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## Safety Data Sheet

### 1 IDENTIFICATION

#### Product identifier

**Trade name:** Stay Clean® Liquid Soldering Flux

**Other means of identification:** Liquid Flux

SDS # 0100

#### Recommended use and restriction on use

**Recommended use:** Metal Soldering Operations

**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 is a clear, colourless liquid, possessing a slight, sweet odour. This material is acidic and can irritate and burn the skin, eyes, and any other contaminated tissue. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals. Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding.

#### GHS Classification(s)

Acute Toxicity - Oral: Category 4

Acute Toxicity - Inhalation: Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity, single exposure: Category 1 (optic nerve)

Specific target organ toxicity, single exposure: Category 3 (respiratory tract irritation)

#### Label elements

##### Signal word

**DANGER**

#### Hazard pictograms



**Hazard Statement(s)**

<b>H302</b>	Harmful if swallowed.
<b>H332</b>	Harmful if inhaled
<b>H314</b>	Causes severe skin burns and eye damage
<b>H335</b>	May cause respiratory irritation
<b>H371</b>	May cause damage to organs

**Prevention Statement(s):**

<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.
<b>P271</b>	Use only outdoors or in a well ventilated area.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P264</b>	Wash thoroughly after handling.

**Response statement(s):**

<b>P301 + P330 + P331</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
<b>P303 + P361 + P353</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
<b>P304 + P340</b>	INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
<b>P305 + P351 + P338.</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P308 + P313.</b>	IF exposed or concerned: Get medical advice/ attention
<b>P310</b>	Immediately call a POISON CENTER or doctor/physician
<b>P321</b>	Specific treatment is advised - see first aid instructions.
<b>P363</b>	Wash contaminated clothing before reuse.

**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:**

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.

Sustances/Mixtures		
CAS	Ingredient	Proportion
12125-02-9	Ammonium Chloride	5 - 25%
7646-85-7	Zinc Chloride	<30%
7647-01-0	Hydrochloric Acid (as Hydrogen Chloride)	<5%
67-56-1	Methyl Alcohol	<5%
7732-18-5	Water	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.

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## 4 First-aid measures

### Description of first aid measures

**General information:** If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

#### Skin contact:

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control centre immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

#### Eye contact:

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately.

#### Ingestion:

For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Information for doctor:** Treat Symptomatically. Keep victim under observation. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Pulmonary function tests, chest X-rays, and nervous system evaluations may prove useful. Consultation with an ophthalmologist is recommended if eye exposure leads to tissue damage. In case of shortness of breath, give oxygen. Symptoms may be delayed.

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

Symptoms of inhalation over-exposure may include sore throat, choking, coughing, difficulty breathing. Lung damage may occur after severe inhalation exposures. Depending on the duration and concentration of over-exposure, skin or eye contact with this product can irritate and burn contaminated tissue. Ingestion overexposure may be harmful or fatal. Prolonged or repeated inhalation over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration. Dermatitis, other skin disorders, and respiratory conditions may be aggravated by over-exposure to this product.

#### 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.

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## 5 Fire-fighting measures

### Extinguishing media

Use an extinguishing agent suitable for the surrounding fire. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>). Halons.

### Special hazards arising from the substance or mixture

This product is acidic and presents a contact hazard to firefighters. During a fire, irritating and toxic gases (e.g., carbon monoxide, carbon dioxide, hydrogen chloride, nitrogen and zinc oxides, and ammonia) may be generated.

**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 so without risk.

Use standard firefighting procedures and consider the hazards of other involved materials.

No unusual fire or explosion hazards noted. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals.

**Additional information:**

This product must be substantially preheated before ignition can occur. If involved in a fire, this product may decompose to produce irritating vapours and toxic gases, including hydrogen chloride and ammonia.

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. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Environmental precautions:**

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

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

This product is miscible in water.

**Large Spills:** Stop the flow of material, if this is without risk. Use water spray to reduce vapours or divert vapour cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

**Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**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 locked up. Store in corrosive resistant container with a resistant inner liner. Keep container tightly closed. Store in a well-ventilated place. Keep in cool, dry location far from heat source and flame. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

**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.

The American Governmental Congress of Industrial Hygienists (ACGIH) however recommends a Threshold Limit Value (TLV) Time Weighted Average (TWA) of 5 mg/m<sup>3</sup> for welding fume, on the assumption that there are no highly toxic constituents.; However, in Australia, there is no specific exposure standard for welding fume This is due to the fume being a combination of the metals and filler material being molten together along with cleaning and fluxing agents present. Each metal or material within the process of welding will generally have its own exposure standard.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
12125-02-9	Ammonium Chloride (Fume)		10		20
7646-85-7	Zinc Chloride (Fume)		1		2
7647-01-0	Hydrochloric Acid (as Hydrogen Chloride)	5 Peak Limitation	7.5 Peak Limitation		
67-56-1	Methyl Alcohol	200	262	250	328

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:**

The most significant routes of over-exposure for this product are by contact with skin, eye contact, or inhalation of mists or sprays generated by this product.

**Engineering controls and ventilation:** Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Exhaust directly to the outside, taking necessary precautions for environmental protection. Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used.

**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 neoprene or rubber gloves for routine industrial use.

**Eye protection:**

Safety glasses or goggles. Face shields may be needed if operations generate splashes or sprays.

**Body protection:** None needed for normal circumstances of use. Use body protection appropriate for task (i.e., apron, coveralls, and chemically resistant boots).



## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

Appearance	Clear Colourless	Physical State	Liquid
Odour	Slightly Sweet	Flammability	Not Available
Odour Threshold	Not Available	Flash Point	Not Flammable
pH	Acidic	Auto Igniting	Not Available
Melting point/range	Not Available	Solubility water	Slightly soluble
Vapour Pressure, mmHg@980°C	Not Available	Flash Point	Not Available
Vapour Density	4 (air = 1)	Density at 20°C (68°F)	Not Applicable
Boiling Point & boiling range	Not Available	Evaporation Rate	>1 (nBuAc = 1)
Freezing/Melting Point	Not Available	Specific Gravity @200C (water = 1)	Not Available

## 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:** No dangerous reaction known under conditions of normal use.

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

**Incompatible materials:** Acid, alkalis and their carbonates, hydrogen cyanide, interhalogens, ammonium nitrate, potassium chlorate, lead and silver salts. Strong oxidizing agents. Amines. Do not mix with other chemicals. This product is neither flammable nor reactive under normal circumstances; however, it may generate flammable hydrogen gas upon contact with metals.

**Hazardous decomposition products:** Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Ammonia. Hydrogen Chloride (HCl). Zinc oxides.

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
12125-02-9	Ammonium Chloride (Fume)	1300mg/kg Mouse	30 mg/kg Rat	
7646-85-7	Zinc Chloride (Fume)	329mg/kg Mouse	3.69mg/kg Rat	
7647-01-0	Hydrochloric Acid (as Hydrogen Chloride)	900 mg/kg Rabbit		LC50 – 3124mg/l, 1 hour, Rat
67-56-1	Methyl Alcohol	6200mg/kg Rat		22500 ppm, 8 hours Rat

### Information on toxicological effects:

#### Acute toxicity:

Harmful if inhaled. Harmful if swallowed. May cause respiratory irritation.

#### Skin Contact:

Causes severe skin burns. Depending on the duration and concentration of over-exposure, skin contact with this product can irritate and burn the skin. Repeated or prolonged over-exposure to this product may result in dermatitis (red, dry, itchy skin) and ulceration. Methanol (a component of this product) is readily absorbed through the skin. Because Methanol is a minor component of this product, skin absorption is not anticipated to be a significant route of over-exposure.

#### Eye Contact:

Depending on the duration and concentration of over-exposure, eye contact with this product can irritate and burn the eyes. Eye over-exposure can cause pain, tearing, and redness. Severe eye over-exposure may cause blindness. Causes serious eye damage.

**Ingestion:** Harmful if swallowed. Causes digestive tract burns. If this flux is ingested, nausea, vomiting, and diarrhoea may occur (depending on the amount of the product swallowed). Severe ingestion exposures may result in damage to the tissues of the gastrointestinal system, and death.

#### Respiratory sensitisation:

Not a respiratory sensitizer.

It has been reported that a worker developed asthmatic symptoms after performing soldering work with a flux containing Ammonium and Zinc Chlorides (components of this product).

**Skin Sensitisation:** This product is not expected to cause skin sensitisation

#### Aspiration:

Not a respiratory sensitizer.

#### Inhalation:

Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs by inhalation. If vapors, mists, or sprays of this product are inhaled, they can irritate and burn the nose, throat, and respiratory system. Symptoms of inhalation over-exposure may include sore throat, choking, coughing, and difficulty breathing. Prolonged or repeated over-exposure may cause burns and ulcers to the nose and throat, dental erosion, bronchitis, and stomach pains. It has been reported that a worker developed asthmatic symptoms after performing soldering work with a flux containing Ammonium and Zinc Chlorides (components of this product). It has been reported that inhalation of Methanol (a component of this product) vapours in high concentrations can cause blindness. Severe inhalation overexposure may cause pulmonary oedema (a life-threatening accumulation of fluid in the lungs) or pneumonitis. Symptoms of pulmonary oedema (e.g., shortness of breath, chest pains) can be delayed for several hours after exposure. Severe inhalation of vapours or fumes (as may occur if individuals are exposed in poorly ventilated areas, such as confined spaces) may be harmful.

#### Carcinogenicity:

Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B).

#### STOT – single exposure:

Causes damage to organs (optic nerve). May cause respiratory irritation.

**STOT – repeated exposure:**

Not classified

**12 Ecological information**

Ingredient	Result	Species	Exposure
12125-02-9 Ammonium Chloride (Fume)	LC50 109 mg/l	Fish	48 Hours
7646-85-7 Zinc Chloride (Fume)	0.101-0.197 mg/l	Fish	96 Hours
	0.1511-0.2782 mg/l	Crustacea	48 Hours
7647-01-0 Hydrochloric Acid (as Hydrogen Chloride)	LC50 282 mg/l	Fish	96 Hours
67-56-1 Methyl Alcohol	15400-29400mg/l	Fish	96 Hours

**Ecotoxicity:** Very toxic to aquatic life with long lasting effects.

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

**Bioaccumulative Potential:** Methanol (CAS 67-56-1) = -0.77

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

**Other adverse effects:** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**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 classified as a 'Hazardous chemical' and Corrosive.

	LAND TRANSPORT ADG	SEA TRANSPORT IMDG/IMO	AIR TRANSPORT IATA/ICAO
UN-Number ADG, IMDG/IMO, IATA/ICAO	1760	1760	1760
UN proper shipping name ADG, IMDG/IMO, IATA/ICAO	CORROSIVE LIQUIDS, N.O.S. (ZINC CHLORIDE, HYDROCHLORIC ACID	CORROSIVE LIQUIDS, N.O.S. (ZINC CHLORIDE, HYDROCHLORIC ACID	CORROSIVE LIQUIDS, N.O.S. (ZINC CHLORIDE, HYDROCHLORIC ACID
Transport hazard class(es) ADG, IMDG/IMO, IATA/ICAO	 8	8	8
Packing group ADG, IMDG/IMO, IATA/ICAO	II	II	II
Environmental hazards:			



Marine pollutant:	YES
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. IB2, T11, TP2, TP27
Additional Information	Packaging exceptions – 154, Packaging non bulk – 202, Packaging bulk – 242. DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.
Hazchem code.	2X

## 15 Regulatory information

**Product Name:** Stay Clean® Liquid Soldering Flux

**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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[ End of SDS ]