

Section 1: Identification of the substance / mixture and of the Company

1.1 Identification of the product, substance or mixture

Product identifier 802683, 802395, 802132, 802396, 802682, 802133, 712052 (OMC-11)
 Product type WLD Gas Metal Arc Welding (GMAW) Solid wire

1.2 Details of the supplier of the safety data sheet

Supplier TELWIN SPA
 Street address Via della Tecnica, 3
 Country 36030 VILLAVERLA (VI)
 Telephone number +39 0445 858811
 Fax +39 0445 858800
 * e-mail address telwin@telwin.com

1.4 Emergency telephone number

+39 0445 858811 (working hours)

Section 2: Hazards identification

IMPORTANT - This section covers the hazardous materials from which this product is manufactured. This data has been classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) as required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200). The fumes and gases produced during welding with normal use of this product are addressed in Section 8.

HAZARDOUS INGREDIENT	CAS	EINECS ¹	REGULATORY HAZARD CLASSIFICATION/DESIGNATION 67/548/EEC	IARC ^E	NTP ^Z	OSHA ^H	65Φ
Copper	7440-50-8	231-159-6	None	-	-	-	-
Iron	7439-89-6	231-096-4	None	-	-	-	-
Manganese	7439-96-5	231-105-1	Xn-R20/22y	-	-	-	-
Silicon	7440-21-3	231-130-8	None	-	-	-	-
(Amorphous Silica Fume)	69012-64-2	273-761-5	None	3	K	-	X

¹ European INventory of Existing Chemical Substances Number

Δ –European Union Directive 67/548/EEC-Annex 1

E – International Agency for Research on Cancer (1-Human Carcinogen, 2A-Probably Carcinogenic to Humans, 2B-Possibly Carcinogenic to Humans, 3 – Unclassifiable as to Carcinogenicity in Humans, 4 -Probably Not Carcinogenic to Humans)

Z-US National Toxicology Program (K-Known Carcinogen, S-Suspected Carcinogen)

H-OSHA Known Carcinogen List e-California Proposition 65 (X –On Proposition 65 list) ---Dashes indicate the ingredient is not listed with the IARC, NTP, OSHA or 65 Φ- Carcinogen, Mutagen or Reproductive Category per European Council Directive 67/548/EEC Annex 1 Y-Manganese Dioxide EU 67/548/EEC Classification/Designation X –Molybdenum Trioxide EU 67/548/EEC Classification/Designation

The following symbols correspond with the EU 67/548/EEC column above are in European Union Directive 67/548/EEC Annex 1 and EC 1272/2008 Annex VI – Table 3.2:



Xn – Harmful



Xi – Irritant

WARNING! -Avoid breathing welding fumes and gases; they may be dangerous to your health. Always use adequate ventilation. Always use appropriate personal protective equipment

PRIMARY ROUTES OF ENTRY: Respiratory System, Eyes and/or skin

ELECTRIC SHOCK: Arc welding and associated processes can kill. See Section 8.

ARC RAYS: The welding arc can injure eyes and burn skin

FUMES AND GASES: Can be dangerous to your health.

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Most fume ingredients are present as complex oxides and compounds and not as pure metals. When the electrode is consumed, the fume and gas decomposition products generated are different and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in this section, plus those from the base metal and coating, etc., as noted above. Monitor for the materials identified in the list within this section. Fumes from the use of this product may contain complex oxides or compounds of the following elements and molecules: amorphous silica fume, copper and manganese. Other reasonably expected constituents of the fume would also include complex oxides of iron and molybdenum. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning an degreasing activities). One recommended way to determine the composition and quality of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1, available from the "American Welding Society", P.O. Box 351040, Miami, FL 33135. Also, from AWS is F1.3 "Evaluating Contaminants in the Welding Environment-A Sampling Strategy Guide", which gives additional advice on sampling

Section 3: Hazardous ingredients

CS0020

SOLID STEEL WELDING WIRE

HAZARDOUS INGREDIENT	CAS NUMBER	EINCS	% Weight
Copper (1)	7440-50-8	231-159-6	0.1 - 0.5
Iron	7439-89-6	231-159-4	95
Manganese	7439-96-5	231-105-1	1 - 5
SILICON (Amorphous Silica Fume)	7440-21-3 690-64-2	231-130-8 273-761-5	0.5 - 1.5

(1)-Copper, if contained in the product, is clearly visible and only present as a surface coating.

Section 4: First aid measures

4.1 Description of first aid measures

INHALATION: If breathing is difficult provide fresh air and contact physician.

EYE/SKIN INJURIES: For radiation burns, see physician.

Section 11 of this MSDS covers the acute effects of overexposure to the various ingredients within the welding consumable. Section 8 of this MSDS lists the exposure limits and covers methods for protecting yourself and your co-workers.

Section 5: Fire and explosion hazard data

Welding consumables applicable to this sheet as shipped are nonreactive, non-flammable, no explosive and essentially nonhazardous until welded. Welding arcs and sparks can ignite combustibles and flammable products. Unused welding consumables may remain hot for a period of time after completion of welding process. See American National Standard (ANSI) Z49.1 for further general safety information on the use and handling of welding consumables and associated procedures.

Section 6: Accidental release measures

Solid objects can be picked up and placed into a container. Wear proper personal protective equipment while handling. Do not discard as general trash.

Section 7: Handling and storage

7.1 Precautions for safe handling

No specific requirements in the form supplied. Handle with care to avoid cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and product labels.

7.2 Conditions for safe storage, including any incompatibilities

Keep separate from acids and strong bases to prevent possible chemical reactions.

Section 8: Exposure controls/personal protection

Read and understand the instructions and the labels on the packaging. Welding fumes do not have a specific OSHA PEL or ACGIH TLV. The OSHA PEL for Particulate – Not Otherwise Classified (PNOC) is 5 mg/m³ – Respirable Fraction, 15 mg/m³ – Total Dust. The ACGIH TLV for Particles – Not Otherwise Specified (PNOS) is 3 mg/m³ – Respirable Particles, 10 mg/m³ – Inhalable Particles. The individual complex compounds within the fume may have a lower OSHA PEL or ACGIH TLV than the OSHA Particulate – Not Otherwise Classified (PNOC) and ACGIH Particles – Not Otherwise Specified (PNOS). An Industrial Hygienist, the OSHA Permissible Exposure Limits for Air Contaminants (29 CFR 1910.1000), and the ACGIH Threshold Limit Values should be consulted to determine the specific fume constituents present and their respective exposure limits. European Union Occupational Exposure Limits (EU OEL) are listed with the most stringent limit among the EU member nations. All exposure limits are in milligrams per cubic meter (mg/m³).

INGREDIENT	CAS	EINCS	OSHA PEL	ACGIH TLV	EU OEL
Copper	7440-50-8	231-159-6	0.1 (Fume), 1 (Dust)	0.2 (Fume), 1 (Dust)	0.1 I* (Aerosol); 0.2 I*** (Aerosol) - Germany; 0.1; 0.2*** - Denmark
IRON+	7439-89-6	231-096-4	5R*	5R* (Fe ₂ O ₃) [A4]	3 R* (Aerosol as Fe ₂ O ₃) - Switzerland 7*** (as Fe ₂ O ₃) - Denmark
MANGANESE#	7439-96-5	231-105-1	5 CL** (Fume) 1.3 STEL*** ■	0.2 I* A4) ◆ 0.02 R* ◆; ◆◆	0.02R* (Aerosol); 0.16R*** (Aerosol) -Germany 0.2 I* (Aerosol) -Germany 0.2; 0.4*** - Denmark
(Amorphous Silica Fume)	69012-64-2	273-761-1	0.8	3R*	2 I*; 4 I*** - Denmark
SILICON+	7440-21-3	231-130-8	5R*	3R*	4R* (Aerosol); 10 I* (Aerosol) - Denmark

R*-Respirable Fraction R***-Respirable Fraction-Short Term Exposure Limit I*-Inhalable Fraction I***-Inhalable Fraction-Short Term Exposure Limit **-Ceiling Limit ***-Short Term Exposure Limit +-As a nuisance particulate covered under "Particulates Not Otherwise Regulated" by OSHA or "Particulates Not Otherwise Classified" by ACGIH +-Crystalline silica is bound within the product as it exists in the package. However, research indicates silica is present in welding fume in the amorphous (non-crystalline) form #-Reportable material under Section 313 of SARA ## -Reportable material under Section 313 of SARA as dust or fume ■-NIOSH REL TWA and STEL ◆-Listed under ACGIH Notice of Intended Changes for Mn in 2010 ◆◆-Limit of 0.02 mg/m³ is proposed for Respirable Mn in 2011 by ACGIH Ele-Element Sol-Soluble Insol-Insoluble Inorg-Inorganic Cpnds-Compounds NOS-Not Otherwise Specified {A1}-Confirmed Human Carcinogen per ACGIH {A2}-Suspected Human Carcinogen per ACGIH {A3}-Confirmed Animal Carcinogen with Unknown Relevance to Humans per ACGIH {A4}-Not Classifiable as a Human Carcinogen per ACGIH {A5}-Not Suspected as a Human Carcinogen per ACGIH (non-crystalline) form

VENTILATION: Use enough ventilation, local exhaust at the arc or both to keep the fumes and gases below the PEL/TLV/OELs in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the regulatory limits.



CS0020

SOLID STEEL WELDING WIRE

EYE PROTECTION: Wear helmet or use face shield with filter lens. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others from the weld arc flash.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI (Z49.1. At a minimum this includes welder's gloves and protective face shield, and may include arm protectors, aprons, hats, shoulder protection as well as dark non synthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not Applicable

SPECIAL PRECAUTIONS (IMPORTANT): Maintain exposure below the PEL/TLV/OEL. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLV/OEL. Always use exhaust ventilation. Refer to the following sources for important additional information: American National Standard (ANSI) Z49.1; Safety in Welding and Cutting published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2 206 (29 CFR 1910), U.S. Government Printing Office, Washington, DC 20402.

Section 9: Physical and chemical properties

Welding consumables applicable to this sheet as shipped are nonreactive, non-flammable, non-explosive and essentially nonhazardous until welded.

PHYSICAL STATE: Cored Wire **ODOR:** N/A

COLOR: Gray **FORM:** Round Wire

Section 10: Stability and reactivity

GENERAL: Welding consumables applicable to this sheet are non-solid and non-volatile as shipped. This product is only intended for use per the welding parameters it was designed for. When this product is used for welding, hazardous fumes may be created. Other factors to consider include the base metal, base metal preparation and base metal coatings. All of these factors can contribute to the fume and gases generated during welding. The amount of fume varies with the welding parameters.

10.1 Reactivity

Contact with acids or strong bases may cause generation of gas.

10.2 Chemical stability

This product is stable under normal conditions.

Section 11: Toxicological information

11.1 Information on toxicological effects

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS:

Welding Fumes - May result in discomfort such as dizziness, nausea or dryness or irritation of nose, throat or eyes.

Copper - Metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure.

Iron, Iron Oxide -None are known. Treat as nuisance dust or fume.

Manganese - Metal fume fever characterized by chills, fever, upset stomach, vomiting, irritation of the throat and aching of body. Recovery is generally complete within 48 hours of the overexposure.

Silica (Amorphous) - Dust and fumes may cause irritation of the respiratory system, skin and eyes.

LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS:

Welding Fumes - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis".

Copper - Copper poisoning has been reported in the literature from exposure to high levels of copper. Liver damage can occur due to copper accumulating in the liver characterized by cell destruction and cirrhosis. High levels of copper may cause anemia and jaundice. High levels of copper may cause central nervous system damage characterized by nerve fiber separation and cerebral degeneration.

Iron, Iron Oxide Fumes - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposure to iron and its compounds ceases. Iron and magnetite (Fe₃O₄) are not regarded as fibrogenic materials.

Manganese - Long-term overexposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson's disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are overexposed to manganese compounds should be seen by a physician for early detection of neurologic problems. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

Silica (Amorphous) - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Non crystalline forms of silica (amorphous silica) are considered to have little fibrotic potential.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing impaired lung functions (asthma-like conditions). Persons with a pacemaker should not go near welding and cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. Respirators are to be worn only after being medically cleared by your company-designated physician.

EMERGENCY AND FIRST AID PROCEDURES: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. If irritation or flash burns develop after exposure, consult a physician.

CARCINOGENICITY: Welding fumes must be considered as carcinogens under OSHA (29 CFR 1910.1200) & the ICRC (International Centre of Research on Cancer).



CS0020

SOLID STEEL WELDING WIRE

CALIFORNIA PROPOSITION 65: WARNING: These products contain or produce a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

Section 12: Ecological information

Welding processes can release fumes directly to the environment. Welding wire can degrade if left outside and unprotected. Residues from welding consumables and processes could degrade and accumulate in the soil and groundwater.

Section 13: Disposal considerations

Use recycling procedures if available. Discard any product, residue, packaging, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

Section 14: Transport information

No international regulations or restrictions are applicable. No special precautions are necessary.

Section 15: Regulatory information

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label and the material safety data sheet. Observe all local and federal rules and regulations. Take all necessary precautions to protect yourself and others. United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA TITLE III: Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

Ingredient Name RQ(Ib) TPQ(Ib)

Products on this MSDS are a solid solution in the form of a solid article. -- --

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your local Emergency Planning Committee.

Section 311 Hazard Class

As shipped: Immediate

EPCRA/SARA TITLE III 313 TOXIC CHEMICALS: The following metallic components are listed as SARA 313 "Toxic Chemicals" and potentially subject to annual SARA 312 reporting: Chromium, Manganese and Nickel. See Section 3 for weight percentage.

CANADIAN WHMIS CLASSIFICATION: Class D; Division 2, Subdivision A

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

Section 16: Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in Directives 67/548/EEC and 1999/45/EC, and/or EC 1272/2008 Regulation (CLP) and subsequent amendments and adjustments.

Label elements:

Pictograms: not applicable

Precautions: not applicable

Risk phrases R: not applicable

Safe use of the substance (S phrase): refer to the product as sold: keep it out of the reach of children (P102). Read the warnings before use (P103). The product is not subject to hazard labeling pursuant to print 1.3.4, Annex 1 of EC1272/2008 Regulation amendments and adjustments.

Other hazard: none

Section 17: Other information

The following Risk and Safety Phrase Texts and Hazard Statements correspond with the columns labeled-EU 67/548/EEC within Section 2 of this material safety data sheet. Take appropriate precautions and protective measures to eliminate or limit the associated hazard.

EU Directive 67/548/EEC-RiskPhrase Texts

<p>R20/22 _ Harmful by inhalation and if swallowed R36/37 -Irritating to eyes and respiratory system R48/20/22 -Harmful: danger of serious damage. to health by prolonged exposure through inhalation and if swallowed</p>	
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For additional information please refer to the following sources:

USA: American National Standard (ANSI) Z49.1 "Safety in Welding and Cutting", **ANSI/American Welding Society (AWS) F1.5** "Methods for Sampling and Analyzing Gases from Welding and

Allied Processes", **ANSI/AWS F1.1** "Method for Sampling Airborne Particles Generated by Welding and Allied Processes",

AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", American Welding Society, 550 North Le Jeune Road, Miami, Florida, 33135. Safety and Health Fact Sheets available from AWS at www.aws.org. **OSHA Publication 2206 (29 C.F.R. 1910)**, U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. **Threshold Limit Values and Biological Exposure**



CS0020
SOLID STEEL WELDING WIRE

Indices, American Conference of Governmental Hygienists (ACGIH), 6500 Glenway Ave., Cincinnati, Ohio 45211, USA. **NFPA 51B** "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

UK: WMA Publication 236 and 237, "Hazards from Welding Fume", "The arc welder at work, some general aspects of health and safety".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes".

The supplier strongly recommends the users of this product study this MSDS, the product label information and become aware of all hazards associated with welding.

The supplier believes this data to be accurate and to reflect qualified expert opinion regarding current research. However, cannot make any expressed or implied warranty as to this information.