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## Safety Data Sheet

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### 1 IDENTIFICATION

#### Product identifier

**Trade name:** Cut Rod

**Other means of identification:** Metal Rod Coated

SDS # 0019

#### Recommended use and restriction on use

**Recommended use:** Metal Welding Operations

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

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

##### Importer:

NEW ZEALAND

Harris Products Group

47 Edmundson St, Onekawa, Napier

New Zealand 4110

(06) 83405875

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

**Website:** <http://www.harrisproductsgroup.co.nz>

**New Zealand National Poisons Centre/Helpline (24 hours) 0800 POISON (0800 764 766)**

**Fire Service - Ambulance – 111**

AUSTRALIA

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>

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### 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 not classified as hazardous according to the Globally Harmonized System (GHS)

#### GHS Classification(s)

##### Label elements

**Hazard Symbol** – No symbol required

**Signal word** – No signal word required

##### Hazard Statement(s)

Not Applicable

##### Prevention Statement(s):

Not Applicable

**Storage Statement(s):** Store Locked Up

**Disposal Statement(s):** 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:**

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

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

**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 in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation, plus those from the base metal and coating, etc., of the materials shown in Section 3 of this Safety Data Sheet. Monitor for the component materials identified in the list in Section 3.

Fumes from the use of this product may contain complex oxides or compounds of the following elements and molecules: amorphous silica fume, calcium oxide, chromium, fluorspar or fluorides, manganese, nickel, silica and strontium. Other reasonably expected constituents of the fume would also include complex oxides of iron, titanium, silicon 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 vapours from cleaning and degreasing activities). One recommended way to determine the composition and quantity 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.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

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

Sustances/Mixtures		
CAS	Ingredient	Proportion
7439-89-6	Iron	65-85
7439-96-5	Manganese	1-5.0
7440-21-3	Silicon	1-5.0
13463-67-7	Titanium Dioxide	1-15
1317-65-3	Calcium Carbonate	1-5
7631-86-9	Silicon Dioxide	1-5
12030-97-6	Potassium Titanate	0-3
12034-34-3	Sodium Titanate	0-2
68476-25-5	Feldspar	0-3
1309-38-2	Iron Oxide	0-5
7782-42-5	Graphite	0-5
1344-28-1	Aluminium Oxide	0-2
1312-76-1	Potassium Silicate	0-5
1344-09-8	Sodium Silicate	0-5
9004-34-6	Cellulose	0.5-10

**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**

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**Description of first aid measures**

**INGESTION:** Not an expected route of exposure. Do not eat, drink, or smoke while welding; wash hands thoroughly before performing these activities. If symptoms develop, seek medical attention at once.

**INHALATION during welding:** If breathing is difficult, provide fresh air and contact physician. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.

**SKIN CONTACT during welding:** Remove contaminated clothing and wash the skin thoroughly with soap and water. If symptoms develop, seek medical attention at once.

**EYE CONTACT during welding:** Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until victim is transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once.

**Arc rays can injure eyes.** If exposed to arc rays, move victim to dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.

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**5 Fire-fighting measures**

**Fire Hazards:** Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, non-explosive and essentially nonhazardous until welded.

Welding arcs and sparks can ignite combustibles and flammable products. If there are flammable materials, including fuel or hydraulic lines, in the work area and the worker cannot move the work or the flammable material, a fire-resistant shield such as a piece of sheet metal or fire resistant blanket should be placed over the flammable material. If welding work is conducted within 35 feet or so of flammable materials, station a responsible person in the work zone to act as fire watcher to observe where sparks are flying and to grab an extinguisher or sound the alarm if needed.

**Suitable Extinguishing Media:** This product is essentially non-flammable until welded; therefore, use a suitable extinguishing agent for a surrounding fire.

**Unsuitable Extinguishing Media:** None known.

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**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

In the case of a release of solid welding consumable products, solid objects can be picked up and placed into a disposal container. If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8. Wear proper personal protective equipment while handling. Do not discard as general trash.

**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.

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## 7 Handling and storage

### Handling:

**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.

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

**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.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
7439-89-6	Iron		10 Fume		
7439-96-5	Manganese		1 Dust & Fume		3 Fume
7440-21-3	Silicon		10		
13463-67-7	Titanium Dioxide		10		
1317-65-3	Calcium Carbonate		10		
7631-86-9	Silicon Dioxide		2 Dust		
12030-97-6	Potassium Titanate		None		
12034-34-3	Sodium Titanate		None		
68476-25-5	Feldspar		5		
1309-38-2	Iron Oxide		10		
7782-42-5	Graphite		3		
1344-28-1	Aluminium Oxide		10		
1312-76-1	Potassium Silicate		2		
1344-09-8	Sodium Silicate		2		
9004-34-6	Cellulose		10		

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

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

**RESPIRATORY PROTECTION:** Use 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.

**EYE PROTECTION:** Wear helmet or use face shield with filter lens for open arc welding processes. 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. 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 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

**Engineering controls:** No further relevant information available.

#### 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>	Metal Rod/Wire	<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 Applicable	<b>Auto Igniting</b>	Not Available
<b>Melting point/range</b>	Not Available	<b>Solubility water</b>	Not Applicable
<b>Vapour Pressure, mmHg@980°C</b>	Not Available	<b>Flash Point</b>	Not Available
<b>Vapour Density</b>	Not Available	<b>Density at 20°C (68°F)</b>	Not Available
<b>Boiling Point &amp; boiling range</b>	Not Available	<b>Evaporation Rate</b>	Not Available
<b>Freezing/Melting Point</b>	Not Available	<b>Specific Gravity @200C (water = 1)</b>	Not Available

## 10 Stability and reactivity

**GENERAL:** Welding consumables applicable to this sheet are 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.

**STABILITY:** This product is stable under normal conditions.

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

Brazing fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being joined, the process, procedure and filler metals and flux 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 joined (such as paint, plating, or galvanizing), the number of operators and the volume of the worker area, the quality and amount of ventilation, the position of the operator's head with respect to the fume and fumes from chemical fluxes used in some brazing operations. When the wire or rod is consumed, the fume and gas decomposition products generated are different in percent 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 Section 3, plus those from the base metal and coating, etc., as noted above.

## 11 Toxicological information

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
7439-89-6	Iron			
7439-96-5	Manganese	9mg/kg Rat		
7440-21-3	Silicon	3160mg/kg Rat		
13463-67-7	Titanium Dioxide		0.1mg/kg Rat	
1317-65-3	Calcium Carbonate	N/A		
7631-86-9	Silicon Dioxide			>200gm Rat
12030-97-6	Potassium Titanate	N/A		
12034-34-3	Sodium Titanate	N/A		
68476-25-5	Feldspar	N/A		
1309-38-2	Iron Oxide	N/A		
7782-42-5	Graphite	N/A		
1344-28-1	Aluminium Oxide	N/A		
1312-76-1	Potassium Silicate	N/A		
1344-09-8	Sodium Silicate	1960mg/kg Rat	>4640mg/kg Rabbit	
9004-34-6	Cellulose	>5mg/kg Rat	>2mg/kg Rabbit	>5800mg Rat

### 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. **Aluminium Oxide** - Irritation of the respiratory system. **Calcium Oxide** - Dust or fumes may cause irritation of the respiratory system, skin and eyes. **Chromium** - Inhalation of fume with chromium (VI) compounds can cause irritation of the respiratory tract, lung damage and asthma-like symptoms. Swallowing chromium (VI) salts can cause severe injury or death. Dust on skin can form ulcers. Eyes may be burned by chromium (VI) compounds. Allergic reactions may occur in some people. **Fluorides** - Fluoride compounds evolved may cause skin and eye burns, pulmonary Edema and bronchitis. **Iron, Iron Oxide** - None are known. Treat as nuisance dust or fume. **Magnesium, Magnesium Oxide** - Overexposure to the oxide may cause metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure. **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. **Mica** - Dust may cause irritation of the respiratory system, skin and eyes. **Molybdenum** - Irritation of the eyes, nose and throat. **Nickel, Nickel Compounds** - Metallic taste, nausea, tightness in chest, metal fume fever, allergic reaction. **Potassium Silicate** - Dust or fumes may cause irritation of the respiratory system, skin and eyes. **Silica (Amorphous)** - Dust and fumes may cause irritation of the respiratory system, skin and eyes. **Sodium Silicate** - Dust or fumes may cause irritation of the respiratory system, skin and eyes. **Strontium Compounds** - Strontium salts are generally non-toxic and

are normally present in the human body. In large oral doses, they may cause gastrointestinal disorders, vomiting and diarrhoea. **Titanium Dioxide** - Irritation of respiratory system.

**LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS: Welding Fumes** - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis." Studies have concluded that there is sufficient evidence for ocular melanoma in welders. **Aluminium Oxide** - Pulmonary fibrosis and emphysema. **Calcium Oxide** - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. **Chromium** - Ulceration and perforation of nasal septum. Respiratory irritation may occur with symptoms resembling asthma. Studies have shown that chromate production workers exposed to hexavalent chromium compounds have an excess of lung cancers. Chromium (VI) compounds are more readily absorbed through the skin than chromium (III) compounds. Good practice requires the reduction of employee exposure to chromium (III) and (VI) compounds. **Fluorides** - Serious bone erosion (Osteoporosis) and mottling of teeth. **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 (Fe<sub>3</sub>O<sub>4</sub>) are not regarded as fibro genic materials. **Magnesium, Magnesium Oxide** - No adverse long term health effects have been reported in the literature. **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 behavioural 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. **Mica** - Prolonged overexposure may cause scarring of the lungs and pneumoconiosis characterized by cough, shortness of breath, weakness and weight loss. **Molybdenum** - Prolonged overexposure may result in loss of appetite, weight loss, loss of muscle coordination, difficulty in breathing and anaemia. **Nickel, Nickel Compounds** - Lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. **Potassium Silicate** - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. **Silica (Amorphous)** - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential. **Sodium Silicate** - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. **Strontium Compounds** - Strontium at high doses is known to concentrate in bone. Major signs of chronic toxicity, which involve the skeleton, have been labelled as "strontium rickets". **Titanium Dioxide** - Pulmonary irritation and slight fibrosis.

**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, If irritation or flash burns develop after exposure, consult a physician.

## 12 Ecological information

CAS #	Ingredient	Result	Species	Exposure
7439-89-6	Iron	Not Available		
7439-96-5	Manganese	>3.6mg/L > 1.6mg/L	LC50 Fish, mg/l EC50 Crustacea, mg/l	96 Hours 48 Hours
7440-21-3	Silicon	Not Available		
13463-67-7	Titanium Dioxide			
1317-65-3	Calcium Carbonate	>100%	LC50 Fish, mg/l	96 Hours
7631-86-9	Silicon Dioxide	Not Available		
12030-97-6	Potassium Titanate	Not Available		
12034-34-3	Sodium Titanate	Not Available		
68476-25-5	Feldspar	Not Available		
1309-38-2	Iron Oxide	Not Available		

7782-42-5	Graphite	Not Available		
1344-28-1	Aluminium Oxide	Not Available		
1312-76-1	Potassium Silicate	>146mg/L >146mg/L	LC 50 Fish EC50 Daphnia Magna	48 Hours 24 Hours
1344-09-8	Sodium Silicate	1108mg/L 1700mg/L	LC50 Fish EC50 Daphnia Magna	96 Hours 48 Hours
9004-34-6	Cellulose	Not Available		

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.

**Ecotoxicity:** 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.

**Persistence and Degradability:** No data is available on the degradability of this product

**Bioaccumulative Potential:** No data is available on the degradability of this product

**Mobility in soil:** No data is available on the degradability of this product

**Other adverse effects:** No data is available on the degradability of this product

### 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:** Cut Rod

**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,

#### **STATEMENT OF LIABILITY-DISCLAIMER**

To the best of the Harris Products Group knowledge, the information and recommendations contained in this publication are reliable and accurate as of the date prepared. However, accuracy, suitability, or completeness are not guaranteed, and no warranty, guarantee, or representation, expressed or implied, is made by Harris Products Group. as to the absolute correctness or sufficiency of any representation contained in this and other publications; Harris Products Group assumes no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this and other publications, or that other or additional measures may not be required under particular or exceptional conditions or circumstances. Data may be changed from time to time.

[ End of SDS ]