SAFETY DATA SHEET
SDS_SS Welding Wire_ER316LSi, ER309LSi_V1.2_111124

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Product Name: VW835 Welding Wire / VR885 Welding Rod – ER316LSi
Part Numbers: VW83501212, VW83301212
VR88509105, VR88512105, VR88516105, VR88520105, VR88524105, VR88316105, VR88324105

1.2 Other means of identification
Stainless Steel Mig Wire, Stainless Steel Tig Rod

1.3 Recommended use of the chemical and restrictions on use
Mig and Tig Welding, Welding applications, Do not use except for welding

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) or 111

2. HAZARD IDENTIFICATION

2.1 Classification of the hazardous chemical
The product is not classified as hazardous according to applicable GHS hazard classification criteria.
Physical Hazards
Not classified as a Physical Hazard

2.2 Label elements, including precautionary statements
Signal Word: **DANGER**
Symbols:

Hazards Statements:
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H350 - May cause cancer
H372 - Causes damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects
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
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	(CAS No.)	Wt. %	Exposure Limit (OSHA PEL) (mg/m^3)	Exposure Limit (ACGIH TLV) (mg/m^3)	Supplemental Information
Iron	(7439-89-6)	< 99.0	10	5	PEL for iron oxide/TLV for welding fume
Chromium	(7440-47-3)	< 35.0	1	0.5	Metal & Cr(+3) compounds, Cr (+6) water soluble compounds
Nickel	(7440-02-0)	< 35.0	1	0.5	Compounds, Soluble compounds, Insoluble compounds
Manganese	(7439-96-5)	< 10.0	5 C	0.2	
Molybdenum	(7439-98-7)	< 10.0	15	10	TLV for insoluble compounds
Tungsten	(7440-33-7)	< 6.5	NL	5	TLV for insoluble compounds
Cobalt	(7440-48-4)	< 4.5	0.1	0.02	
Copper	(7440-50-8)	< 4.5	1	1	PEL/TLV for dust/mists
			0.1	0.05	PEL/TLV for fumes
Vanadium	(7440-62-2)	< 4.5	0.5 C	0.05	PEL/TLV for respirable van. Pentoxide
Silicon	(7440-21-3)	< 2.5	15 (T)	10	
			5 (R)	-	
Titanium	(7440-32-6)	< 2.5	15	10	PEL and TLV for titanium dioxide
Aluminum	(7429-90-5)	< 2.0	15 (T)	10	
			5 (R)	5	TLV as Aluminum in welding fume
Columbium	(7440-03-1)	< 1.1	NL	NL	
Sulfur	(7704-34-9)	< 0.45	13	5.2	PEL and TLV for sulfur dioxide
Phosphorus	(7723-14-0)	< 0.45	0.1	0.1	
Tin	(7440-31-5)	< 0.05	2	2	PEL and TLV for inorganic tin
Tantalum	(7440-25-7)	< 0.02	2	5	
Boron	(7440-42-8)	< 0.01	15	10	PEL and TLV for boron oxide

Every material listed may not be present in all grades of steel. CAS Registry No. is representative for components listed.
PEL (mg/m3) - 8-Hour Occupational Safety and Health Administration's (OSHA's) Permissible Exposure Limit (PEL) is milligrams per cubic meter of air (mg/m3)
TLV (mg/m3) - 8-Hour American Conference of Governmental Industrial Hygienists (ACGIH's) Threshold Limit Value (TLV) in mg/m3 - 1993-1994
C - Denotes ceiling limit/PEL for fume
T - Total particulate
R - Respirable fraction

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 in sealed containers, 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
Chromium	WES(NZ)	--	0.5	--	--
Silicon	WES(NZ)	--	10		
Manganese	WES(NZ)	--	0.2 0.02(r)	--	--
Nickel	WES(NZ)	--	0.005(r)	--	--
Molybdenum	WES(NZ)	--	10	--	--
Tungsten	WES(NZ)	--	--	--	--
Iron	WES(NZ)	--	--	--	--
Cobalt metal dust and fume, as Co	WES(NZ)	--	0.02	--	--
Copper	WES(NZ)	--	0.01(r)	--	--
Vanadium	WES(NZ	--	0.05	--	--
Aluminium	WES(NZ	--	1(r)	--	--
Phosphorus	WES(NZ)	--	0.1	--	--
Tin	WES(NZ)	--	2	--	--
Tantalum	WES(NZ)	--	5	--	--

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.

Type-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state: Solid

Color: Grey, Bright silver

Vapour Pressure: Not Applicable

Specific Gravity (H2O=1) 7.5-8.5

Soluble in water Insoluble

PH Not Applicable

Boiling Point	Not Applicable
Viscosity	Not Applicable
Vapour Density (Air=1)	Not Applicable
Evaporation Rate	Not Applicable
Freezing point	Not Applicable
Odor	Odorless
Upper / lower flammability	Not Applicable
Odor threshold	Not Applicable
Relative density	Not Applicable
Melting Point	2400-2800 Fahrenheit
Flash point	Not Applicable
Flammability (Solid,Gas)	Not Applicable
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Applicable

9.2 Other information

No additional information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Non-Reactive unless gets in contact with chemical substances like acids or strong bases could cause generation of gas.

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

Acids, bases, and oxidizers.

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.
When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal / Coated wire / Coated rod / Bare wire / Bare rod.
Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8. A significant amount of the chromium in the fumes can be hexa- valent chromium, which has a very low exposure limit in some countries. Manganese has a low exposure limit, in some countries, that may be easily exceeded.
Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone.
Air contaminants around the welding area can be affected by the welding process and influence the com- position and quantity of fumes and gases produced.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects Acute toxicity

Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as carcinogenic to humans (Group 1).

Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
Iron	Rat 30 mg/kg Guinea Pig 20 mg/kg		

Manganese	9 mg/kg Rat		
Silicon	Rat 3160mg/kg		
Molybdenum	NE		
Phosphorus	Mouse 4.82mg/kg Rat 3.03mg/kg		
Copper	0.12mg/kg Human	3.5mg/kg Mouse	
Chromium	Rat 27.5mg/kg		
Nickel	Rat 250mg/kg		

Toxicity data: *Presented above are toxicological data available for the components of these products present in concentration greater than 1%.*

Acute toxicity
Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.
Skin corrosion/irritation
No data available.
Serious eye damage/irritation
No data available.
Respiratory or skin sensitisation
May cause sensitisation by skin contact
Germ cell mutagenicity
No data available.
Genotoxicity
No data available.
Carcinogenicity

Repeated dose toxicity
No data available.
Reproductive toxicity
No data available.
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 haemorrhage 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 hazard
No data available.

11.2. Information on other hazards

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity

No data available.
Toxicity
No data available.
Aquatic
No data available.
Soil
No data available.
Acute fish toxicity
No data available.
Acute algae toxicity
No data available.
Acute crustacean toxicity
No data available.
Chronical toxicity
No data available.

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/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.

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.

Whilst Euromarc Industries Ltd has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Euromarc accepts no liability for loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in the SDS.

END OF SAFTEY DATA SHEET