AUSTRALIAN CHEMICAL REAGENTS

SAFETY DATA SHEET

Date Prepared: May 2019
Version No: 5

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	Kalling's reagent
Product Code:	4685
Other Names:	Nil
Uses:	Etching Reagent
Supplier:	Australian Chemical Reagents 38-50 Bedford Street Gillman SA 5013
Contacts:	Telephone: 61 08 84402000 Fax: 61 08 84402001 Emergency Phone: 61 08 84402000 Mon-Fri 8:30am – 5:00pm

2. HAZARDS INFORMATION

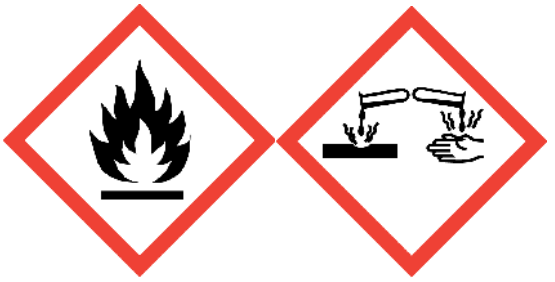
GHS Classification

Flammable Liquids: Category 2
Corrosive to Metals: Category 1
Skin Corrosion/Irritation: Category 1B
Serious Eye Damage/Irritation: Category 2A
Specific Target Organ Toxicity (Single Exposure) – Category 3

Signal Word(s)

DANGER

Pictogram(s)



Hazard Statement(s)

H225 Highly flammable liquid and vapour.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H334 May cause respiratory irritation

Precautionary Statement(s)

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P233 Keep container tightly closed.
P234 Keep only in original container
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242 Use only non-sparking tools.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well ventilated area

	P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response	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. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 Immediately call a POISON CENTER or doctor/physician. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. P370+P378 In case of fire: Use water spray, carbon dioxide or dry chemical for extinction. P390 Absorb spillage to prevent material damage.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P406 Store in corrosive resistant/... container with a resistant inner liner.
Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients :

Chemical Entity	CAS No	Proportion
Ethyl alcohol	[64-17-5]	40%
Hydrochloric acid	[7647-01-0]	10%
Copper chloride	[7447-39-4]	2%
Water	[7732-18-5]	to 100%

4. FIRST AID MEASURES

Safety showers and eye wash facilities should be provided.

Swallowed :

If conscious wash out mouth with water. Seek medical advice. Show this SDS to medical practitioner.

Eye :

Immediately hold eyelids open and flood with water for at least 15 minutes. Obtain medical aid. Show this SDS to medical practitioner.

Skin :

Remove contaminated clothing. Immediately wash skin thoroughly with water and mild soap. Seek medical advice. Show this SDS to medical practitioner. Launder clothing before reuse.

Inhaled :

Remove from contaminated air. Maintain breathing with artificial respiration if necessary. Seek medical assistance. Show this SDS to a doctor.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Water spray carbon dioxide, dry chemical powder, or appropriate foam.

Hazards From Combustion Products:

Flammable. Decomposition products include oxides of carbon and hydrogen chloride.

Precautions For Fire Fighters and Special Protective Equipment:

Fire fighters and others who may be exposed to combustion products during fire should wear full protective clothing including positive pressure self-contained breathing apparatus (SCBA). Wear SCBA with full face-piece, operated in positive pressure mode when fighting fires.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures:
Prevent from entering waterways. Restrict access to area. Remove chemicals that can react with the spilled material.

Methods and materials for containment and clean up:
Isolate all ignition sources. Ventilate area. Wear protective clothing. Use inert material such as sand or earth to contain spill or leak. Neutralise with sodium bicarbonate. Absorb spills with chemical absorber or vermiculite and dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Do not get in eyes, on skin, on clothing. Avoid all personal exposure. Do not mix with oxidising agents.
Do not breathe vapour.
Conditions for Safe Storage:
Flammable liquid storage required. Store sealed in original container in a cool well ventilated situation away from foods and other chemicals. Do not store in direct sunlight. . Refer to AS 1940 - *The storage and handling of flammable and combustible liquids* for storage procedures. Do not store in direct sunlight. Observe good hygiene and housekeeping practices.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards:
SWA – Ethanol 1880mg/m^3 TWA
Hydrogen chloride 7.5mg/m^3 TWA & Peak Limitation
Copper dusts & mists (as Cu) 1mg/m^3 TWA
Biological Limit Values: No data available.
Engineering Controls:
If mists are likely to be generated maintain atmospheric concentrations well below exposure standards with flameproof extraction ventilation.
Personal Protective Equipment (PPE):
The use of nitrile or neoprene gloves complying with AS 2161 and the use of faceshield, chemical goggles or safety glasses with side shield protection complying with AS/NZS 1337 is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Clear green liquid
Odour:	Alcohol
pH:	1
Boiling Point (^{0}C) :	90 approx
Freezing/melting Point:	Not applicable
Vapour Pressure (mm of Hg @ 25^{0}C) :	45
Vapour Density:	1.4
Specific Gravity :	0.8
Flash Point (^{0}C) :	13 cc
Flammability Limits (%) :	LEL 3.3 UEL 24.5 (ethanol)
Solubility in Water (g/L) :	Soluble

10. STABILITY AND REACTIVITY

Chemical stability:
Not known.
Conditions to avoid:

Heat. Ignition sources. Will corrode metals. Will produce toxic gases on contact with cyanides, sulphides, hypochlorites etc.

Incompatible materials:

Oxidizing agents, peroxides, acid chlorides, acid anhydrides, alkali metals, ammonia.

Hazardous decomposition products:

Refer to section 5 (Fire Fighting Measures).

Hazardous reactions:

Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Effects:

Swallowed : Corrosive. May cause burning taste. May lead to central nervous system depression, nausea, dizziness, headache, gastric irritation. For ethanol oral – human LDLo 1400 mg/kg For hydrochloric acid LD50 oral-rabbit 900mg/kg

Eye : Corrosive to eyes. 100mg ethanol applied to rabbit eyes produced moderate irritation after 24 hours. 100mg rinse of hydrochloric acid produced mild irritation of rabbit eyes.

Skin : Corrosive to skin tissue. May defat skin. 500mg ethanol applied to rabbit skin produced severe irritation after 24 hours.

Inhaled : Vapour is irritating to mucous membranes and respiratory tract. May be harmful if inhaled.
May result in dizziness, headaches and nausea. For ethanol LC50 inhalation rat 20000 ppm / 10 hours.
For hydrochloric acid LCLo inhalation-human 1300 ppm for 30 minutes.

Chronic Effects:. Long term exposure may include liver, heart and kidney damage. Repeated skin contact may cause dermatitis.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

No data available.

Persistence and degradability:

No data available.

Mobility:

No data available.

13. DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service to dispose of this material and container. Observe all federal, state and local environmental regulations.

14. TRANSPORT INFORMATION

UN Number: 2924
UN Proper Shipping Name: FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Class and subsidiary risk(s): 3, 8
Packing Group: II
Hazchem Code: •3WE
Special precautions for user : Nil

15. REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP):

Not Scheduled

16. OTHER INFORMATION

Disclaimer:
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