromarc.co.nz

1.5 Emergency phone number

Emergency Phone: 0800 POISON (0800 764 766)

2. HAZARD IDENTIFICATION

2.1 Classification of the hazardous chemical

Hazardous according to the NZ Environmental Protection Authority Criteria
Physical Hazards
Not classified as a Physical Hazard
Health Hazards
Specific Target Organ Toxicity (Repeated Exposure): Category 2
Environmental Hazards
Aquatic Toxicity (Acute): Category 3

2.2 Label elements, including precautionary statements

Signal Word: **WARNING**
Symbols:

Hazards Statements:
H373 may cause damage to organs through prolonged or repeated exposure.
H402 Harmful to aquatic life

Precautionary Statements:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.

Response Statement:
P314 Get medical advice/attention if you feel unwell.

Storage Statements: None allocated.

Disposal Statements:
P501 dispose of contents/container in accordance with relevant regulations

2.3 Other hazards which do not result in classification

General: When this product is used in a welding process, there are a number of potential hazards. Please read and understand this Safety Data Sheet, the manufacturer's instructions. Welding arc and sparks can ignite combustibles and flammable materials.
Electric Shock: Electrical shock can kill.
Radiation: UV, IR Radiation. Arc rays can injure eyes and burn skin.
Fumes: Formation of dangerous fumes during use. Inhalation of welding fumes may cause respiratory irritation, cough. Excessive or prolonged inhalation of fumes may cause metal fume fever.
Heat: Spatter, slag, melting metal, hot welds, arc rays and sparks can cause burn injuries to skin or damage to eyes and can also ignite combustibles and flammable materials.
Noise: Noises generated by welding equipment may damage the auditory system.
Magnetic fields: Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device.

3. COMPOSITION / IDENTIFICATION OF INGREDIENTS

COMPONENT Alloy Elements	CAS N°	FORM	% WEIGHT
Aluminum (Al)	7429-90-5	Total dust, fume Breathable	80.0 99.9
Beryllium (Be)	7440-41-7	All compounds as Be	0.00 0.0003
Copper (Cu)	7440-50-8	fume Dust / mist	0.00 0.50
Iron (Fe)	1309-37-1	Oxide dust & fume (as Fe)	0.00 1.00
Lead (Pb) (non volatile)	7439-92-1	Elementary and inorganic compounds	0.00 0.05
Magnesium(Mg)	7439-95-4	Oxide fume	0.00 6.00
Manganese(Mn)	7439-96-5	Dust fume	0.00 2.00
Nickel (Ni)	7440-02-0	Metal & insoluble compounds Soluble compounds	0.00 0.05
Silicon (Si)	7440-02-0	Total dust Breathable	0.00 14.0
Titanium (Ti)	13463-67-7	Oxide dust	0.00 0.50
Vanadium (V)	7440-62-2	Breathable dust Breathable fume	0.00 0.50
Zinc (Zn)	1314-13-2	Oxide fume Total oxide dust Breathable oxide dust	0.00 0.50

Chromium (Cr)	7440-47-3	Metals Cr II compounds Cr III compounds Cr VI compounds (water soluble) Cr VI compounds	0.00 0.50

Note: The above listing is a summary of elements used in alloying aluminum. Various grades of aluminum will contain different combinations of these elements. Trace elements may also be present in minute amounts.

4. FIRST AID MEASURES

4.1 Description of necessary first aid measures

Inhalation: Remove person to fresh air, keep comfortable for breathing, and get medical advice/attention. If breathing has stopped, perform artificial respiration, and get immediate medical advice/attention.

Skin contact: Take off contaminated clothing, and rinse skin with soap and water [or shower]. If skin irritation occurs, get medical advice/attention. For reddened or blistered skin, or thermal burns, get medical advice/attention.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses (if present and easy to do). Continue rinsing. Get medical advice/attention.

Arc rays can injure eyes. If exposed to arc rays, move victim to dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. If symptoms persist, get medical advice/attention.

Electric shock: Disconnect and turn off power. If the victim is semi or unconscious, open the airway. If the victim cannot breathe, give artificial respiration. If there is no pulse, apply CPR

Ingestion: Unlikely due to form of product, except for granular materials. If ingested, Rinse mouth. Do NOT induce vomiting. Immediately contact the nearest poisons information centre 0800 POISON (0800 764 766)

4.2 Symptoms caused by exposure

Over exposure to metal fumes may result in metal fume fever. Symptoms resemble influenza, and usually occur several hours after exposure and include a metallic or sweet taste, chills, thirst, fever, muscle aches, chest soreness, fatigue, gastro-intestinal pain, headache, nausea and vomiting. The symptoms usually subside within one to three days of exposure with no residual effect.

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

4.3 Medical Attention and Special Treatment

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguisher agent suitable for the surrounding fire

Class D dry powder or dry sand. Do not use water or halogenated extinguish agents

5.2 Specific hazards arising from the chemical

Non-flammable. May evolve toxic gases (metal oxides) during welding or when heated to decomposition.

5.3 Advice for fire fighters

No fire or explosion hazard exists, use standard fire fighting procedures, and consider the hazards of other involved materials

6. ACCIDENTAL RELEASE MEASURES

Unlikely due to product form
Welding fumes and slags maybe released on use of this product

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions
Prevent product from entering drains, sewers and waterways.

6.3 Methods of cleaning up
If spilt, collect and reuse where possible.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read and understand the manufactures instruction. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Keep formation of airborne dust and fumes to a minimum. Provide appropriate exhaust ventilation at places were dust and fumes are formed.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated area, removed from incompatible substances like acids, which could cause chemical reactions. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Aluminium metal and insoluble aluminium compounds (including pyro powder, aluminium oxide, and aluminium welding fumes), as Al	WES(NZ)	--	1(r)	--	--
Copper and its inorganic compounds, as Cu	WES(NZ)	--	0.01(r)		
Copper, dusts & mists (as Cu)	SWA(Aus)	--	1	--	--
Iron salts, soluble, as Fe	WES(NZ)	--	5	--	--
Lead	WES(NZ)		0.05		
Manganese, fume dust & compounds (as Mn)	WES(NZ)	--	0.2	--	--
Magnesium, Oxide (as Mg)	WES(NZ)		10		
Silicon	WES(NZ)	--	10	--	--
Titanium dioxide (dust)	WES(NZ)		10		
Beryllium – all compounds as Be	WES(NZ)		0.0002		
Chromium metal	WES(NZ)		0.5		
Nickel	WES(NZ		0.02; 0.005(r)		
Zinc oxide – Fume Dust	WES(NZ		10 5		 10

Biological limits
No biological limit values have been entered for this product.

8.2 Exposure controls
Engineering controls Avoid inhalation. Use in well-ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust / fume levels below the recommended

exposure standard.

8.3 Personal protective equipment (PPE)

Eye / Face Wear a welding helmet.
Hands Wear leather or welding gloves.
Body Wear coveralls and a leather apron / leather jacket and leather safety boots.
Respiratory Where an inhalation risk exists, wear a Class P2 (Metal fume) respirator. If using product in a confined area, wear an Air-line respirator.

SPECIAL PRECAUTIONS: The presence of airborne beryllium has been detected during the welding of aluminium alloys with beryllium content at only 0.0002% by weight
Welding or cutting operations involving beryllium -containing base or filler metals, shall be done using local exhaust ventilation or airline respirators.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Solid, Silvery, White with metallic lustre
Odour	Odourless
Odour threshold	Not Available
Specific Gravity: (Water + 1)	Approximately 2.7 Kg/dm3 - 1 lb/in3
Flammability	Non flammable
Flash point	Not relevant
Boiling point	Not Available
Melting point	520/660 °C - 970°/1250 °F Vapour
Evaporation rate	Not Available
pH	Not Available
Vapour density	Not Available
Relative density	Not Available
Solubility (water)	Insoluble
Vapour Pressure	Not Available
Upper explosion limit	Not Relevant
Lower explosion limit	Not relevant
Partition coefficient	Not Available
Autoignition temperature	Not Available
Decomposition temperature	Not Available
Viscosity	Not Available
Explosive properties	Not Available
Oxidising properties	Not Available

9.2 Other information

No additional information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No additional information available

10.2 Chemical stability

This product is stable under normal conditions

10.3 Possibility of hazardous reactions

Will not occur

10.4 Conditions to avoid
No further information available

10.5 Incompatible materials
No further information available

10.6 Hazardous decomposition products
May evolve toxic gases (metal oxides) during welding or when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity Acute effects of the various components of welding fumes and gases can generally be related to a particular process and exposure. Health hazards associated with welding, other than those related to fumes and gases, include electric shock, burns due to hot metal splashes, eye and skin effects of ultraviolet and infra-red radiation, effects of radiant heat, and effects of noise, for example, plasma arc welding and arc-air gouging process.

Ingredient	Oral LD50	ATE (Oral)	Comments
Iron	200 mg/kg	--	
Magnesium	>2000 mg/kg (rat)	>2000 mg/kg (rat)	
Manganese	>2000 mg/kg (rat)	--	
Silicon	>5000 mg/kg (rabbit)	>5000 mg/kg (rat)	
Copper	>2000 mg/kg (rat)	0.7 mg/kg (mouse)	
Zinc	1130 mg/kg (rabbit)	>2000 mg/kg (rat)	
Titanium		>2000 mg/kg (rat)	

Skin Exposure to fumes evolved may cause irritation and discoloration. Contact with hot material may cause skin burns. Contact may result in an electric shock which can result in death.

Eye Where generated (e.g. during welding operations), arc rays may injure eyes (delayed effect) and blindness may occur. Contact with hot material may result in thermal burns.

Sensitisation Insufficient data for classification as a skin or respiratory sensitiser.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Welding fume is classified as carcinogenic to humans (IARC Group 2B).

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT – single exposure Over exposure to metal fumes may result in metal fume fever. Symptoms resemble influenza, and usually occur several hours after exposure and include a metallic or sweet taste, chills, thirst, fever, muscle aches, chest soreness, fatigue, gastro-intestinal pain, headache, nausea and vomiting. The symptoms usually subside within one to three days of exposure with no residual effect. Harmful levels of ozone may be found in welding in confined spaces. Ozone is very irritant to the upper respiratory tract and lungs and its effects may be delayed. Symptoms include excessive mucus secretion, headache, lethargy, irritation and inflammation of the respiratory tract. In extreme cases, excess fluid and even hemorrhage may occur in the lungs. Exposure to manganese fume from welding may give rise to acute inflammation of the lungs.

STOT – repeated exposure Symptoms associated with repeated exposure are specific to the individual welding fume and gas components. Repeated exposure to welding fume may result in pulmonary dysfunction. Long, continued exposure to welding fume containing iron

oxide may lead to the deposition of iron oxide particles in the lungs. When present in sufficient quantities the deposition is detectable on chest x-rays and can result in a benign pneumoconiosis (siderosis). Repeated exposure to manganese fume may result in manganese poisoning (manganism), a disabling, and usually progressive disorder of the central nervous system with symptoms resembling Parkinsonism.

Aspiration Not classified as causing aspiration

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Harmful to aquatic life

12.2 Persistence and degradability
No information provided

12.3 Bio accumulative potential
No information provided

12.4 Mobility in soil
No information provided

12.5 Other adverse effects
Welding process may effect the environment if fumes are released directly into the atmosphere. Residues from welding consumables may degrade and accumulate in soils and ground water.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal Reuse where possible. No special precautions are normally required when handling this product.

Legislation Dispose in accordance with relevant / local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA

	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None allocated	None allocated	None allocated
14.2 Proper Shipping Name	None allocated	None allocated	None allocated
14.3 Transport hazard class	None allocated	None allocated	None allocated
14.4 Packing Group	None allocated	None allocated	None allocated

14.5 Environmental hazards
No further relevant information available

14.6 Special precautions for user
No further relevant information available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Approval Code	HSR002612 (2020)
Group Standard	Metal Industry Product (Subsidiary Hazard) Group Standard 2020
Inventory listings	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to exposures scenarios and 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. Scale of use, frequency of use and current or available engineering controls must be considered.

RPE - 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^3 (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.

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 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 form of product, 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.

HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds

CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
ATE	Acute Toxicity Estimate (for oral and dermal exposure)
OEL	Occupational Exposure Limit pH relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
RPE	Respiratory Protective Equipment
STEL	Short-Term Exposure Limit
STOT-SE	Specific target organ toxicity (single exposure)
STOT-RE	Specific target organ toxicity (repeated exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average
WES	Workplace exposure standards

Euromarc Industries Ltd requires that all customers read this safety data sheet carefully so as to be informed about the risks implied in the use of the product, and provide any person involved with a copy of the same and/or adequate training on the use of the product.

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