



Reviewed on 22/02/2022

## Safety Data Sheet

### 1 IDENTIFICATION

#### Product identifier

**Trade name:** W1060 (R45) – W1200 (R60) Welding Rods

**Other means of identification:** Carbon Steel Alloy

SDS # 0069

#### Recommended use and restriction on use

**Recommended use:** Carbon Steel Oxyfuel Gas Welding

**Restrictions on use:** No further relevant information available.

#### Manufacturer/Importer/Supplier/Distributor information

##### Importer:

Harris Products Group

14 Queensland Rd

Darra, QLD, Australia 4076

(07) 33753670

**Safety Data Sheet Questions:** [sales@hgea.com.au](mailto:sales@hgea.com.au)

**Website:** <http://www.harrisproductsgroup.com.au>

**Poisons Information Centre/Helpline (24 hours) Australia 13 11 26**

### 2 HAZARD(S) IDENTIFICATION

#### GHS classification of the substance/mixture.

Classified according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

#### Classification of the substance or mixture

The product is classified as hazardous according to the Globally Harmonized System (GHS)

**EMERGENCY OVERVIEW.** This product consists of solid steel wire or rods (which may be copper coated), which are odourless. There are no immediate health hazards associated with the wire or rod form of this product.

This product is not flammable nor reactive. If involved in a fire, this product may generate irritating iron fumes and a variety of iron compounds. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

<b>GHS Classification(s)</b>	Health – Eye Irritant: Category 1
	Skin corrosion/irritation: Category 1B
	STOT SE: Category 3
	STOT RE: Category 1

#### Label elements

**Signal word** DANGER

#### Hazard pictograms



GHS08



GHS07

**Hazard Statement(s)**

- H335** May cause respiratory irritation  
**H336** May cause drowsiness or dizziness  
**H372** Causes damage to organs through prolonged or repeated exposure

**Prevention Statement(s):**

- P260** Do not breathe dust/fume/gas/mist/vapours/spray.  
**P264** Wash thoroughly after handling.  
**P270** Do not eat, drink or smoke when using this product.  
**P271** Use only outdoors or in a well ventilated area.

**Response statement(s):**

- P304 + P340** IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
**P312** Call a POISON CENTER/doctor if you feel unwell  
**P314** Get medical advice and attention if you feel unwell

**Storage Statement(s):**

- P405** Store Locked Up  
**P403 + P233** Store in a well-ventilated place. Keep container tightly closed

**Disposal Statement(s):**

- P501** Dispose of contents/container in accordance with relevant regulations.

**Other Hazards** No information provided

**Additional information:****Other hazards which do not result in GHS classification:**

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.

**Hazard description:**

**WHMIS-symbols:** Not hazardous under WHMIS.

**3 Composition/information on ingredients****Chemical characterization: Mixtures**

**Description:** Mixture: consisting of the following components.

Substances/Mixtures		
CAS	Ingredient	Proportion %
7439-96-5	Manganese	0.5-1.40
7440-50-8	Copper	0.3
7439-89-6	Iron	Balance

**Additional information:**

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

**Composition comments:**

The term "Dangerous Components" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

**4 First-aid measures****Description of first aid measures**

**General information: EMERGENCY OVERVIEW.** This product consists of solid steel wire or rods (which may be

copper coated), which are odourless. There are no immediate health hazards associated with the wire or rod form of this product. This product is not flammable nor reactive. If involved in a fire, this product may generate irritating iron fumes and a variety of iron compounds. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

**Inhalation:**

Remove person from contaminated area to fresh air. Apply artificial respiration if needed. Call a physician if symptoms develop or persist.

**Skin contact:**

Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Get medical attention if irritation develops and persists.

**Eye contact:**

Rinse immediately with plenty of water for at least 15 minutes. Remove any contact lenses. Get medical attention if irritation develops or persists.

**Ingestion:**

For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Do NOT induce vomiting. Immediately rinse mouth and drink a cupful of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Information for doctor:** Treat Symptomatically

**Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**Danger**

Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

## 5 Fire-fighting measures

**Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire. Extinguish with foam, carbon dioxide or dry powder.

Do not use water or halogenated extinguishing media.

**Special hazards arising from the substance or mixture**

Fire or high temperatures create: Metal oxides.

**Advice for firefighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Move containers from fire area if you can do it without risk.

**Additional information:**

Read and understand the Work Safe Australia Code of Practice on Welding Processes and “Standard for Fire Prevention During Welding, Cutting and Other Hot Work” before using this product. Section 274 of the Work Health and Safety Act (the WHS Act.)

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Wear protective clothing as described in Section 8 of this SDS. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions:**

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods and material for containment and cleaning up:**

Stop leak if you can do so without risk. Local authorities should be advised if significant spillages cannot be contained. Collect for salvage or disposal. Put material in suitable, covered, labelled containers. Avoid the generation of dusts during clean-up.

Clean up in accordance with all applicable regulations.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling:****Precautions for safe handling**

Provide adequate ventilation. Do not ingest. Do not breathe mist or vapour. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using do not eat or drink. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Observe good industrial hygiene practices. Read and understand the manufacturer's instruction and the precautionary label on the product. See the Australian Standard - AS 1674.1 – 1997 – Reconfirmed 2016. Safety in Welding and Allied Processes Australia.

**Conditions for safe storage, including any incompatibilities****Storage:**

Store in tightly closed original container in a dry, cool and well-ventilated place. Store in a closed container away from incompatible materials. Keep away from food, drink and animal feeding stuffs.

**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection****Control parameters****Exposure Guidelines:**

Refer to the Safe Environments risk management document – Welding Fume -

<http://www.safeenvironments.com.au/welding-fume/> The exposure standard refers to the publication by Work Safe Australia “Workplace Exposure Standard for Airborne Contaminants” with the Date of Effect being 22 December 2011. Work Safe Australia note that “exposure standards do not represent a fine dividing line between a healthy and unhealthy work environment. Natural biological variation and the range of individual susceptibilities mean that a small number of people might experience adverse health effects below the exposure standard.

<b>Exposure Standards</b>					
CAS	Ingredient	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
7439-96-5	Manganese Fume	1			3
	Manganese Dust	1			
7440-50-8	Copper Fume	0.2			
	Copper Dust & Mist	1			
7439-89-6	Iron	None Listed			

Reference: ACGIH Biological Exposure Indices

Refer to Worksafe Australia for standards:

[http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace\\_Exposure\\_Standards\\_for\\_Airborne\\_Contaminants.pdf](http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace_Exposure_Standards_for_Airborne_Contaminants.pdf)

**Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Engineering controls:** Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of dust and fumes. Shower, hand and eye washing facilities near the workplace are recommended.

**Ventilation**

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

**Breathing equipment:**



Where an inhalation risk exists, wear a Class P2 (Metal fume) respirator. If using product in a confined area, wear an Air-line respirator.

**Protection of hands:**



Wear nitrile or neoprene gloves for routine industrial use. Use triple gloves for spill response.

**Eye protection:**



Wear safety glasses with side shields (or goggles). When these products are used in conjunction with soldering, it is recommended that safety glasses, goggles, or face-shield with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting") be worn.

**Body protection:** Protective work clothing



## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

<b>Appearance</b>	Solid Wire Grey	<b>Physical State</b>	Solid
<b>Odour</b>	Odourless	<b>Flammability</b>	Not Available
<b>Odour Threshold</b>	Not Available	<b>Flash Point</b>	Not Available
<b>pH</b>	Not Available	<b>Auto Igniting</b>	Not Available
<b>Melting point/range</b>	Not Available	<b>Solubility water</b>	Insoluble
<b>Vapour Pressure, mmHg@980°C</b>	< 1mm Hg	<b>Flash Point</b>	Not Available
<b>Vapour Density</b>	Not Available	<b>Density at 20°C (68°F)</b>	Not Applicable
<b>Boiling Point &amp; boiling range</b>	3000°C	<b>Evaporation Rate</b>	Not Available
<b>Freezing/Melting Point</b>	1300°C	<b>Specific Gravity @200C (water = 1)</b>	7.6-7.78

## 10 Stability and reactivity

**Reactivity:** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability:** Stable under normal temperatures and pressures and conditions of storage.

### Possibility of hazardous reactions

Polymerization is not expected to occur.

**Conditions to avoid:** Uncontrolled exposure to extreme temperatures, incompatible materials.

**Incompatible materials:** Strong oxidizing agents. Strong acids. Strong bases. Acetylene. Ammonia. Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>). Chlorine. Bromine, iodine, turpentine, magnesium metal. Hydrogen sulphide. Ammonium nitrate.

**Hazardous decomposition products:** Toxic metal oxides are emitted when heated above the melting point. Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used. 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 worker 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 vapours from cleaning and degreasing activities.) Fumes can be reasonably expected to include: Metal oxides.

## 11 Toxicological information

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
7439-96-5	Manganese	9000 mg/kg Rat		
7440-50-8	Copper	0.12mg/kg Human	3.5mg/kg Mouse	
7439-89-6	Iron	30g/kg Rat		

### Information on toxicological effects:

#### Acute toxicity:

When heated, the vapours/fumes given off may cause respiratory tract irritation. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever.

#### Skin Contact:

This product is not expected to cause skin sensitization.

#### Local Effects:

Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye, mucous membranes and respiratory tract.

**Chronic Effects:** Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to benign pneumoconiosis (siderosis). Overexposure to manganese fumes may affect the brain and central nervous system, resulting in poor coordination, difficulty speaking, and arm or leg tremor. This condition can be irreversible. Long-term exposure to copper compounds may cause anaemia.

#### Carcinogenicity:

This product is not considered to be a carcinogen. Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B).

#### STOT – single exposure:

May cause irritation of respiratory tract.

#### STOT – repeated exposure:

Not classified

## 12 Ecological information

Ingredient	Result	Species	Exposure
7439-96-5 Manganese	>3.6mg/L	Fish	96 Hours
7440-50-8 Copper Dust & Mist	58 mg/L	Fish	96 Hours
7440-50-8 Copper	200 mg/l	Fish	96 Hours
7439-89-6 Iron	>500mg/l	Catfish	96 Hours

**Ecotoxicity:** Alloys in massive forms present a limited hazard for the environment.

**Environmental Effects:** Significant environmental persistence and bioaccumulation can be expected.

**Persistence and Degradability:** The product is not biodegradable.

**Bioaccumulative Potential:** The product contains potentially bio accumulating substances.

**Mobility in soil:** Alloys in massive forms are not mobile in the environment.

## 13 Disposal considerations

### Waste treatment methods

**Recommendation:**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Uncleaned packagings:** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport Information

This product is not classed as hazardous.

UN-Number DOT, ADR, ADN, IMDG, IATA	Not Regulated
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Not Regulated
Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class	Not Regulated
Packing group DOT, ADR, IMDG, IATA	Not Regulated
Environmental hazards: Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Not regulated.

## 15 Regulatory information

**Product Name:** W1060 (R45) – W1200 (R60) Welding Rods

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**Poison Schedule:**

Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications:**

Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Refer to the Australian Inventory of Chemical Substances – AICS at <https://www.nicnas.gov.au/chemicals-on-AICS#main>

**Poison schedule:** Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). <https://www.legislation.gov.au/Details/F2016L01638>

**Classifications:** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

## 16 Other information

### References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice

Standard for the Uniform Scheduling of Medicines and Poisons

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Modell Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work, Australia

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

**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 (e.g. 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.

**WELDING (3):** Other gases and fumes associated with welding processes include: Inert shielding gases (e.g. 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 (e.g. 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 fume is classified as possibly carcinogenic to humans (IARC Group 2B).

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this 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.

**Disclaimer:**

We urge each end user and recipient of this SDS to study it carefully. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**WARNING: PRODUCT COMPONENTS PRESENT HEALTH AND SAFETY HAZARDS. READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET (M.S.DS.). ALSO, FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.**

The information contained herein relates only to the specific product. If the product is combined with other materials, all component properties must be considered. **BE SURE TO CONSULT THE LATEST VERSION OF THE MSDS. MATERIAL SAFETY DATA SHEETS ARE AVAILABLE FROM HARRIS PRODUCTS GROUP** Harris Products Group, HGE PTY LTD, Brisbane | Melbourne | Perth | New Zealand, 14 Queensland Rd, Darra, QLD 4076, Phone: (07) 3375 3670 | Fax: (07) 3375 3620, Email: sales@hgea.com.au, www.harrisproductsgroup.com.au,

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