SAFETY DATA SHEET
BW 002 Solid Stainless steel wire electrodes and rods

Version number: 1

Replaces SDS: 2009-11-23

Issued: 2020-03-05

Not for sale in the USA

Section 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name SolidARC 110 SSM (Stainless Steel SOLIDARC 110 SSM) and SolidARC 110 SST (Stainless Steel TIG); wire electrodes and rods

Article-№ .

Product/Article	Diameter (Inch)	Packaging (Lbs)	Part Number
SOLIDARC 110 SSM ER308LSi	0.035	30	11260420
SOLIDARC 110 SSM ER308LSi	0.045	30	11260421
SOLIDARC 110 SSM ER309L	0.035	30	11260422
SOLIDARC 110 SSM ER309L	0.045	30	11260423
SOLIDARC 110 SSM ER309LSi	0.035	30	11260424
SOLIDARC 110 SSM ER309LSi	0.045	30	11260425
SOLIDARC 110 SSM ER316LSi	0.035	30	11260426
SOLIDARC 110 SSM ER316LSi	0.045	30	11260427
SOLIDARC 110 SST ER308L	1/16	10	11260411
SOLIDARC 110 SST ER308L	3/32	10	11260412
SOLIDARC 110 SST ER308L	1/8	10	11260413
SOLIDARC 110 SST ER309L	1/16	10	11260414
SOLIDARC 110 SST ER309L	3/32	10	11260415
SOLIDARC 110 SST ER309L	1/8	10	11260416
SOLIDARC 110 SST ER316L	1/16	10	11260417
SOLIDARC 110 SST ER316L	3/32	10	11260418
SOLIDARC 110 SST ER316L	1/8	10	11260419

1.2 Relevant identified uses of the substance or mixture and uses advised against

Article type GMAW/GTAW : Solid stainless steel wire electrodes and rods AWS SFA 5.9 (CWB)

Use Gas shielded arc welding

1.3 Details of the supplier of the safety data sheet

Supplier Messer Canada Inc.

Street address 5860 Chedworth Way, Mississauga
Ontario L5R 0A2
Canada

Telephone **1-866-385-5349**

Fax **905-501-1717**

Email info.mg.ca@messer-ca.com

1.4 Emergency telephone number

Available outside office hours Yes

Emergency phone number (24 Hour) : (905) 501-0802 or CHEMTREC (800) 424-9300

Additional product information **Web site: www.messer-ca.com**

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Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to applicable national regulations.

2.2 Label elements

Refer to label.

2.3 Other hazards

When the product is used in the welding process the most important hazards are:
Overexposure to fumes and gases from welding can be dangerous to health.
Watch out for splatter, hot metal and slag. It may cause skin burn and cause fire.
Arc rays can injure eyes and burn skin. Electric shock can kill. Avoid touching live electrical parts.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

This product is a mixture and please refer to Section 3.2

3.2 Mixtures

AWS Class	Iron Fe	Silicium Si	Nickel Ni	Copper Cu	Manganese Mn	Molybdenum Mo	Chromium Cr	Cobalt Co	Titanium Ti	Other
CAS Number	7439-89-6	7440-21-3	7440-02-0	7440-50-8	7439-96-5	7439-98-7	7440-47-3	7440-48-4	7440-32-6	
Refer to Section 1.1	60-100	1-5	10-30	1-5	5-10	5-10	10-30	0.1-1.0	0.4	1.0
LD_{50} (specie, route)	30 g/kg (rat,oral)	3160 mg/kg (rat,oral)	N/Av	413 mg/kg (mouse, oral)	9 g/kg (rat,oral)	N/Av	N/Av	6171 mg/kg (rat, oral)	N/Av	N/Av
LC_{50} (specie)	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av	N/Av

Section 4. FIRST AND MEASURES

4.1 Description of first aid measures

Inhalation IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms occur.

Skin contact Burns should be treated by a doctor.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Burns from radiation, see doctor.

Ingestion Contact a doctor if more than an insignificant amount has been swallowed.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation Inhalation of vapours may cause irritation of the respiratory system in very susceptible persons.

4.3 Indication of any immediate medical attention and special treatment needed

Not available

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Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO2), powder or diffuse jet of water. In case of major fire: Extinguish fire with diffuse jet of water or foam.

5.2 Special hazards arising from the substance or mixture

Not available

5.3 Advice for fire fighters

Special protective equipment for fire fighters	No specific measures required for these electrodes prior to gouging. Gouging should not be carried out in the presence of flammable materials, vapours, tanks, cisterns and pipes and other containers which have held flammable substances unless these have been checked and certified safe. During a fire, irritating/toxic smoke and fumes may be generated. Do not enter fire area without proper protection. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece. Shield personnel to protect from venting, rupturing or bursting cans. Move containers from fire area if it can be done without risk. Water spray may be useful in cooling equipment and cans exposed to heat and flame.

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits. Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Skin contact should be avoided to prevent possible allergic reactions.

6.2 Environmental precautions

Try to prevent the material from entering drains or water courses.

6.3 Methods and material for containment and cleaning up

Not applicable

6.4 Reference to other sections

Personal protection: see section 8 and for disposal see section 13. Environmental precautions, paragraph 12. See also section 7 Precautions for safe handling.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Preventive handling precautions	Ensure adequate ventilation for the welder and others. Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding. Remove all flammable materials and liquids before welding.
General hygiene	Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Store welding consumables inside a room without humidity. Do not store welding consumables directly on the ground or beside walls. Store away from chemical substances like acids which could cause chemical reactions.

7.3 Specific end use(s)
Welding process.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Welding fume component	CAS №	TVL-TWA	TLV-STEL	Other
Iron oxide fume (as Fe)	1309-37-1	5 mg/m3 Respirable particulate	N/Av	5 mg/m3 Respirable particulate
Manganese and its inorganic compounds (as Mn)	7439-96-5	0.2 mg/m^3	N/Av	5 mg/m3
Chromium VI compounds (as Cr)	1333-82-0	0.05 mg/m3	N/Av	N/Av
Chromium III compounds (as Cr)	24613-89-6	0.5 mg/m3	N/Av	N/Av
Nickel and its inorganic compounds Water soluble Water insoluble	7440-02-0	1.5 mg/m3 N/Av	N/Av N/Av	N/Av 1.0 mg/m3
Copper Fume	7440-50-8	0.2 mg/m^3 (fume)	N/Av	0.1 mg/m3 (fume)
Molybdenum compounds (as Mo) soluble insoluble	7439-98-7	5 mg/m3	10 mg/ m3	N/Av
Nitrogen dioxide	10102-44-0	0.2ppm	N/Av	N/Av
Nitrogen monoxide	10102-43-9	25ppm	N/Av	N/Av
Ozone	10028-15-6	*	N/Av	N/Av
Carbon dioxide	124-38-9	5000ppm	30000ppm	5000ppm
Carbon monoxide	630-08-0	25ppm	N/Av	50ppm

8.2 Exposure controls

Environmental Exposure Controls – Refer to Section 6 of this SDS

Technical precaution measures	General ventilation and local fume extraction must be adequate to keep fume concentrations within safe limits.
Eye / face protection	Wear eye protection appropriate for welding.
Safety gloves	Skin contact should be avoided to prevent possible allergic reactions.
Other skin protection	Wear body protection which helps to prevent injury from radiation, sparks and electric shock.
Respiratory protection	Use respiratory equipment when welding in a confined space. Wear protective clothing and eye protection appropriate to arc welding.

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Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance, colour	Grey
Appearance, physical state	Rod
Auto-ignition temperature	Not applicable
Auto-flammability	Not auto-flammable
Decomposition temperature	Not applicable
Evaporation rate	Not applicable
Explosive properties	Not explosive
Flammability (solid gas)	Not applicable
Flash point	Not applicable
Form	Fast
Initial boiling point and boiling range	Not applicable
Melting point / Freezing point	Not available
Odour	Odourless
Odour threshold	Not available
Oxidising properties	Not available
Partition coefficient: n-octanol / water	Not applicable
pH value	Not applicable
Relative density	Not applicable
Solubility	Not available
Solubility in water	Insoluble
Upper / lower flammability or explosive limits	Not applicable
Vapour density	Not applicable
Vapour pressure	Not applicable
Viscosity	Not applicable

9.2 Other information

	Not applicable

Other

Density	7.98 g/cm^3

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Not available

10.2 Chemical stability

Stable under the recommended storage and handling conditions prescribed. Hazardous polymerization will not occur. Incompatible materials and conditions to avoid are usually related to welding.

10.3 Possibility of hazardous reactions

Not available

10.4 Conditions to avoid

None under normal conditions

10.5 Incompatible materials

Not available

10.6 Hazardous decomposition products

Welding fumes and gases. Additional fume may arise from coatings and contaminants on the base material.

Hazardous combustion products - Carbon oxides and other irritating/toxic fumes and smoke.

Welding fume component	CAS №.	Classification (67/548EEC)	CLP (1272/2008)		Concentration of classified fume components
Aluminium oxide (Al)	1344-28-1	-	-	-	<0.1
Barium (Ba)	7440-39-3	-	-	-	0.1
Bismuth oxide (Bi)	12640-40-3	-	-	-	0.1 to 0.4
Calcium (Ca)	1305-78-8	-	-	-	0.1
Cobalt oxide (Co)	1307-96-6	R22: Harmful if swallowed R43: May cause sensitisation by contact	Acute tox 4 (oral) Skin sens. 1	H302 H317	0.1
Chromium III compounds (as Cr)	24613-89-6	R45: May cause cancer R35: Causes severe burns R43: May cause sensitisation by skin contact	Carc. 1B Skin Corr. 1A Skin Sens. 1	H350 H314 H317	6.0 to 17.8

Chromium VI compounds (as Cr)	1333-82-0	R45: May cause cancer R46: May cause heritable genetic damage R24/25Toxic in contact with skin and if swallowed R26: Very Toxic by inhalation R35: Causes severe burns R42/43: May cause sensitisation by inhalation and skin contact R48/23: Toxic danger of serious damage to health by prolonged exposure through inhalation R62 Possible risk of impaired fertility	Carc 1A Muta 1B Repr. 2 Acute tox 2 (inhal) Acute tox 3 (oral/dermal) STOT RE 1 Skin corr 1A Resp sens 1 Skin Sens 1 STOT SE 3 (C≥1%)	H350 H340 H361f H330 H311 H301 H372 H314 H334 H317 H335	0.07 to 0.61
Copper oxide (Cu)	1317-38-0	-	-	-	0.1 to 0.6
Iron oxide (Fe)	1332-37-2	-	-	-	12.3 to 57.0
Potassium (K)	7440-09-7	R34: Causes burns	Skin Corr. 1B	H314	0.1 to 0.3
Lithium (Li)	7439-93-2	R34: Causes burns	Skin Corr. 1B	H314	0.1
Magnesium oxide (Mg)	1309-48-4	-	-	-	0.1
Manganese (Mn)	7439-96-5	-	-	-	0.9 to 46.1
Molybdenum (Mo)	7439-98-7	Molybdenum trioxide R36/37: Irritating to eyes and respiratory system R40: Limited evidence of carcinogenic effect	Molybdenum trioxide Carc. 2 Eye Irrit. 2 STOT SE 3	H351 H319 H335	0.1 to 0.6
Sodium (Na)	7440-23-5	R34: Causes burns	Skin Corr. 1B	H314	0.1 to 0.6
Nickel (Ni)	7440-02-0	R40: Limited evidence of carcinogenic effect R43: May cause sensitisation by skin contact R48/23: Toxic danger of serious damage to health by prolonged exposure through inhalation R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	Carc. 2 Skin sens 1 STOT RE 1	H351 H317 H372	0.6 to 8.0
Lead (Pb)	7439-92-1	-	-	-	0.1
Silicon (Si)	7440-21-3	-	-	-	0.3 to 1.3
Titanium dioxide (Ti)	13463-67-7	-	-	-	0.1

Vanadium (V)	7440-62-2	-	-	-	0.1
Zinc (Zn)	7440-66-6	-	-	-	0.1 to 1.1

Classification	H phrase	Text
Acute Toxicity (Inhal): Category 4	H332	Harmful if inhaled
Skin corrosion/irritation: Category 1A	H314	Causes severe skin burns and eye damage
Skin sensitisation: Category 1	H317	May cause an allergic skin reaction
Carcinogenicity: Category 1A	H350	May cause cancer
Mutagen: Category 1B	H340	May cause genetic defects
Specific Target Organ Toxicity: Single exposure Category 3	H335	May cause respiratory irritation
Specific Target Organ Toxicity: Repeated exposure Category 2	H373	May cause damage to organs through prolonged or repeated exposure

The Classification information above refers to the fume during use

Fume analysis: wt %	**Fume analysis: wt %**
Cr 6 to 17.8	Ni 0.6 to 8
Ca < 0.1	Cr (VI) 0.07 to 0.61
Fe 12.3 to 57	Si 0.3 to 1.3
Mn 1.9 to 46.1	Mo 0.1 to 0.6

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Conditions to avoid: none in the form supplied

When welding, fumes and gases generated can be dangerous to health.

Acute toxiciy	Excessive exposures may affect human health, as follows: Aspiration may cause pulmonary oedema and pneumonitis Short-term overexposure can cause dizziness, nausea and irritation of the nose, throat or eyes.
Irritation	Not available
Corrosive effects	Not available
Sensitisation	May cause sensitisation by skin contact
Mutagenicity	Not available
Carcinogenicity	Welding fumes are possibly carcinogenic to humans
Repeated dose toxicity	Not available

Reproductive toxicity	Not available
Synergistic materials	Not available

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

The welding process can effect the environment if fume is released directly into the atmosphere. Residues from welding consumables could degrade and accumulate into soils and ground water.

Acute fish toxicity	LC50 Fish 96h: Manganese: 2,91 mg/l Aluminiumoxide: >100 mg/l Salmo trutta
Acute algae toxicity	IC50 Algae 72h: Manganese: 0,55 mg/l Aluminiumoxide: >100 mg/l Selenastrum capricornatum (green algae)
Acute crustacean toxicity	EC50 Daphnia 48h: Manganese: 5,2 mg/l Aluminiumoxide: >100 mg/l Daphnia magna (Water flea)

12.2 Persistence and degradability

Not available

12.3 Bio accumulative potential

Bio concentration factor (BCF):
Iron: 140000
Manganese: 59052

12.4 Mobility in Soil

Not available

12.5 Results of PBT and vPvB assessment

Not available

12.6 Other adverse effects

Not available

Section 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal considerations	Dispose of any product, residue or packing material according to national and local regulations. Spent fume extraction filters shall be disposed of as dangerous waste.

Other

Waste	Packaging and rod scrap should be disposed of as general waste or recycled. No special precautions are required for this product. Fume collected from extraction units should be disposed of in accordance with local regulations (including Provincial and Federal Regulations). Collect all spillage.

Section 14. TRANSPORT INFORMATION

14.1 UN number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk

Not applicable

Other

Dangerous goods	No special requirements are necessary in transporting these products. Transportation of Dangerous Goods Regulations (TDGR): TDG Classification: NOT REGULATED Special case: N/Ap

Section 15. REGUATORY INFORMATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture.

EU regulations	Refer to national Regulations.
National regulations	WHMIS Label Information: **WARNING.** Do not remove or cover this Warning. Protect yourself and others. Read and understand this information. Electric shock can kill. Keep your head out of the fume. Arc rays and fume can affect others in your workplace. Comply with your employer's safety practices and procedures: protect others.

Safety data sheet available on request from www.messer-ca.com.
WHMIS information: Product is regulated according to the Controlled Product Regulations (CPR) in Canada. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this SDS contains all the information required by the CPR.
WHMIS classification: D2A - Toxic Material with other effects.

15.2 Chemical safety assessment

Not available

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Section 16. OTHER INFORMATION

References to key literature and data sources

The customer should provide this Safety Data Sheet to any person involved in the materials use or further distribution. Messer World requests the users (or distributors) of this product to read this Safety Data Sheet carefully before usage.

Prepared by Messer Canada Inc.

References

Safety Data Sheets from manufacturer/supplier.
Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2014.

Phrase meaning

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
CAS Chemical Abstract Service
IARC International Agency for Research on Cancer
LC Lethal concentration
LD Lethal Dosage
N/Ap Not applicable
N/Av Not available
NIOSH National Institute for Occupational Safety and Health
STEL Short-term Exposure Limit
TLV Threshold Limit Value
TWA Time Weighted Average
WHMIS Workplace Hazardous Materials Information System

Other

Manufacturer's notes

The information contained in this Safety Data Sheet relates only to the specific materials designated and may not be valid for such material used in combination with any other material or in any process.

Information is given in good faith and is based on the latest information available to The Messer World and is, to the best of The Messer World's knowledge and belief, accurate and reliable at the time of preparation. However, no representation, warranty or guarantee is made as to the accuracy, reliability or completeness of the information, and Messer World assumes no responsibility and disclaims any liability incurred in using this information.

The product is supplied on the condition that the user accepts the responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Freedom from patent rights must not be assumed.

Read this Safety Data Sheet carefully and become aware of hazards implied and the safety information.

End of Document