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Safety Data Sheet

1 IDENTIFICATION

Product identifier

Trade name: 505 Flux
Product size: Variable

Other means of identification: Inorganic Chloride/Mineral Oil Mixture
SDS Number: 03

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:
NEW ZEALAND
Harris Products Group
47 Edmundson St, Onekawa, Napier
New Zealand 4110
(06) 83405875
Safety Data Sheet Questions: 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
Website: http://www.harrisproductsgroup.com.au

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)

GHS Classification(s)
Health 1

Label elements
Signal word **DANGER**

Hazard pictograms

GHS05 

(Contd. on page 2)

Hazard Statement(s)
H314 Causes serious eye damage and skin burns.

Prevention Statement(s):
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves, protective clothing, and eye protection.

Response Statements:
P301+P330+P331 If swallowed: Rinse mouth. Do Not induce vomiting
P303+P361+P353 If on skin: Remove/Take off immediately all contaminated clothing. Rinse skin in water.
P304+P340 If inhaled: Remove person 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. Immediately call a poison centre.

Storage Statement(s): **P 405** Store Locked Up

Disposal Statement(s): **P501** Dispose of contents/container in accordance with relevant regulations.

Other Hazards None

Composition/information on ingredients

Chemical characterization: Mixtures
Description: Mixture of the substances listed below with nonhazardous additions

Dangerous components:		
CAS	Name	Proportion
7732-18-5	Water	85-90%
138-15-8	Glutamic Acid Hydrochloride	5-10%
57-13-6	Urea	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 “Hazardous Ingredients” should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

4 First-aid measures

Description of first aid measures
General information: Never give anything by mouth to an unconscious person. If exposed or concerned: Get medical advice/attention.

SKIN EXPOSURE: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Call a POISON CENTER or doctor if you feel unwell. Wash contaminated clothing before reuse.

EYE EXPOSURE: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

(Contd. on page 3)

INHALATION: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

INGESTION: Rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Most Important Symptoms and Effects Both Acute and Delayed
GENERAL: May be fatal if swallowed and enters airways. Causes severe skin burns and eye damage. May cause damage to organs through prolonged or repeated exposure. Harmful if swallowed. May cause respiratory irritation.
INHALATION: If vapours of this product are inhaled, irritation of the nose and respiratory system can occur.

SKIN CONTACT: Overexposure may be irritating to skin.

EYE CONTACT: Causes serious eye damage. Redness. Pain. Blurred vision. Severe burns.

INGESTION: May be fatal if swallowed and enters airways. Ingestion is not anticipated to be a route of occupational exposure for this product. 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, kidney failure and death.

CHRONIC SYMPTOMS: May cause damage to organs through prolonged or repeated exposure. Chronic ingestion may cause damage to the kidneys.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin, respiratory and liver or kidney disorders may be aggravated by prolonged over-exposures to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure. Provide oxygen, if necessary. 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. Prompt diagnosis and initiation of treatment, including ethanol therapy and hemodialysis is necessary to ameliorate the effects of Ethylene Glycol ingestion.

5 Fire-fighting measures

EXTINGUISHING MEDIA
SUITABLE EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire.

UNSUITABLE EXTINGUISHING MEDIA: Do not use a heavy water stream. Use of heavy stream of water may spread fire. Application of water stream to hot product may cause frothing and increase fire intensity.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE
FIRE HAZARD: Not flammable**.**

EXPLOSION HAZARD: Product is not explosive.

REACTIVITY: Hazardous reactions will not occur under normal conditions.

ADVICE FOR FIREFIGHTERS
PRECAUTIONARY MEASURES FIRE: Exercise caution when fighting any chemical fire.

FIREFIGHTING INSTRUCTIONS: Use water spray or fog for cooling exposed containers.

(Contd. on page 4)

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Hazardous Combustion Products: Upon thermal decomposition: irritating fumes and toxic gases (including hydrogen chloride, zinc oxides, carbon monoxide, carbon dioxide, and nitrogen oxides).

OTHER INFORMATION: Do not allow run-off from fire fighting to enter drains or water courses. Do not allow the product to be released into the environment.

REFERENCE TO OTHER SECTIONS

Refer to section 9 for flammability properties.

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 spill, clear the affected area, protect people, and respond with trained personnel. Incidental releases of this product can be cleaned-up by personnel wearing gloves and goggles (or safety glasses). In the event of a non-incidental release, minimum Personal Protective Equipment should be **Level B: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus.** Pick-up paste with polypad or other absorbent agent. Rinse area with a soap and water solution. Decontaminate the area thoroughly. Place all spilled residues in a suitable container and seal. Dispose of in accordance with applicable Australian local procedures or appropriate standards of Australia (see Section 13, Disposal Considerations).

PROTECTIVE EQUIPMENT: Equip clean-up crew with proper protection.

Emergency Procedures: Ventilate area. Eliminate ignition sources. Stop leak if safe to do so.

ENVIRONMENTAL PRECAUTIONS

Prevent entry to sewers and public waters. Notify authorities if paste enters sewers or public waters.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Methods for Cleaning Up: Absorb and/or contain spill with inert material, then place in suitable container. Do not take up in combustible material such as: saw dust or cellulosic material. Use only non-sparking tools.

REFERENCE TO OTHER SECTIONS

See Heading 8. Exposure controls and personal protection. For further information, refer to section 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

PRECAUTIONS FOR SAFE HANDLING

Additional Hazards When Processed: When heated to decomposition, emits toxic fumes. Flammable vapours may accumulate in the head space of closed systems. Container may remain hazardous when empty.

HYGIENE MEASURES: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash hands and forearms thoroughly after handling.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

(Contd. on page 5)

TECHNICAL MEASURES: Comply with applicable regulations. Use explosion proof equipment. Ground/bond container and receiving equipment. Prevent build-up of electrostatic charges (e.g., by grounding).
STORAGE CONDITIONS: Store in a well-ventilated place. Keep container tightly closed. Keep/Store away from extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.
INCOMPATIBLE MATERIALS: Strong bases. Strong acids. Strong oxidizers.
SPECIFIC END USE(S): Soldering metal parts

8 Exposure controls/personal protection

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 8 (Composition and Information on Ingredients). Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used.

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^3 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.

CAS	Ingredient	TWA ppm	TWA mg/m^3	STEL ppm	STEL mg/m^3
7732-18-5	Water				
138-15-8	Glutamic Acid Hydrochloride				
57-13-6	Urea		10		

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 protection:
VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Prudent practice is to ensure eyewash/safety shower stations are available near areas where this product is used. 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.

Breathing equipment:
Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used at all times. Any Air-Purifying, Full-Face piece Respirator with a high-efficiency particulate filter, or any appropriate escape-type, SCBA.

(Contd. on page 6)

Protection of hands:

Thermally-protective 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:


Safety glasses. When this product is used in conjunction with soldering, wear safety glasses, goggles or face-shield with filter lens of appropriate shade number (per ANSI Z49.1-1988, “Safety in Welding and Cutting”).

Body protection: Use body protection appropriate for task. When this product is used in conjunction with soldering, wear clothing that protects from sparks and flame, such as arm protectors, apron, hats, and shoulder protection

Respiratory Protection: Use an approved air-purifying or supplied-air respirator where airborne concentrations of vapour or mist are expected to exceed exposure limits.

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Clear, Colourless Liquid with no characteristic odour
Colour:	Clear
Odour:	Slight odour

RELATIVE VAPOR DENSITY (air = 1): Not applicable.
SPECIFIC GRAVITY (water = 1): 1.03
SOLUBILITY IN WATER: Complete
VAPOR PRESSURE, mm Hg @ 20 °C: Not applicable
EVAPORATION RATE (nBuAc = 1): >1
FREEZING/MELTING POINT: Not available.
BOILING POINT: 215^{0}C
pH: Not applicable.

ODOR THRESHOLD: Not applicable.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not applicable.
APPEARANCE AND COLOR: This product consists of Clear, Colourless Liquid with no characteristic odour

(Contd. on page 7)

HOW TO DETECT THIS SUBSTANCE (warning properties): The appearance is a distinctive characteristic of this product?

Explosion Data - Sensitivity to Mechanical Impact: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge: Not expected to present an explosion hazard due to static discharge.

10 Stability and reactivity

STABILITY: Stable.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids. Strong bases. Strong oxidizers.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None

INCOMPATIBLE MATERIALS: Strong acids. Strong bases. Strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride fumes, ammonium carbamates, ammonia

Hazardous decomposition products:
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

ACUTE TOXICITY: ORAL: Harmful if swallowed.
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Causes serious eye damage.
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified.
Carcinogenicity: Not classified.
Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure.
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.
Aspiration Hazard: May be fatal if swallowed and enters airways.
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: Overexposure may be irritating to skin.
Symptoms/Injuries After Eye Contact: Causes serious eye damage. Redness. Pain. Blurred vision. Severe burns.

(Contd. on page 8)

Symptoms/Injuries After Ingestion: May be fatal if swallowed and enters airways.
Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure.

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	IntravenousLD50	Inhalation Toxicity LD50
7732-18-5	Water			
138-15-8	Glutamic Acid Hydrochloride			
57-13-6	Urea	11mg/kg Mouse	5300 mg/kg Rat	

12 Ecological information

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
TOXICITY:
Very toxic to aquatic life with long lasting effects.

Ingredient	Result	Species	Exposure
7732-18-5 Water			
138-15-8 Glutamic Acid Hydrochloride			
57-13-6 Urea	LC50 3600 mg/kg	Fish	96 h

PERSISTENCE AND DEGRADABILITY:
May cause long-term adverse effects in the environment.

BIOACCUMULATIVE POTENTIAL:
Not Established

MOBILITY IN SOIL: NOT AVAILABLE
OTHER ADVERSE EFFECTS: Avoid release to the environment

13 DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS:
WASTE DISPOSAL RECOMMENDATIONS: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

ADDITIONAL INFORMATION: Contain spill, absorb, sweep up and dispose. Flush area to chemical sewer. Wash hands thoroughly after handing to remove all residue. Store under ambient conditions

14 Transport Information

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

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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: 505 Flux
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.

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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^3 (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]