Harris Products Group
Since 1905

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Safety Data Sheet

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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1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **STAY-CLEAN® PASTE SOLDERING FLUX** Petroleum Gel
CHEMICAL NAME/CLASS: Mixture
SYNONYMS: Not Applicable
PRODUCT USE: Metal Soldering Operations
DOCUMENT NUMBER: 0136
SUPPLIER/MANUFACTURER'S NAME: **HARRIS Products Group**
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2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL			OTHER
			TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
Petrolatum	8009-03-8	< 80	NE	NE	NE	NE	NE	NE
Zinc Chloride The exposure limits provided are for "Zinc Chloride Fumes".	7646-85-7	< 40	1	2	1	2 (Vacated 1989 PELs)	50	NIOSH RELs: TWA =1 STEL = 2 Carcinogen: EPA-D
Ethylene Glycol	107-21-1	<15	NE	100 (ceiling, aerosol), A4 (Not Classifiable as a Human Carcinogen)	NE	NE	NE	DFG MAKs: TWA = 26 (Danger of Cutaneous Absorption) PEAK = 2•MAK 5 min., momentary value DFG MAK Pregnancy Risk Classification: C ,Carcinogen: TLV-A4
Ammonium Chloride The exposure limits provided are for "Ammonium Chloride Fumes".	12125-02-9	<10	10	20	10 (Vacated 1989 PELs)	20 (Vacated 1989 PELs)	NE	NIOSH RELs: TWA =10 STEL = 20
Water	7732-18-5	Balance	NE	NE	NE	NE	NE	NE

NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is an opaque, odorless, tan/gold gel. This product can be slightly irritating to contaminated tissue. This product must be substantially pre-heated before ignition can occur. This product is not reactive. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

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.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of over-exposure for this product are inhalation of fumes and contact with skin and eyes. The symptoms of overexposure to this product, via route of entry, are as follows:

INHALATION: Inhalation is not anticipated to be a significant route of over-exposure to this product. In the unlikely event this product is inhaled, mild irritation of the nose may occur. Symptoms of such over-exposure may include nasal congestion and sneezing.

Though not anticipated to occur during use of this paste flux when the proper precautions are taken, extreme inhalation over-exposure to Zinc Chloride (a component of this product) can have adverse effects on the lungs (i.e. causing pulmonary edema and pneumonitis, life-threatening lung conditions). Inhalation of Zinc Chloride fumes can cause metal fume fever. Symptoms of such over-exposures include headache, fever, rapid breathing, sweating and pains in legs and chest. Severe inhalation of vapors or fumes (as may occur if individuals are exposed in poorly ventilated areas, such as confined spaces) may be harmful.

CONTACT WITH SKIN or EYES: This product may be slightly irritating to the skin. Though this paste flux is not classified as a sensitizer, Petrolatum (the main component of this product) may cause allergic skin reactions in hypersensitive individuals. If the paste flux enters the eyes, mild irritation may occur and result in redness and watering.

Note: If the product is heated before use, the temperature of the heated product will be above 37°C (100°F); skin or eye contact with the heated product can result in thermal burns.

SKIN ABSORPTION: Skin absorption is not a significant route of over-exposure to the components of this product.

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, and death.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	1
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For routine applications.

See Section 16 for Definition of Ratings

INJECTION: Though not a likely route of occupational exposure for this product, injection of this product (via punctures or lacerations in the skin) may cause local reddening, tissue swelling, and discomfort.

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 irritation of contaminated tissue. Though unlikely to occur during occupational use, ingestion of large quantities may be fatal.

CHRONIC: Dermatitis may result in chronic skin contact to this product. Refer to Section 11 (Toxicological Information) for additional data on this product's components.

TARGET ORGANS: ACUTE: Eyes; skin. CHRONIC: Skin.

4. 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 MSDS 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.

4. FIRST-AID MEASURES (Continued)

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 swallowed call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if person is unconscious, having convulsions, or not breathing.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin disorders may be aggravated by prolonged over-exposures to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT (ASTM D-92): > 198°C (>390°F) [for Petrolatum]
AUTOIGNITION TEMPERATURE: Not determined.
FLAMMABLE LIMITS (in air by volume, %):
Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

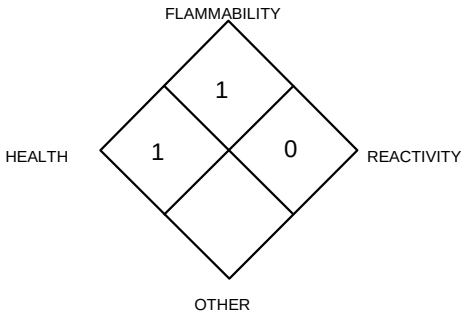
FIRE EXTINGUISHING MATERIALS:
Water Spray: YES (for cooling) Carbon Dioxide: YES
Halon: YES Foam: YES
Dry Chemical: YES Other: Any "B" Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product must be substantially preheated before ignition can occur. This product can float on water and may travel to distant locations. During a fire, irritating and toxic gases (i.e. carbon monoxide, carbon dioxide, and hydrogen chloride) may be generated.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Not applicable.

NFPA RATING



See Section 16 for Definition of Ratings

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

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a large, uncontrolled release, clear the affected area and protect people. In the event of a non-incidental release of this product, minimum Personal Protective Equipment should be **Level D: gloves (rubber gloves over latex gloves), safety goggles, and appropriate body protection. Level B Protection (which includes Self-Contained Breathing Apparatus) during spill response situations in which the oxygen level is below 19.5% or is unknown.** Absorb spilled paste flux with polypads or other suitable absorbent. Rinse area with soap and water solution. If the heated product has been spilled, allow the material to cool before clean-up procedures begin. Decontaminate the area thoroughly. Place all spilled residues in a suitable container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations, or the appropriate Standards of Canada and its Provinces (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

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 welding, brazing and soldering operations should be followed when using this product.
STORAGE AND HANDLING PRACTICES: 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. 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 labeled and not damaged.

7. HANDLING and STORAGE (Continued)

Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See the Australian Standard - AS 1674.1 – 1997 – Reconfirmed 2016. Safety in Welding and Allied Processes Australia.

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.

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are normally required when using this product. Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: No respiratory protection is normally required when using this product. Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Respiratory Protection is recommended to be worn during welding operations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). For additional information, the NIOSH recommended respiratory protection guidelines for Zinc Chloride Fumes are provided, as follows:

CONCENTRATION	**RESPIRATORY PROTECTION**
Up to 10 mg/m^3:	Dust, mist, and fume respirator or Supplied-Air Respirator (SAR).
Up to 25 mg/m^3:	Powered air-purifying respirator with dust, mist, and fume filter(s) or SAR operated in a continuous-flow mode.
Up to 50 mg/m^3:	Full-facepiece respirator with high-efficiency particulate filter(s), powered air-purifying respirator with tight-fitting facepiece and high-efficiency particulate filter(s), full-facepiece Self-Contained Breathing Apparatus (SCBA), or full-facepiece SAR.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Positive pressure, full-facepiece SCBA or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.
Escape:	Full-facepiece respirator with high-efficiency particulate filter(s) or escape-type SCBA.

EYE PROTECTION: Safety glasses or goggles. In the event, the heated product is used, a face-shield is recommended.

HAND PROTECTION: Wear butyl rubber, nitrile rubber, or polyfluorinated polyethylene gloves for routine industrial use.

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

9. PHYSICAL and CHEMICAL PROPERTIES

Unless otherwise specified, the following information is for Petrolatum, the main component of this product.

RELATIVE VAPOR DENSITY (air = 1): Not applicable.
SPECIFIC GRAVITY (water = 1): 0.815-0.88
SOLUBILITY IN WATER: Insoluble.
VAPOR PRESSURE: Not applicable.
ODOR THRESHOLD: Not applicable.
EVAPORATION RATE (nBuAc = 1): 1.5
FREEZING/MELTING POINT: 37-60°C (100-140°F)
BOILING POINT: Not applicable.
pH: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not applicable.

The following information is for the product:

APPEARANCE, ODOR AND COLOR: This product is an opaque, odorless, tan/gold gel.
HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance may act as a distinguishing characteristic of this product.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Carbon oxides, a variety organic molecules, hydrogen chloride, zinc oxides, nitrogen oxides and ammonia.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is not compatible with strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposing this product to incompatible materials.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following human toxicological data are available for the components of this product. Other data for animals are available but are not presented in this Material Safety Data Sheet.

ZINC CHLORIDE:
DNA Inhibition System (human, lymphocyte) = 0.360 mmol/L
TCLo (inhalation, man) = 4800 mg/m^3/ 30 minutes; pulmonary effects
TCLo (inhalation, human) = 4800 mg/m^3/ 3 hours

ETHYLENE GLYCOL:
DNA Inhibition System (human, lymphocyte) = 320 mmol/L
LDLo (oral, human) = 786 mg/kg
LDLo (oral, human) = 398 mg/kg; central nervous system, gastrointestinal, liver effects
TCLo (inhalation, human) = 10000 mg/m^3; eye and pulmonary effects
LDLo (unreported, man) = 1637 mg/kg

SUSPECTED CANCER AGENT: Components of this product are listed as follows:

ETHYLENE GLYCOL (Aerosol) ACGIH TLV-A4 (Not Classifiable as to Human Carcinogenicity)
ZINC CHLORIDE: EPA-D (Not Classifiable as to Human Carcinogenicity (inadequate human and animal evidence of carcinogenicity or no data available)

The other components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product may be slightly irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: Petrolatum (the main component of this product) may cause allergic skin reactions in hypersensitive individuals.

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. Animal mutation data are available for Ammonium Chloride, Ethylene Glycol, and Zinc Chloride (components of this product) and was obtained during clinical studies on specific animal tissues exposed to high doses of these compounds.

Embryotoxicity This product is not reported to produce embryotoxic effects in humans. Animal embryotoxic data are available for Ethylene Glycol and Zinc Chloride (components of this product).

Teratogenicity: This product is not reported to cause teratogenic effects in humans. Studies on test animals exposed to relatively high doses of Ethylene Glycol and Zinc Chloride (components of this product) indicate teratogenic effects.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans. Studies on test animals exposed to relatively high doses of Ethylene Glycol and Zinc Chloride (components of this product) indicate adverse reproductive effects.

A mutagen is a chemical, which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical, which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical, which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance, which interferes in any way with the reproductive process.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for the component of this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: The components of this product will slowly react with water, oxygen, and other substances to form a wide variety of inorganic compounds. The following environmental data are available for the components of this product:

ETHYLENE GLYCOL: Log K_{ow} = 1.36. The bioconcentration factor of Ethylene Glycol in fish was reported to be 10 after 3 days of exposure; this suggests that it will not bioconcentrate in fish. Biological Oxygen Demand, 0.47 g oxygen/ g Ethylene Glycol; Chemical Oxygen Demand - 1.29 g oxygen/ g Ethylene Glycol.

ZINC CHLORIDE: Water solubility: 432 g/ 100 mL (25°C), 614 g/ 100 mL (100°C). Zinc can persist indefinitely as a cation. Radioactive zinc (^{65}Zn) has been found to concentrate in plants and milk. Acute Hazard Level Threshold: For vegetables and other crops - 750 ppm (Zn).

12. ECOLOGICAL INFORMATION (Continued)

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. Specific data on test animals are available, but are not presented in this Material Safety Data Sheet.

EFFECT OF CHEMICAL ON AQUATIC LIFE: Because this product contains a petroleum-based material which can float on water, thereby depriving oxygen to impacted bodies of water, large releases of this product is may be harmful to aquatic plant and animal life. Additionally, odorless zinc poisoning causes inflamed gills in fish. Laboratory studies of Atlantic salmon, rainbow trout, carp, and goldfish have shown avoidance reactions by these fish to zinc in water. Additional aquatic toxicity information for the components of this product is as follows:

ETHYLENE GLYCOL:

LD_{50} (*Carassius auratus*, goldfish) = 5000 mg/L/24 hour modified ASTM D 1345

LC_{50} (*Poecilia reticulata*, guppies) = 49300 ppm/7 days

LC_{50} (rainbow trout) = 18,500 mg/L/96 hours

LC_{50} (rainbow trout) = 41000 mg/L/96 hours at 20 EC

LC_{50} (*Crangon crangon*, brown shrimp) = 100 mg/L 48 hours - aerated salt water

LC_{50} (*Carassius auratus*, goldfish) = 5000 mg/L/24 hours/ 20 EC/ static conditions

ETHYLENE GLYCOL:

Toxicity threshold, cell multiplication test (*Pseudomonas pudita,* bacteria) = 10,00 mg/L

Toxicity threshold, cell multiplication test (*Entosiphon sulcatum,* protozoan) = 10,00 mg/L

Toxicity threshold, cell multiplication test (*Uronema parduzi* Chatton-Lwoff, protozoan) = 10,00 mg/L

Toxicity threshold, cell multiplication test (*Chorella pyrenoidasa,* algae) = 180,000 mg/L; toxic

Toxicity threshold, cell multiplication test (*Microcystis aeruginosa,* algae) = 2,000 mg/L

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with regulations of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

U.S. EPA WASTE NUMBER: Not applicable to wastes consisting only of this product.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS (Per 49 CFR 172.101) BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not applicable.
HAZARD CLASS NUMBER and DESCRIPTION: Not applicable.
UN IDENTIFICATION NUMBER: Not applicable.
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Not applicable.

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 2000: Not applicable.

MARINE POLLUTANT: No component of this product is designated as a marine pollutant by the Department of Transportation (49 CFR 172.101, Appendix B).

TRANSPORT AUSTRALIA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This material is not considered as dangerous goods, per regulations of Transport AUSTRALIA.

15. REGULATORY INFORMATION

Product Name: Phosphorus/Copper Brazing Filler Metal

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 Codie 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 (ACGIIH)

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.

[End of SDS]