

SAFETY DATA SHEET

6040

Product Name **STAINLESS STEEL MIG WIRE: 308LSI**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Emergency 1800 653 572 (24/7) (Australia only)
Web site <http://www.boc.com.au/>
Synonym(s) 109308 - PRODUCT CODE • 1093081 - PRODUCT CODE • 1093085 - PRODUCT CODE • 112308 - PRODUCT CODE • BOC STAINLESS STEEL MIG WIRE • MIG WIRE
Use(s) GAS METAL ARC WELDING (GMAW)
SDS date 08 January 2014

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R40 Limited evidence of a carcinogenic effect.
 R43 May cause sensitisation by skin contact.

SAFETY PHRASES

S23 Do not breathe gas/fumes/vapour/spray (where applicable).
 S36 Wear suitable protective clothing.

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN number	None Allocated	DG class	None Allocated
Packing group	None Allocated	Subsidiary risk(s)	None Allocated
Hazchem code	None Allocated		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
CHROMIUM	CAS: 7440-47-3 EC: 231-157-5	Not Available	19.67%
NICKEL	CAS: 7440-02-0 EC: 231-111-4	Carc.;R40 Xn;R43 T;R48/23	10.4%
PHOSPHORUS (P)	CAS: 7723-14-0 EC: 231-768-7	Not Available	0.015%
SULPHUR	CAS: 7704-34-9 EC: 231-722-6	Xi;R38	0.001%
CHROMIUM (III) COMPOUNDS (EVOLVED)	Not Available	Not Available	Not Available
CHROMIUM (VI) COMPOUNDS (EVOLVED)	Not Available	Xn;R43 Carc.;R49 N;R50/53	Not Available
OZONE (EVOLVED)	CAS: 10028-15-6 EC: 233-069-2	Not Available	Not Available

STAINLESS STEEL	Not Available	Not Available	>60%
MANGANESE	CAS: 7439-96-5 EC: 231-105-1	Not Available	1.78%
SILICON	CAS: 7440-21-3 EC: 231-130-8	Not Available	0.85%
CARBON	CAS: 7440-44-0 EC: 231-153-3	Not Available	0.014%
CHROMIUM (II) COMPOUNDS (EVOLVED)	Not Available	Not Available	Not Available
IRON	CAS: 7439-89-6 EC: 231-096-4	Not Available	Not Available
SILICA FUME	Not Available	Not Available	Not Available
WELDING FUME (EVOLVED)	Not Available	Not Available	Not Available

4. FIRST AID MEASURES

Eye	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.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
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. Ingestion is considered unlikely due to product form.
Advice to doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve toxic gases/ fumes (ozone) during welding operation. Hot metal may cause fire in contact with combustible materials (ie. paper). May evolve iron oxides, manganese oxides, chromium oxides, nickel oxides and molybdenum oxides when heated to decomposition. Additional fume may arise from coatings and constituents on the base materials.
Fire and explosion	No fire or explosion hazard exists.
Extinguishing	Use an extinguishing agent suitable for the surrounding fire.
Hazchem code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear Personal Protective Equipment (PPE) as detailed in Section 8 of this SDS.
Environmental precautions	Prevent product from entering drains and waterways.
Methods of cleaning up	If spilt, collect and reuse where possible.
References	See Sections 8 and 13 for exposure controls and disposal.

7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Handle with care to avoid sudden release of wire. Spooled wire can spring.
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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Chromium (II) compounds (as Cr)	SWA (AUS)	--	0.5	--	--
Chromium (III) compounds (as Cr)	SWA (AUS)	--	0.5	--	--
Chromium (VI) compounds (as Cr), water soluble	SWA (AUS)	--	0.05	--	--
Chromium Metal	SWA (AUS)	--	0.5	--	--
Coal dust (containing < 5% quartz)	SWA (AUS)	--	3	--	--
Fumed silica (respirable dust)	SWA (AUS)	--	2	--	--
Iron oxide fume (Fe ₂ O ₃) (as Fe)	SWA (AUS)	--	5	--	--
Iron salts, soluble, as Fe	SWA (AUS)	--	1	--	--
Manganese, dust & compounds (as Mn)	SWA (AUS)	--	1	--	--
Manganese, fume (as Mn)	SWA (AUS)	--	1	--	3
Nickel, metal	SWA (AUS)	--	1	--	--
Nickel, soluble compounds (as Ni)	SWA (AUS)	--	0.1	--	--
Ozone	SWA (AUS)	0.1	0.2	--	--
Phosphorus (yellow)	SWA (AUS)	--	0.1	--	--
Silicon	SWA (AUS)	--	10	--	--
Welding fumes (not otherwise classified)	SWA (AUS)	--	5	--	--

Biological limits

Ingredient	Reference	Determinant	Sampling Time	BEI
CHROMIUM	ACGIH BEI	Total chromium in urine	End of shift at end of workweek	25 µg/L
	ACGIH BEI	Total chromium in urine	Increase during shift	10 µg/L

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.

PPE**Eye / Face**

Wear a welding helmet.

Hands

Wear leather or welding gloves.

Body

Wear coveralls and a leather apron and leather 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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	BRIGHT DRAWN STAINLESS STEEL WIRE ON SPOOL
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT RELEVANT
Melting point	1350°C
Evaporation rate	NOT RELEVANT
pH	NOT RELEVANT
Vapour density	NOT AVAILABLE
Specific gravity	> 7
Solubility (water)	INSOLUBLE
Vapour pressure	NOT RELEVANT

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Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
% Volatiles	NOT RELEVANT

10. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended conditions of storage.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to avoid	Incompatible with oxidising agents (eg. hypochlorites) and acids (eg. nitric acid).
Hazardous Decomposition Products	May evolve iron oxides, manganese oxides, chromium oxides, nickel oxides and molybdenum oxides when heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Irritant. Toxic fumes (eg. ozone), radiation, an electric shock, hot metal and noise may present a hazard during the welding process. Over exposure to welding fumes may result in a flu-like illness known as welding fume fever (symptoms may be delayed). Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B). Chronic exposure to fume may result in pulmonary dysfunction. Chronic exposure to nickel compounds may result in nasal and respiratory disease, including cancer. Nickel is classified as possibly carcinogenic to humans (IARC Group 2B). This product also contains chromium which can be oxidised to carcinogenic (IARC Group 1) hexavalent chromium during the welding process. Chronic exposure to iron dust may result in mottling of the lungs, a condition referred to as siderosis. Manganese is reported to cause a decrease in pulmonary function, blood changes, irreversible CNS damage and kidney damage.																																	
Eye	Irritant. Where generated (eg. during welding operations), arc rays may injure eyes (delayed effect) and blindness may occur. Contact with hot material may result in thermal burns.																																	
Inhalation	Irritant fumes. Over exposure may result in irritation of the nose and throat, coughing, ulceration, perforation of the nasal septum and sensitisation. Metal fumes may result in metal fume fever (flu-like symptoms): metallic taste, dry throat, coughing and tight chest. Effects may be delayed. Ozone may also be evolved which can cause pulmonary oedema and haemorrhaging.																																	
Skin	Irritant fumes. Exposure to fumes evolved may cause irritation and discolouration. Contact with hot material may cause skin burns. Contact may result in an electric shock which can result in death. May cause sensitisation by skin contact.																																	
Ingestion	Ingestion is considered unlikely due to product form.																																	
Toxicity data	CHROMIUM (7440-47-3) <table><tr><td>LDLo (ingestion)</td><td>71 mg/kg (human)</td></tr><tr><td>TDLo (ingestion)</td><td>1.2 mg/kg/6 weeks (rat)</td></tr></table> NICKEL (7440-02-0) <table><tr><td>LD50 (intraperitoneal)</td><td>250 mg/kg (rat)</td></tr><tr><td>LDLo (ingestion)</td><td>5 mg/kg (guinea pig)</td></tr><tr><td>LDLo (subcutaneous)</td><td>7.5 mg/kg (rabbit)</td></tr><tr><td>TCLo (inhalation)</td><td>15 mg/m³/91W-I (guinea pig - tumors)</td></tr><tr><td>TDLo (ingestion)</td><td>158 mg/kg (rat - foetotoxic)</td></tr></table> SULPHUR (7704-34-9) <table><tr><td>LC50 (inhalation)</td><td>1660 mg/m³ (mammal)</td></tr><tr><td>LDLo (ingestion)</td><td>175 mg/kg (rabbit)</td></tr></table> CHROMIUM (VI) COMPOUNDS (EVOLVED) <table><tr><td>LDLo (ingestion)</td><td>71 mg/kg (human)</td></tr><tr><td>TDLo (ingestion)</td><td>1.2 mg/kg/6 weeks (rat)</td></tr></table> OZONE (EVOLVED) (10028-15-6) <table><tr><td>LC50 (inhalation)</td><td>36 ppm/3 hours (rabbit)</td></tr><tr><td>LCLo (inhalation)</td><td>50 ppm/30 minutes (human)</td></tr><tr><td>TCLo (inhalation)</td><td>1 ppm (human)</td></tr></table> MANGANESE (7439-96-5) <table><tr><td>LD50 (ingestion)</td><td>9000 mg/kg (rat)</td></tr><tr><td>TCLo (inhalation)</td><td>2300 ug/m³ (man - CNS)</td></tr></table>		LDLo (ingestion)	71 mg/kg (human)	TDLo (ingestion)	1.2 mg/kg/6 weeks (rat)	LD50 (intraperitoneal)	250 mg/kg (rat)	LDLo (ingestion)	5 mg/kg (guinea pig)	LDLo (subcutaneous)	7.5 mg/kg (rabbit)	TCLo (inhalation)	15 mg/m³/91W-I (guinea pig - tumors)	TDLo (ingestion)	158 mg/kg (rat - foetotoxic)	LC50 (inhalation)	1660 mg/m³ (mammal)	LDLo (ingestion)	175 mg/kg (rabbit)	LDLo (ingestion)	71 mg/kg (human)	TDLo (ingestion)	1.2 mg/kg/6 weeks (rat)	LC50 (inhalation)	36 ppm/3 hours (rabbit)	LCLo (inhalation)	50 ppm/30 minutes (human)	TCLo (inhalation)	1 ppm (human)	LD50 (ingestion)	9000 mg/kg (rat)	TCLo (inhalation)	2300 ug/m³ (man - CNS)
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MANGANESE (7439-96-5)	
CARBON (7440-44-0)	
LDLo (intravenous)	440 mg/kg (mouse)
IRON (7439-89-6)	
LD50 (ingestion)	20000 mg/kg (guinea pig)
LDLo (intraperitoneal)	20 mg/kg (rabbit)
TDLo (ingestion)	77 mg/kg (child)

12. ECOLOGICAL INFORMATION

Toxicity	No information provided.
Persistence and degradability	No information provided.
Bioaccumulative potential	No information provided.
Mobility in soil	No information provided.
Other adverse effects	AQUATIC: Mobility of nickel is controlled by various sorbents which scavenge it from solution. In pristine environments, hydrous oxides of iron & manganese control its mobility via sorption & co-precipitation. In polluted environments, the most abundant organic material will keep nickel soluble. Nickel is one of the most mobile heavy metals in aquatic environments and can persist indefinitely in natural waters. It is toxic to plants at 50 - 200 ppm.

13. DISPOSAL CONSIDERATIONS

Waste disposal	Reuse where possible. No special precautions are required for this product.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN number	None Allocated	None Allocated	None Allocated
Proper shipping name	None Allocated	None Allocated	None Allocated
DG class/ Division	None Allocated	None Allocated	None Allocated
Subsidiary risk(s)	None Allocated	None Allocated	None Allocated
Packing group	None Allocated	None Allocated	None Allocated
Hazchem code	None Allocated		

15. REGULATORY INFORMATION

Poison schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Inventory Listing(s)	AUSTRALIA: AICS (Australian Inventory of Chemical Substances) All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information	Additional information on welding can be obtained from WTIA (Welding Technology Institute of Australia) Technical Note 7 "Health and Safety in Welding".
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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 (eg. 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 (eg. 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 eg. 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 fumes are 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.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: 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 ChemAlert 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
CNS	Central Nervous System
EC No.	EC No - European Community Number
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Product Name **STAINLESS STEEL MIG WIRE: 308LSI**

Revision history

Revision	Description
2.0	Standard SDS Review.
1.0	Initial SDS creation

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ("SDS").

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT 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, RMT accepts no liability for any 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 this SDS.

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End of SDS