

SAFETY DATA SHEET

6061

Product Name **SMOOTH-COR 115**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113
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) 1011512 - PART NUMBER · 1011516 - PART NUMBER · 115 SMOOTH-COR · BOC SMOOTH-COR 115
Use(s) GAS ASSISTED FLUX CORED ARC WELDING (FCAW)
SDS Date 26 April 2012

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	<1%
NICKEL	CAS: 7440-02-0 EC: 231-111-4	Xn;R40 Xn;R43 T;R48/23	<1%
OZONE (EVOLVED)	CAS: 10028-15-6 EC: 233-069-2	Not Available	Not Available
QUARTZ (SILICA CRYSTALLINE)	CAS: 14808-60-7 EC: 238-878-4	Not Available	Not Available
IRON	CAS: 7439-89-6 EC: 231-096-4	Not Available	>60%
MANGANESE	CAS: 7439-96-5 EC: 231-105-1	Not Available	1 - 2%
FLUORIDES	Not Available	Not Available	Not Available

LIMESTONE	CAS: 1317-65-3 EC: 215-279-6	Not Available	Not Available
MOLYBDENUM	CAS: 7439-98-7 EC: 231-107-2	Not Available	Not Available
SILICON	CAS: 7440-21-3 EC: 231-130-8	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). Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve toxic gases/ fumes (fluorides, nickel/chromium oxides and ozone) when heated to decomposition. May also evolve carbon oxides and nitrogen oxides when heated to decomposition. Additional fume may arise from coatings and contaminants on the base material.
Fire and Explosion	Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.
Extinguishing	Prevent contamination of drains or waterways.
Hazchem Code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Spillage	If spilt, collect and reuse where possible.
-----------------	---

7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from oxidising agents, acids and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.
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
Calcium carbonate	SWA (AUS)	--	10	--	--
Chromium Metal	SWA (AUS)	--	0.5	--	--
Fluorides, as F	SWA (AUS)	--	2.5	--	--
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
Molybdenum, insoluble compounds (as Mo)	SWA (AUS)	--	10	--	--
Molybdenum, soluble compounds (as Mo)	SWA (AUS)	--	5	--	--
Nickel, metal	SWA (AUS)	--	1	--	--
Nickel, soluble compounds (as Ni)	SWA (AUS)	--	0.1	--	--
Ozone	SWA (AUS)	0.1	0.2	--	--
Silica, Crystalline Quartz	SWA (AUS)	--	0.1	--	--
Silicon	SWA (AUS)	--	10	--	--
Welding fumes (not otherwise classified)	SWA (AUS)	--	5	--	--

Biological Limits

No biological limit allocated.

Engineering Controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, use local or extraction ventilation at source. 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	FLUX CORED MILD STEEL WIRE ON SPOOL
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1500°C (Approximately)
Evaporation rate	NOT RELEVANT
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	NOT AVAILABLE
Solubility (water)	INSOLUBLE
Vapour pressure	NOT RELEVANT
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
% Volatiles	NOT RELEVANT

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under recommended conditions of storage.

Product Name SMOOTH-COR 115

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 toxic gases/ fumes (fluorides, nickel/chromium oxides and ozone) when heated to decomposition.
Hazardous Reactions	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Irritant - toxic fumes evolved during heating. Use safe work practices to avoid eye or skin contact and fume inhalation. Chronic exposure may result in discolouration of teeth; as well as lung, kidney, liver, ligament and bone (osteosclerosis, skeletal fluorosis) damage. Individuals with pre-existing respiratory impairment (eg asthmatics) or arthritic conditions are advised to avoid exposure. Chromium (VI) and nickel compounds are classified as carcinogenic to humans (IARC Group 1).																																							
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 may result in irritation, dermatitis with severe itching and possible sensitisation.																																							
Ingestion	Ingestion is considered unlikely due to product form. However, ingestion may result in a metallic taste in the mouth, dry throat, thirst, nausea, vomiting and headache.																																							
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> 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> QUARTZ (SILICA CRYSTALLINE) (14808-60-7) <table><tr><td>LCLo (inhalation)</td><td>300 ug/m³/10 years (human)</td></tr><tr><td>TCLo (inhalation)</td><td>16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)</td></tr></table> IRON (7439-89-6) <table><tr><td>LD50 (ingestion)</td><td>20000 mg/kg (guinea pig)</td></tr><tr><td>LDLo (intraperitoneal)</td><td>20 mg/kg (rabbit)</td></tr><tr><td>TDLo (ingestion)</td><td>77 mg/kg (child)</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> FLUORIDES <table><tr><td>LDLo (ingestion)</td><td>50 mg/kg (kidney changes-hmn)</td></tr><tr><td>TDLo (ingestion)</td><td>3 mg/kg (convulsions-hmn)</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)	36 ppm/3 hours (rabbit)	LCLo (inhalation)	50 ppm/30 minutes (human)	TCLo (inhalation)	1 ppm (human)	LCLo (inhalation)	300 ug/m³/10 years (human)	TCLo (inhalation)	16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)	LD50 (ingestion)	20000 mg/kg (guinea pig)	LDLo (intraperitoneal)	20 mg/kg (rabbit)	TDLo (ingestion)	77 mg/kg (child)	LD50 (ingestion)	9000 mg/kg (rat)	TCLo (inhalation)	2300 ug/m³ (man - CNS)	LDLo (ingestion)	50 mg/kg (kidney changes-hmn)	TDLo (ingestion)	3 mg/kg (convulsions-hmn)
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)	36 ppm/3 hours (rabbit)																																							
LCLo (inhalation)	50 ppm/30 minutes (human)																																							
TCLo (inhalation)	1 ppm (human)																																							
LCLo (inhalation)	300 ug/m³/10 years (human)																																							
TCLo (inhalation)	16 000 000 particles/ft³/8 hours/17.9 years (human-fibrosis)																																							
LD50 (ingestion)	20000 mg/kg (guinea pig)																																							
LDLo (intraperitoneal)	20 mg/kg (rabbit)																																							
TDLo (ingestion)	77 mg/kg (child)																																							
LD50 (ingestion)	9000 mg/kg (rat)																																							
TCLo (inhalation)	2300 ug/m³ (man - CNS)																																							
LDLo (ingestion)	50 mg/kg (kidney changes-hmn)																																							
TDLo (ingestion)	3 mg/kg (convulsions-hmn)																																							

12. ECOLOGICAL INFORMATION

Environment	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 safety can be obtained from: WTIA (Welding Technology Institute of Australia) Technical note 7 "Health and Safety in Welding".
-------------------------------	--

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.

NICKEL EXPOSURE 1: NIOSH-USA recommend that workers exposed to Nickel and inorganic nickel compounds should have an initial medical exam including: 1. Comprehensive medical and work history with emphasis on skin conditions, allergies, upper and lower respiratory tract illnesses and smoking. 2. Complete physical exam with emphasis to upper respiratory tract and skin. 3. Specific clinical tests such as X-ray, pulmonary function and indicated sputum cytology and urine nickel analysis.

NICKEL EXPOSURE 2: 3. Judgement of employees ability to use positive or negative respiratory equipment. 4. Periodic medical exam performed annually, including same clinical and medical exams. 5. Employees with dermatitis must be counselled on risks, 6. Appropriate medical services and records available to employees suffering from nickel related exposure - with records to be maintained for at 40 years after last occupational exposure.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this ChemAlert 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
mg/m ³	Milligrams per Cubic Metre
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
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
TLV	Threshold Limit Value
TWA/OEL	Time Weighted Average or Occupational Exposure Limit

Revision History

Revision	Description
1.0	Standard SDS Review.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer 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.

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.

Prepared By

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

Revision: 1

SDS Date: 26 April 2012

End of SDS