

## SAFETY DATA SHEET

Product Name **SMOOTH-COR 711**

### 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)** 1071112 - PART NUMBER · 1071116 - PART NUMBER · 711 SMOOTH-COR · BOC SMOOTH-COR 711  
**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.

#### 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

<b>UN Number</b>	None Allocated	<b>DG Class</b>	None Allocated
<b>Packing Group</b>	None Allocated	<b>Subsidiary Risk(s)</b>	None Allocated
<b>Hazchem Code</b>	None Allocated		

### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
ALUMINIUM	CAS: 7429-90-5 EC: 231-072-3	F+;R15 F;R17	<1%
MAGNESIUM	CAS: 7439-95-4 EC: 231-104-6	F+;R15 F;R17	Not Available
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	2 - 3%
SILICON	CAS: 7440-21-3 EC: 231-130-8	Not Available	Not Available
TITANIUM DIOXIDE	CAS: 13463-67-7 EC: 236-675-5	Not Available	Not Available

**4. FIRST AID MEASURES**

<b>Eye</b>	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.
<b>Inhalation</b>	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
<b>Skin</b>	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.
<b>Ingestion</b>	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.
<b>Advice to Doctor</b>	Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

<b>Flammability</b>	Non flammable. May evolve toxic gases/ fumes (iron oxide, ozone) during welding operation. Hot metal may cause fire in contact with combustible materials. May also evolve carbon oxides and nitrogen oxides when heated to decomposition. Additional fume may arise from coatings and contaminants on the base material.
<b>Fire and Explosion</b>	No fire or explosion hazard exists.
<b>Extinguishing</b>	Prevent contamination of drains or waterways.
<b>Hazchem Code</b>	None Allocated

**6. ACCIDENTAL RELEASE MEASURES**

<b>Spillage</b>	If spilt, collect and reuse where possible.
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**7. STORAGE AND HANDLING**

<b>Storage</b>	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.
<b>Handling</b>	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 <sup>3</sup>	ppm	mg/m <sup>3</sup>
Aluminium (metal dust)	SWA (AUS)	--	10	--	--
Aluminium (welding fumes) (as Al)	SWA (AUS)	--	5	--	--
Aluminium, alkyls (NOC+) (as Al)	SWA (AUS)	--	2	--	--
Aluminium, pyro powders (as Al)	SWA (AUS)	--	5	--	--
Aluminium, soluble salts (as Al)	SWA (AUS)	--	2	--	--
Iron oxide fume (Fe <sub>2</sub> O <sub>3</sub> ) (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
Ozone	SWA (AUS)	0.1	0.2	--	--
Silica, Crystalline Quartz	SWA (AUS)	--	0.1	--	--
Silicon	SWA (AUS)	--	10	--	--
Titanium dioxide (a)	SWA (AUS)	--	10	--	--
Welding fumes (not otherwise classified)	SWA (AUS)	--	5	--	--

**Product Name**      **SMOOTH-COR 711**

**Biological Limits**                      No biological limit allocated.

**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.



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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**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

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**10. STABILITY AND REACTIVITY**

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**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 also evolve carbon oxides and nitrogen oxides when heated to decomposition.

**Hazardous Reactions**                    Polymerization is not expected to occur.

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**11. TOXICOLOGICAL INFORMATION**

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**Health Hazard Summary**                Irritant. Toxic fumes (eg. ozone), radiation, an electric shock, hot metal and noise may present a hazard during the welding process. At high levels mixed dusts or fumes containing iron can lead to pneumoconiosis characterised by pulmonary fibrosis. Chronic exposure to iron dust may result in mottling of the lungs, a condition referred to as siderosis. 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). 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

**Product Name**      **SMOOTH-COR 711**

	material may cause skin burns. Contact may result in an electric shock which can result in death.	
<b>Ingestion</b>	Ingestion is considered unlikely due to product form.	
<b>Toxicity Data</b>	<b>MAGNESIUM (7439-95-4)</b>	
	LDLo (ingestion)	230 mg/kg (dog)
	<b>OZONE (EVOLVED) (10028-15-6)</b>	
	LC50 (inhalation)	36 ppm/3 hours (rabbit)
	LCLo (inhalation)	50 ppm/30 minutes (human)
	TCLo (inhalation)	1 ppm (human)
	<b>QUARTZ (SILICA CRYSTALLINE) (14808-60-7)</b>	
	LCLo (inhalation)	300 ug/m <sup>3</sup> /10 years (human)
	TCLo (inhalation)	16 000 000 particles/ft <sup>3</sup> /8 hours/17.9 years (human-fibrosis)
	<b>IRON (7439-89-6)</b>	
	LD50 (ingestion)	20000 mg/kg (guinea pig)
	LDLo (intraperitoneal)	20 mg/kg (rabbit)
	TDL0 (ingestion)	77 mg/kg (child)
	<b>MANGANESE (7439-96-5)</b>	
	LD50 (ingestion)	9000 mg/kg (rat)
	TCLo (inhalation)	2300 ug/m <sup>3</sup> (man - CNS)

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**12. ECOLOGICAL INFORMATION**

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**Environment**      Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.

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**13. DISPOSAL CONSIDERATIONS**

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**Waste Disposal**      Reuse where possible. No special precautions are required for this product.

**Legislation**      Dispose of in accordance with relevant local legislation.

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**14. TRANSPORT INFORMATION**

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

	<b>LAND TRANSPORT (ADG)</b>	<b>SEA TRANSPORT (IMDG / IMO)</b>	<b>AIR TRANSPORT (IATA / ICAO)</b>
<b>UN Number</b>	None Allocated	None Allocated	None Allocated
<b>Proper Shipping Name</b>	None Allocated	None Allocated	None Allocated
<b>DG Class/ Division</b>	None Allocated	None Allocated	None Allocated
<b>Subsidiary Risk(s)</b>	None Allocated	None Allocated	None Allocated
<b>Packing Group</b>	None Allocated	None Allocated	None Allocated
<b>Hazchem Code</b>	None Allocated		

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**15. REGULATORY INFORMATION**

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**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.

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**16. OTHER INFORMATION**

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**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/m<sup>3</sup> ( 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. The TLV for Manganese may be reached before the general limit for welding fumes is reached.

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 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 <sup>3</sup>	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.

**Product Name**      **SMOOTH-COR 711**

**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.

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**End of SDS**