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**Section 1 - Identification of The Material and Supplier**

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<b>Chemical nature:</b>	Blend of ingredients; principally sulfamic acid.
<b>Trade Name:</b>	<b>CU Later Part 2</b>
<b>Product Use:</b>	Treatment of copper stain in swimming pools.
<b>Creation Date:</b>	<b>January, 2015</b>
<b>This version issued:</b>	<b>January, 2015</b> and is valid for 5 years from this date.

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**SECTION 2 - HAZARDS IDENTIFICATION**

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**Statement of Hazardous Nature**

This product is classified as: Xn, Harmful. N, Dangerous to the environment. C, Corrosive. Hazardous according to the criteria of SWA.

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

**Risk Phrases:** R34, R52/53. Causes burns. Harmful to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

**Safety Phrases:** S20, S22, S46, S60, S61, S24/25, S36/37. When using, do not eat or drink. Do not breathe dust. If swallowed, contact a doctor or Poisons Information Centre immediately and show this SDS or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

**SUSMP Classification:** S6

**ADG Classification:** Class 8: Corrosive Substances.

**UN Number:** 2967, SULPHAMIC ACID

**GHS Signal word: DANGER.****HAZARD STATEMENT:**

H314: Causes severe skin burns and eye damage.

H412: Harmful to aquatic life with long lasting effects.

**PREVENTION**

P102: Keep out of reach of children.

P260: Do not breathe dusts.

P262: Do not get in eyes, on skin, or on clothing.

P264: Wash contacted areas thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing and eye or face protection.

**RESPONSE**

P310: Immediately call a POISON CENTER or doctor/physician.

P337: If eye irritation persists: seek medical attention.

P363: Wash contaminated clothing before reuse.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.

P304+P340: IF INHALED: Remove victim 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.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

**STORAGE**

P402+P404: Store in a dry place. Store in a closed container.

**DISPOSAL**

P501: If product can not be recycled, consider controlled incineration, or contact a specialist waste disposal company (see Section 13 of this SDS).

## Emergency Overview

**Physical Description & colour:** White crystalline powdered solid.

**Odour:** No odour.

**Major Health Hazards:** causes burns, irritating to eyes and skin.

## Potential Health Effects

Note that the following assessment is consistent with the HSIS and SWA designations. However they seem to be understated when considering the Class 8 corrosive designation of the product, AND the pH of its solutions.

### Inhalation:

**Short term exposure:** Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

**Long Term exposure:** No data for health effects associated with long term inhalation.

### Skin Contact:

**Short term exposure:** Available data indicates that this product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

**Long Term exposure:** No data for health effects associated with long term skin exposure.

### Eye Contact:

**Short term exposure:** This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

**Long Term exposure:** No data for health effects associated with long term eye exposure.

### Ingestion:

**Short term exposure:** Significant oral exposure is considered to be unlikely. However, this product is corrosive to the gastrointestinal tract. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure.

**Long Term exposure:** No data for health effects associated with long term ingestion.

### Carcinogen Status:

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** No significant ingredient is classified as carcinogenic by IARC.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Sulfamic acid	5329-14-6	>900g/kg	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

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## SECTION 4 - FIRST AID MEASURES

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### General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

**Inhalation:** No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

**Skin Contact:** Quickly and gently brush away excess particles. Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

**Eye Contact:** Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Give activated charcoal if instructed.

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## SECTION 5 - FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** There is little risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

**Flash point:** Does not burn.

**Upper Flammability Limit:** Does not burn.

**Lower Flammability Limit:** Does not burn.

**Autoignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn.

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## SECTION 6 - ACCIDENTAL RELEASE MEASURES

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**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable Dust Mask. Use a P1 mask, designed for use against mechanically generated particles eg silica & asbestos. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Because of the corrosiveness of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Contaminated area may be neutralised by washing with weak or dilute alkali. Baking soda, washing soda and limestone are suitable. This material may be suitable for approved

landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## SECTION 7 - HANDLING AND STORAGE

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for corrosion and leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
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Exposure limits have not been established by SWA for any of the significant ingredients in this product.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

**Eye Protection:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

**Protective Material Types:** We suggest that protective clothing be made from the following materials: rubber, PVC.

**Respirator:** If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

<b>Physical Description &amp; colour:</b>	White crystalline powdered solid.
<b>Odour:</b>	No odour.
<b>Boiling Point:</b>	Decomposes about 408°C at 100kPa
<b>Freezing/Melting Point:</b>	200-205°C
<b>Volatiles:</b>	No specific data. Expected to be low at 100°C.
<b>Vapour Pressure:</b>	Negligible at normal ambient temperatures.
<b>Vapour Density:</b>	Not applicable.
<b>Specific Gravity:</b>	2.16
<b>Water Solubility:</b>	213g/L at 20°C
<b>pH:</b>	1.18 (1% at 25°C)
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	Not applicable.

<b>Coeff Oil/water distribution:</b>	No data
<b>Viscosity:</b>	Not applicable.
<b>Autoignition temp:</b>	Not applicable - does not burn.
<b>Refractive index:</b>	Not applicable.
<b>Optical rotation:</b>	Not applicable.

## SECTION 10 - STABILITY AND REACTIVITY

**Reactivity:** Most strong acids react with inorganic and organic bases such as amines to form salts. They also react with many metals liberating hydrogen gas. These reactions are often rapid and sometimes liberate much heat. They can also decompose many organic materials such as esters, in a reaction called hydrolysis.

**Conditions to Avoid:** This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep containers and surrounding areas well ventilated.

**Incompatibilities:** bases, strong oxidising agents, zinc, tin, aluminium and their alloys.

**Fire Decomposition:** May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. May form oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour.

**Polymerisation:** This product will not undergo polymerisation reactions.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Local Effects:

**Target Organs:** There is no data to hand indicating any particular target organs.

Oral LD<sub>50</sub> Rat : >3000mg/Kg

Oral LD<sub>50</sub> Rat : 3160mg/Kg

Oral LD<sub>50</sub> Mouse : >1000mg/Kg

Oral LD<sub>50</sub> Mouse : 1312mg/Kg

Oral LD<sub>50</sub> Guinea Pig : 1050mg/Kg

Irritation Data, Skin, Human: Standard Draize Test: 4%/5days-I mild.

Skin, Rabbit: Standard Draize Test: 500mg/24hr severe.

Eye, Rabbit: Standard Draize Test: 250ug/24hr severe.

### Health Effects - Acute

**Swallowed:** Corrosive. Swallowing may result in nausea, vomiting, diarrhoea, abdominal pain, and chemical burns to the gastrointestinal tract. Swallowing may cause severe ere burns of the mouth, throat and stomach, leading to death.

**Eye:** Causes eye irritation. May cause blurred vision, redness, pain and severe tissue burns and eye damage.

**Skin:** Irritating to skin. Corrosive. Contact with skin will result in irritation with redness, pain and possible severe burns and stains.

**Inhaled:** Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation due to severe mucous membrane irritation, coughing, choking, headache, dizziness, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. May cause pulmonary oedema, a medical emergency. Pulmonary oedema may be delayed for up to 48 hours.

## Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Sulfamic Acid	Conc>=20%: Xi; R36/38

## SECTION 12 - ECOLOGICAL INFORMATION

Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities. However, until diluted or neutralised it will kill all aquatic organisms it contacts due to extreme pH.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**Disposal:** This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, consider landfill.

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**SECTION 14 - TRANSPORT INFORMATION**

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**ADG Code:** 2967, SULPHAMIC ACID**Hazchem Code:** 2X**Special Provisions:** None allocated**Limited quantities:** ADG 7 specifies a Limited Quantity value of 5 kg for this class of product.**Dangerous Goods Class:** Class 8: Corrosive Substances.**Packaging Group:** III**Packaging Method:** P002, IBC08, LP02

Class 8 Corrosive Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances where the Toxic Substances are cyanides and the Corrosives are acids), 7 (Radioactive Substances), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Poisonous Gases), 3 (Flammable liquids), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 6 (Toxic Substances except where the Toxic Substances are cyanides and the Corrosives are acids) and 9 (Miscellaneous Dangerous Goods).

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**SECTION 15 - REGULATORY INFORMATION**

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**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredient: Sulfamic acid, is mentioned in the SUSMP.

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**SECTION 16 - OTHER INFORMATION**

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**See our web site at [www.lo-chlor.com](http://www.lo-chlor.com)****This SDS contains only safety-related information. For other data see product literature.****Acronyms:**

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 <sup>th</sup> edition)
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)

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