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Safety Data Sheet

1 IDENTIFICATION

Product identifier

Trade name: Stay Clean Aluminium Flux – Organic Amine

Synonyms: Not Applicable

SDS # Version 0139

Recommended use and restriction on use

Recommended use: 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

Website: <http://www.ausweld.com.au>

Safety Data Sheet Questions: sales@hgea.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.

EMERGENCY OVERVIEW: This product is a viscous, amber liquid with a strong ammonia odour. This product is a primary irritant and can be mildly to moderately irritating to contaminated tissue (depending on the concentration and duration of contact); prolonged contact may result in tissue damage and skin sensitization. This product must be substantially pre-heated before ignition can occur. Thermal decomposition of this product will produce toxic fumes and vapours or zinc oxides, fluoride compounds, carbon monoxide, carbon dioxide and oxides of nitrogen and tin. This product is not reactive. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of over-exposure for this product are inhalation of fumes generated during use and contact with skin and eyes.

INHALATION: Inhalation of large amounts of particulates generated by these products during soldering operations may be physically irritating and cause deposits of dust in nasal passages. Heating of this product during soldering operations will result in irritating fumes from the Triethanolamine component of this product. Symptoms of exposure to these fumes may include coughing, and irritation of throat and nose. In addition, metal fume fever can be caused by inhalation of zinc oxide fumes formed in air from soldering or heating of zinc metal and zinc oxide. Symptoms of metal fume fever include flu-like symptoms, metallic taste, fever, chills, cough, weakness, chest pain, muscle pain, cardiac abnormalities, and increased white blood cell count. Damage to lungs can occur. Some workers develop a short-term resistance after continuous, repeated

exposure to zinc oxide fumes and subsequent symptoms of metal fume fever. This resistance to the effects of metal fume fever produced by Zinc Oxide is quickly lost after short absence from exposure. Thermal decomposition of the Ammonium Fluoborate component of this product can evolve fluoride compounds, which are potentially damaging to tissues of the respiratory system, and in high concentration can cause hypercalcemia, a condition of excess calcium in the blood.

CONTACT WITH SKIN or EYES: This product is mildly to moderately irritating to the skin. Prolonged skin contact can result in tissue damage. Triethanolamine, a component of this product, is a skin sensitizer. When heated to decomposition, this product can evolve fluoride compounds, which, in high concentration can cause burns, penetrating to bone. Repeated or prolonged exposures to the flux, especially in high concentrations, can cause allergy-like symptoms (e.g., rashes, welts) and dermatitis (dry, red, cracked skin). If the flux enters the eyes, mild irritation may occur and result in redness and watering. Severe contact exposures may result in damage to the cornea and other eye tissues.

INGESTION: If this flux is ingested, nausea, vomiting, and diarrhea may occur (depending on the amount of the product swallowed). Severe ingestion exposures may result in damage to the tissues of the gastrointestinal system, shock, cardiac disturbances, vasomotor depression (depression of the contraction and dilation of blood vessels) hypocalcemia, and death.

OTHER HEALTH EFFECTS: Repeated or chronic exposure to this product via inhalation and ingestion may result in damage to the kidneys and liver (based on animal studies), due to the presence of Triethanolamine.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Symptoms associated with over-exposure to this product are as follows:

ACUTE: The chief acute health hazards associated with this product would be the potential for mild to moderate irritation of contaminated skin and eyes. Prolonged contact to product or to decomposition products may cause burns and in extreme cases, may result in fluoride poisoning (hypercalcemia). Though unlikely to occur during occupational use, ingestion of large quantities may be fatal.

CHRONIC: Chronic skin over-exposure to this product during soldering operations may produce dermatitis (red, inflamed skin). The product contains a skin sensitizer; repeated or prolonged exposures to the flux, especially in large quantities can cause allergy-like symptoms (i.e., rashes, welts). Chronic overexposure to this product via ingestion or inhalation may result in damage to the kidneys and liver. Refer to Section 11 (Toxicological Information) for additional data on the components of this product.

Classification of the substance or mixture

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

GHS Classification(s) Acute Toxicity: Eyes, Skin, Respiratory System
Chronic: Skin, Liver, Kidneys, Bones

Label elements

Signal word DANGER

Hazard pictograms



GHS05



GHS06



GHS08

Hazard Statement(s)

H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H360 May damage fertility or the unborn child.

Prevention Statement(s):

P202 Do not handle until all safety precautions have been read and understood.
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.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s):

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
P304 + P340 INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313. IF exposed or concerned: Get medical advice/ attention
P310 Immediately call a POISON CENTER or doctor/physician
P321 Specific treatment is advised - see first aid instructions.
P363 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
102-71-6	Triethanolamine	30-60%
111-41-1	Aminoethyl Ethanolamine	35%
13826-83-0	Ammonium Fluoborate	20%
7440-31-5	Tin, Metal	10%
1314-13-2	Zinc Oxide	10%
7440-66-6	Zinc	5%

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

Victims of chemical exposure must be taken for medical attention, if adverse health effects occur. Rescuers should be taken for medical attention, if necessary. Take copy of label and SDS to health professional with victim.

SKIN EXPOSURE: In the event of skin-over-exposure, rinse affected area with a soap and water solution. If skin contact results in irritation, the minimum flushing is for 15 minutes. Victim must seek medical attention if adverse health effects occur, or if skin contact has resulted in a thermal burn.

EYE EXPOSURE: If this product enters the eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek medical attention if adverse health effects occur, or if eye contact has resulted in a thermal burn.

INHALATION: If this product is inhaled, remove victim to fresh air. Have victim blow nose.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth with water, if conscious. If victim vomits naturally, position head lower than chest to prevent aspiration into the lungs. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

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.

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

Water Spray: Yes (for cooling)	Carbon Dioxide: Yes
Halon: Yes	Foam: Yes
Dry Chemical: Yes	Other: Any 'ABC' Class

Special hazards arising from the substance or mixture

This product is a primary irritant and presents a potential contact hazard to firefighters. This product must be substantially preheated before ignition can occur. During a fire, irritating and toxic gases (i.e. carbon monoxide, carbon dioxide, fluoride and zinc compounds, oxides of tin and nitrogen) may be generated.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

Advice for firefighters

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed containers if it can be done without risk to firefighters. If possible, firefighters should control run-off water to prevent environmental contamination. Rinse contaminated equipment with soapy water before returning such equipment to service.

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after using this product. Do not eat, drink, smoke, or apply cosmetics while handling this product.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Standard safety practices associated with soldering operations should be followed when using this product. Open containers slowly, on a stable surface. Avoid the accidental exposure of this material to open flames, hot surfaces, or other sources of ignition.

Store this product in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. This product should not be stored in glass or other silicate-based containers, due to the presence of Ammonium Fluoborate. Store away from incompatible chemicals (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage to ensure they are properly labelled and not damaged.

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

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.

Environmental precautions:

Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up:

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Dispose contaminated material as waste according to item 13.

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

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

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 a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

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

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

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/m³ 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 ³	STEL ppm	STEL mg/m ³
102-71-6	Triethanolamine		NE		
111-41-1	Aminoethyl Ethanolamine		NE		
13826-83-0	Ammonium Fluoborate		2.5		
7440-31-5	Tin, Metal		2		
1314-13-2	Zinc Oxide		5 (fume) 10 (dust)		10 (fume)
7440-66-6	Zinc		5 (fume) 10 (dust)		10 (fume)

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. Personal air monitoring is generally undertaken over a representative period of time undertaken to Australian Standard AS 3640-2009 Workplace atmospheres – Method for sampling and gravimetric determination of inhalable dust using IOM sampling heads with flow rate of 2.0 L/min.

Keep away from foodstuffs, beverages and feed.

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:



Leather or welding gloves.

Suitable gloves can be recommended by the glove supplier.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection:



Wear glasses or face shield with appropriate shading for brazing operations.

Body protection: Protective work clothing



9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:	Viscous Liquid
Colour:	Amber
Odour:	Strong Ammonia Odour
Odour Threshold:	Not applicable
pH-value:	Not applicable

Change in condition

Melting point/Melting range:	Not established
Boiling point/Boiling range:	Not established

Flash point:	Not Applicable
Evaporation rate:	Not Available
Flammability (solid, gaseous):	Not Determined

Explosion Limits:

Lower:	Not Determined
Upper:	Not Determined

Vapour Pressure:	Not applicable
Relative Density:	>1.0
Specific Gravity:	Not established
Vapour Density:	Not Available
Auto-Ignition:	

Decomposition Temp:	Not Available
Solubility in/Miscibility with water:	Complete Solubility

Partition coefficient (n-octanol/water):	Not applicable
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10 Stability and reactivity

Reactivity: Carefully review all information provided in sections 10 below

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: Avoid exposing this product to incompatible materials

Incompatible materials: This product is not compatible with strong oxidizing agents, strong acids, and strong bases. Due to the presence of Ammonium Fluoborate, this product is incompatible with glass or other silicate-based substances.

DECOMPOSITION PRODUCTS: Carbon oxides, a variety organic molecules, tin compounds, zinc oxides, nitrogen oxides and ammonia.

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	Dermal Toxicity LD50	Inhalation Toxicity LD50
102-71-6	Triethanolamine	Rat >5000mg/kg	Rabbit >2000mg/kg	
111-41-1	Aminoethyl Ethanolamine	Rat 3000mg/kg	Rabbit >2000mg/kg	
13826-83-0	Ammonium Fluoborate	Not Available		
7440-31-5	Tin, Metal	Rat >2000mg/kg	Rat >2000mg/kg	Rat > 4.75 mg/l
1314-13-2	Zinc Oxide	Rat >2000mg/kg	Rat >2000mg/kg	Rat > 1.79 mg/l dust, mist
7440-66-6	Zinc	Rat >2000mg/kg		Rat > 5.41 mg/l dust, mist

Information on toxicological effects:

IRRITANCY OF PRODUCT: This product is mildly to moderately irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: The Triethanolamine component of the product is a skin sensitizer; subsequent contact with very small amounts of this product may result in allergic reaction in susceptible individuals, causing symptoms such as rashes, redness and welts.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components are on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

Embryotoxicity This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

Sensitization:

No sensitizing effects known.

STOT – single exposure:

Over exposure to fumes may result in irritation of the nose and throat, nausea and headache.

STOT – repeated exposure:

Repeated exposure to fluorides may result in discolouration of teeth; as well as lung, kidney, liver, ligament and bone (osteosclerosis, skeletal fluorosis) damage. Repeated exposure to borates may result in skin rash, bronchitis and kidney damage.

12 Ecological information

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product may be harmful to aquatic lifeforms, depending on the quantity and duration of over-exposure. The following aquatic toxicity data are available for the components of this product:

Ingredient	Result	Species	Exposure
Triethanolamine	No Data Available		
Aminoethyl Ethanolamine	No Data Available		
Ammonium Fluoborate	No Data Available		
Tin, Metal	> 0.012 mg/l	Pimephales promelas	96h
Zinc Oxide	31.12 mg/kg Oral	Rat	13 weeks
Zinc	0,439 mg/l	Fish	96h
	0,416 mg/l	Ceriodaphnia	48h
	0,05 mg/l	Algae	72h
	0,35 ng/l	Bacteria	4h

Effect of Material On Plants or Animals: This product may be harmful to plant and animals, depending on the quantity and duration of over-exposure.

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:**

Reuse where possible. Alternatively, absorb with sand or similar and dispose of to an approved landfill site.

Contact the manufacturer/supplier for additional information (if required).

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport Information

	LAND TRANSPORT ADG	SEA TRANSPORT IMDG/IMO	AIR TRANSPORT IATA/ICAO
UN-Number ADG, IMDG/IMO, IATA/ICAO	3077	3077	3077
UN proper shipping name ADG, IMDG/IMO, IATA/ICAO	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.	TOXIC LIQUID, CORROSIVE, INORGANIC, N.O.S.
Transport hazard class(es) ADG, IMDG/IMO, IATA/ICAO	6.1,8,9	6.1,8,9	6.1,8,9
Packing group ADG, IMDG/IMO, IATA/ICAO	III	III	III
Environmental hazards: Marine pollutant:	No information provided Yes		
Special precautions for user			
Additional Information			
Hazchem code.	2X		
GTEPG	6J6		
EMS	F-A, S-B		

15 Regulatory information

Product Name: L T Silver Brazing 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)].

Hazard Codes:

C Corrosive

T Toxic

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/m³ (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]