

Product Name	Bossweld Silicon Bronze Brazing Bare Rod
Part Number	300135, 300135H, 300136, 300136H, 300137, 300137H
SDS Document Number	SDS_Bossweld_Silicon_Bronze_v1.1_131219
Issue Date	13/12/19

1 Product identifier & identity for the chemical

1.1 Product Identifier

Product Name: Bossweld Silicon Bronze Brazing Bare Rod

Part Numbers: 300135, 300135H, 300136, 300136H, 300137, 300137H

1.2 Other means of identification

Silicon bronze bare rod for brazing.

1.3 Recommended use of the chemical and restrictions on use

Silicon bronze rod for brazing. Not to be used for any other purpose.

1.4 Suppliers name, address and phone number

Supplier Name: Dynaweld Industrial Supplies Pty Ltd
 Address: Building 2, 10 Jessica Place, Prestons NSW 2170, Australia
 Phone: +61 2 8761 6500
 Email: sales@dynaweld.com.au
 Web Site: <https://www.dynaweld.com.au/>

1.5 Emergency phone number

Emergency Phone: +61 2 8761 6500 (Australia)

2 Hazard Identification

2.1 Classification of the hazardous chemical

HAZARDOUS CHEMICAL. NON DANGEROUS GOODS. According to the WHS regulation and the ADG code.

2.2 Label elements, including precautionary statements

Signal Word: Danger



Symbols:

Hazard Statements

H332	Harmful if inhaled
H350	May cause cancer

Precautionary Statements Prevention

P201	Obtain special instructions before use
P271	Use only outdoors or in a well ventilated area
P281	Use personal protective equipment as required
P261	Avoid breathing dust/fumes

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Precautionary Statements Response

P308 + P313	If exposed or concerned: Get medical advice/attention
P312	Call a POISON CENTER or doctor/ physician if you feel unwell
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements Storage

P405	Store locked up
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Precautionary Statements Storage

P501	Dispose of contents/container in accordance with local regulations
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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, precautionary labels and *WTIA Technical Note No. 7 Health and Safety in Welding* before using this product.
- 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/information on ingredients

3.1 Identity of chemical ingredients

Chemical Name	CAS No.	Concentration Range (%)
Silicon	7440-21-3	2.80 – 4.00%
Manganese	7439-96-5	1.50%
Iron	7439-89-6	0.50%
Copper	7440-50-8	94%
Tin	7440-31-5	1.50%
Zinc	7440-66-6	1.50%
Phosphorus	7723-14-0	<0.15%

3.2 CAS number and other unique identifiers

Note: See section 3.1

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3.3 Concentration of ingredients

Note: See section 3.1

4 First Aid Measures

4.1 Description of necessary first aid measures

Eye Contact	<ul style="list-style-type: none"> Particulate bodies from welding spatter may be removed carefully. DO NOT attempt to remove particles attached to or embedded in eye. Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye. Seek urgent medical assistance, or transport to hospital.
Skin Contact	<p>In case of burns:</p> <ul style="list-style-type: none"> Quickly immerse affected area in cold running water for 10 to 15 minutes. Bandage lightly with a sterile dressing. Treat for shock if required. Lay patient down. Keep warm and rested. Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.
Ingestion	Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract

4.2 Symptoms caused by exposure

Copper, magnesium, aluminium, antimony, iron, manganese, nickel, zinc (and their compounds) in welding, brazing, galvanising or smelting operations all give rise to thermally produced particulates of smaller dimension than may be produced if the metals are divided mechanically. Where insufficient ventilation or respiratory protection is available these particulates may produce "metal fume fever" in workers from an acute or long term exposure.

- Onset occurs in 4-6 hours generally on the evening following exposure. Tolerance develops in workers but may be lost over the weekend. (Monday Morning Fever)
- Pulmonary function tests may indicate reduced lung volumes, small airway obstruction and decreased carbon monoxide diffusing capacity but these abnormalities resolve after several months.
- Although mildly elevated urinary levels of heavy metal may occur they do not correlate with clinical effects.
- The general approach to treatment is recognition of the disease, supportive care and prevention of exposure.
- Seriously symptomatic patients should receive chest x-rays, have arterial blood gases determined and be observed for the development of tracheobronchitis and pulmonary edema.

Note: Refer to Section 11 for further information.

4.3 Medical Attention and Special Treatment

Treat symptomatically.

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5 Fire Fighting Measures

As shipped, this product is non-flammable. However, welding arc and sparks can ignite combustibles and flammable products. Read and understand *WTIA Technical Note No. 7 Health and Safety in Welding* before using this product.

5.1 Suitable extinguishing media

There is no unsuitable extinguishing media known.

5.2 Specific hazards arising from the chemical

Fire Incompatibility – Welding electrodes should not be allowed to come into contact with strong acids or other substances which are corrosive to metals.

Welding arc and metal sparks can ignite combustibles.

5.3 Special protective equipment and precautions for fire fighters

Fire Fighting: Alert Fire Brigade and tell them location and nature of hazard. Product is not combustible. No special firefighting procedures required

Fire/Explosion Hazard: Non combustible. Not considered to be a significant fire risk, however containers may burn. In a fire may decompose on heating and produce toxic / corrosive fumes

HAZCHEM: Not Applicable

6 Accidental release measures

Unlikely due to form of product.

Crushing of the product should be avoided.

Welding fumes and slags may be released on use of this product.

6.1 Personal precautions, protective equipment and emergency procedures

See Section 8.

6.2 Environmental precautions

See Section 12.

6.3 Methods and materials for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> • Clean up all spills immediately. • Avoid contact with skin and eyes. • Wear impervious gloves and safety glasses. • Use dry clean up procedures and avoid generating dust
Major Spills	<p>Minor hazard.</p> <ul style="list-style-type: none"> • Clear area of personnel. • Alert Fire Brigade and tell them location and nature of hazard. • Control personal contact with the substance, by using protective equipment if risk of overexposure exists

Personal Protective Equipment advice is contained in Section 8 of the SDS.

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7 Handling and Storage

7.1 Precautions for safe handling

Safe Handling	<ul style="list-style-type: none"> • Earth all lines and equipment. • Limit all unnecessary personal contact. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Avoid contact with incompatible materials
Other Information	<ul style="list-style-type: none"> • Store in a cool, dry, well ventilated area and in securely seal containers. • Protect containers against physical damage. • Store away from incompatible materials and foodstuff containers. • Observe manufacturer's storage and handling recommendations contained within this SDS

7.2 Conditions for safe storage, including any incompatibilities

Suitable Container	<ul style="list-style-type: none"> • Packaging as recommended by manufacturer. • Check that containers are clearly labelled
Storage Incompatibility	Segregate from strong acids

8 Exposure controls/personal protection

8.1 Control parameters – exposure standards, biological monitoring

Chemical Name	CAS No.	TWA	STEL
Carbon	7440-44-0	Not Available	Not Available
Silicon	7440-21-3	Not Available	Not Available
Manganese (fume)	7439-96-5	1/mg	3/mg
Chromium (ii) (iii)		0.5/mg	Not Available
Chromium (iv)		0.05/mg	Not Available
Nickel	7440-02-0	1/mg	3/mg
Iron Oxide (fume)	1309-37-1	5/mg	10/mg
Molybdenum	7439-98-7	5/mg	10/mg
Titanium		Not Available	Not Available
Tantalum	7440-25-7	5/mg	10/mg
Cobalt	7440-48-4	0.1/mg	Not Available
Tungsten		1/mg	3/mg
Copper (fume)	7440-50-8	0.2/mg	Not Available
Phosphorus		Not Available	Not Available
Sulphur	7446-09-5	5/mg	13/mg
Magnesium (fume)	1309-48-4	1/mg	Not Available
Zinc Oxide (fume)	1314-13-2	5/mg	10/mg
Tin (fume)	7440-31-5	2/mg	4/mg

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Chemical Name	CAS No.	TWA	STEL
Aluminium Oxide	1344-28-1	10/mg	20/mg
Vanadium (fume)	1314-62-1	0.5/mg	1.5/mg
Beryllium		0.002/mg	Not Available
Lead (control)		0.15/mg	Not Available

Keep exposure below exposure limits. Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs and BEIs states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures.







8.2 Appropriate engineering controls

Ventilation: Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below the exposure limits in the worker's breathing zone, and the general area. Keep exposure as low as possible.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits.

Note: See WTI Technical Note 7 – Health and Safety in Welding for further information / guidance.

8.3 Personal protective equipment (PPE)

Eye Protection		Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade which is too dark to see the weld zone. Then go to the next lighter shade, which gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.
Hand protection:		Wear protective gloves. The glove supplier can recommend suitable gloves.
Protective Clothing		Wear hand, head, and body protection, which will help to prevent injury from radiation, sparks and electrical shock. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Wear dry gloves free of holes or split seams. Train the welder not to permit electrically live parts or electrodes to contact skin or clothing or gloves if they are wet. Insulate yourself from the work piece and ground using dry plywood, rubber mats or other dry insulation.
Respiratory protection:		Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. Use respirable fume respirator, or air-supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below exposure limits. <i>Note: For the occasional breaking of a rod, which may require "scoring" the surface to get a clean break, protection is not needed.</i>
Ear protection:		Wear earplugs or earmuffs when using engine driven arc welding machine or pulsed arc welding machine that generates high-level noise.
Hygiene measures:		Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Note: See WTI Technical Note 7 – Health and Safety in Welding for further information / guidance.

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9 Physical and chemical properties

	Property	Product description
9.1	Appearance	Solid
9.2	Odour	Odourless
9.3	Odour threshold	Not applicable
9.4	pH	Not applicable
9.5	Melting point/freezing point	No further relevant information available
9.6	Boiling point and boiling range	No further relevant information available
9.7	Flash point	Not applicable
9.8	Evaporation rate	Not applicable
9.9	Flammability	No further relevant information available
9.10	Upper/lower flammability or explosive limits	Not applicable
9.11	Vapour pressure	Not applicable
9.12	Vapour density	Not applicable
9.13	Relative density	No further relevant information available
9.14	Solubility(ies)	Insoluble
9.15	Partition coefficient: (n-octanol/water)	No further relevant information available
9.16	Auto-ignition temperature	No further relevant information available
9.17	Decomposition temperature	No further relevant information available
9.18	Viscosity	Not applicable
9.19	Specific heat value	No further relevant information available
9.20	Particle size	No further relevant information available
9.21	Volatile organic compounds content	No further relevant information available
9.22	% volatile	No further relevant information available
9.23	Saturated vapour concentration	No further relevant information available
9.24	Release of invisible flammable vapours and gases	No further relevant information available
	Additional parameters	
9.25	Shape and aspect ratio	No further relevant information available
9.26	Crystallinity	No further relevant information available
9.27	Dustiness	No further relevant information available
9.28	Surface area	No further relevant information available
9.29	Degree of aggregation or agglomeration	No further relevant information available
9.30	Ionisation (redox potential)	No further relevant information available
9.31	Biodurability or biopersistence	No further relevant information available

10 Stability and Reactivity

10.1 Reactivity

The product is non-reactive under normal conditions of storage and transport.

10.2 Chemical stability

Stable under normal conditions of storage and transport.

10.3 Conditions to avoid

See section 7

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10.4 Incompatible materials and possible hazardous reactions

See section 7

10.5 Hazardous decomposition products

See section 5

Note: For further information refer to WTIA Technical Note No. 7 Health and Safety in Welding.

11 Toxicological information

Emissions during the use of this product may induce an allergic or sensitisation reaction and thereby aggravate existing systemic disease.

Inhalation of welding fumes and gases can be dangerous to your health. The composition and quantity of both are dependent upon the material being worked, the process, procedures, and consumables used. Note: Refer to Section 10 for further information.

11.1 Information on routes of exposure

Acute Toxicity - Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Cr: The presence of chromium/chromate in welding fumes can cause irritation of nasal membranes and skin.

Ni: The presence of nickel compounds in fume can cause metallic taste, nausea, tightness of chest, fever.

Gases: Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death.

Chronic Toxicity – Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis, pneumoconiosis and other pulmonary effects. The severity of the change is proportional to the length of the exposure. The changes may be caused by non-work factors such as smoking, etc.

Ni: Long term overexposure to nickel fumes may also cause pulmonary fibrosis and edema.

Cr: Chromates may cause ulceration, perforation of the nasal septum, and severe irritation of the bronchial tubes and lungs. Liver damage has also been reported. Chromates contain the hexavalent form of chromium.

Mn: Overexposure to manganese compounds may affect the central nervous system, symptoms of which are languor, sleepiness, muscular weakness, emotional disturbances and spastic gait. The effect of manganese on the nervous system is irreversible.

Cu: Overexposure to copper fumes may lead to copper poisoning, resulting in hemolytic anemia and liver, kidney and spleen damage.

Fe: Inhalation of too much iron oxide fume over a long time can cause siderosis, sometimes called "iron pigmentation" of the lung, which can be seen on a chest x-ray but causes little or no disability. Chronic overexposure to iron (>50-100mg Fe per day) can result in pathological deposition of iron in body tissues, symptoms of which are fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis.

SiO₂: Respiratory exposure to the crystalline silica present in this welding electrode is not anticipated during normal use. Respiratory overexposure to airborne crystalline silica is known to cause silicosis, a form of disabling pulmonary fibrosis, which can be progressive and may lead to death.

Carcinogenicity – Welding fumes (not otherwise specified) are listed by the IARC as carcinogenic to humans.

SiO₂: Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a cancer risk to humans.

Ni: Nickel and its compounds are on the IARC and NTP lists as posing respiratory cancer risk.

Cr: Hexavalent chromium and its compounds are on the IARC and NTP lists as posing a cancer risk to humans.

Arc rays: Skin cancer has been reported.

Respiratory or Skin Sensitisation -

Ni: Nickel and its compounds are skin sensitizers with symptoms ranging from slight itch to severe dermatitis.

Cr: Chromates may cause allergic reactions, including skin rash. Asthma has been reported in some sensitised individuals. Skin contact may result in irritation, ulceration, sensitisation, and contact dermatitis.

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Others - Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition by-products may result in a condition known as polymer fume fever. Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.

11.2 Symptoms related to exposure

Note: See Section 11.1

11.3 Numerical measures of toxicity

No further information available

11.4 Immediate, delayed and chronic health effects from exposure

Note: See Section 11.1

11.5 Exposure Levels

Note: See Section 11.1

11.6 Interactive effects

Note: See Section 11.1

11.7 Data limitations

No further information available.

12 Ecological information

12.1 Ecotoxicity

DO NOT discharge into sewers or waterways.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Other adverse effects

No further information available.

13 Disposal considerations

13.1 Safe handling and disposal methods

Ferrous product; do not dispose of it in the environment (metal scrap).

When used in combination with fume extractors, treat the ensuing powders according to the provisions in force.

The generation of waste should be avoided or minimised whenever possible.

When practical, recycle in an environmentally acceptable, regulatory compliant manner.

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13.2 Disposal of any contaminated packaging

Dispose of non-recyclable products in accordance with all applicable National, State, and Local requirements.

13.3 Environmental regulations

Discharge, treatment, or disposal may be subject to National, State, or Local laws.

14 Transport information

14.1 UN number

No further relevant information available

14.2 Proper shipping name

No further relevant information available

14.3 Transport hazard class(es)

No further relevant information available

14.4 Packing group

No further relevant information available

14.5 Environmental hazards

No further relevant information available

14.6 Special precautions during transport

No further relevant information available

14.7 Hazchem Code

Hazchem code not relevant to this product

15 Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Regulations of each country are applied to substances / mixtures.

15.2 Poisons Schedule number

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).

16 Other information

Training advice:

Ensure that user is aware of the potential hazards and knows what to do in the event of an accident or an emergency.

16.1 Date of preparation or review

13th December, 2019

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16.2 Key abbreviations or acronyms used

BEI - Biological Exposure Indices

GHS - Globally Harmonized System of classification and labelling of chemicals.

IARC - International Agency for Research on Cancer

MPPCF - Million particles per cubic foot

NOC – Not Otherwise Classified

NTP - National Toxicology Program

PPE - Personal Protection Equipment

SUSMP - Standard for the Uniform Scheduling of Medicines and Poisons

TLVs - Threshold Limit Value

WTIA – Welding Technology Institute of Australia

Dynaweld Industrial Supplies Pty 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 Dynaweld Industrial Supplies Pty 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, Dynaweld Industrial Supplies 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 SAFETY DATA SHEET