

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF PRODUCT AND COMPANY

Product: Ronabond EP Cleaner
Company: Ronacrete (Far East) Ltd., 16/F, No. 3 Lockhart Rd,
Wanchai, Hong Kong SAR
Tel/Fax: +852 2865 5872 / +852 2865 5568

2. COMPOSITION

Ingredient	CAS number	Proportion
d-Limonene	5989-27-5	HIGH
1-Methyl-2-Pyrrolidinone	872-50-4	HIGH
Methylcellulose	9004-67-5	LOW

3. HAZARDS IDENTIFICATION

UN number: 3082
Hazchem code: Xi Irritant
Class: 9
Packing group: III
Correct shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains d-Limonene)

4. FIRST AID MEASURES

Notes to physician: Treat symptomatically based on judgement of the treating physician and the individual reactions of the patient.

Ingestion: Rinse mouth with water. Give water to drink. DO NOT induce vomiting. Seek immediate medical assistance.

Inhalation: Remove victim from exposure. Keep warm. Keep at rest until fully recovered. If breathing becomes laboured and patient is cyanotic (blue), ensure airways are clear and have qualified person give oxygen. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. Seek immediate medical attention.

Skin contact: Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. Repeated contact may cause a drying of the skin. If irritation persists seek medical advice.

Eye contact: Immediately irrigate with copious quantities of water for at least 15 minutes. Seek medical treatment if irritation persists.

5. FIRE FIGHTING MEASURES

Specific hazards: Combustible Liquid. Hazardous decomposition products include nitrous vapours. An explosive mixture can be formed. Avoid contact with oxidising agents.

Suitable extinguishing media: Alcohol resistant foam, carbon dioxide and chemical powder. Water fog (or if unavailable fine water spray) may be used if no other media is available, and then only in copious quantities. Fire causes toxic nitrous vapours. Vapour is heavier than air and may form explosive mixtures that pool in drains

Required special equipment for fire fighters: Self-contained breathing apparatus.

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6. ACCIDENTAL RELEASE MEASURES

For minor spillage:

1. Wear skin and eye protection.
2. Treat spillage with solid media (eg sand, sawdust or chemical binder).
3. Remove and dispose of residues according to local authority regulations.

For major spillage:

1. Clear area of all unprotected personnel
2. Wear full protective equipment including splash suit, air supplied mask, gloves, boots and eye protection.
3. Prevent run off into drains and waterways. Cover with soil, sand or solid decontaminant.
4. Shovel into open top drums for further decontamination if necessary..
5. Ventilate the area well before allowing unprotected personnel to re-enter the area.

7. HANDLING AND STORAGE

Classified as a C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

Storage: Store indoors in a dry, well-ventilated area. Recommended storage temperature 10 – 35°C. Keep away from sources of ignition. Material is both Hygroscopic and is subject to oxidation. Store in light proof metal containers and ensure that they remain sealed at all times. Partially filled containers should be blanketed with nitrogen to ensure shelf life and reduce degradation.

Materials to avoid: Water, alcohols, amines, acids, alkalis, organic compounds containing active hydrogen groups, foodstuffs and sources of ignition.

Unsuitable containers: Plastic containers, Translucent containers or containers with non airtight seals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National occupational exposure limits:

No values assigned for this specific material by the National Occupational Health and Safety Commission (Worksafe Australia) or for the constituents however the following exposure standards are published for d-Limonene:

Material	TWA		STEL		Source
	ppm	Mg/m ³	ppm	Mg/m ³	
d-Limonene	25	-	-	-	Norway (OEL)
	25	-	50	-	Sweden
	30	-	-	-	AIHA ¹

TWA – the Time-Weighted Average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term exposure limit) – the average airborne concentration over a 15 minute period which not be exceeded at any time during a normal eight hour workday. According to current knowledge these concentrations should neither impair the health of, nor cause undue discomfort to, nearly all workers.

¹American Industrial Hygiene Association

Personal protection: Wear suitable protective clothing to avoid contact with skin. Wear protective goggles, glasses or face shield. Use Teflon, nylon or neoprene gloves. PVC and Latex gloves are not suitable. Limit exposure to product wherever possible. Use respirator with organic filters if exposure is likely to exceed limits or if used in confined spaces or areas with limited ventilation. Always follow good industrial hygiene practice and wash hands and face thoroughly after handling and prior to work breaks, eating, drinking, smoking or using toilet facilities.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odour:	Colourless to light yellow clear liquid with a strong citrus aroma
Specific gravity:	0.94
Viscosity:	Not Available
% Solids by weight:	Not applicable
pH:	Not applicable
Water Solubility:	Partially Soluble <200 g/kg water in Ronabond EP Cleaner.
Boiling point (°C):	>175° C
Flash point (°C):	Not Available
Flammability limits (%):	Not Available
Autoignition Temp (°C):	Not Available
Vapour pressure (20 °C):	0.4mm Hg (d-Limonene)
Vapour density:	4.7 (d-Limonene)
Melting point (°C):	Not Available
Decomposition point (°C):	Not Available
Sublimation point (°C):	Not applicable
Evaporation rate:	Not Available
Odour Threshold (ppm):	Not Available

10. STABILITY AND REACTIVITY

Materials to avoid: Subject to oxidisation. Store away from oxidising materials, sources of ignition and foodstuffs. Store in sealed full containers in a cool dry environment out of direct sunlight.

11. TOXICOLOGICAL INFORMATION

Eye contact: Vapour and liquid may cause eye irritation.

Skin contact: Contact may result in moderate irritation. Can be absorbed through the skin. Repeated or prolonged contact may result in drying of the skin.

Inhalation: Vapour or mists may be an irritant to mucous membranes and respiratory tract. Inhalation of vapour can result in irritation to eyes, nose, throat and lungs. Strong Citrus odour may cause discomfort to some people. Aspiration may cause lung damage

Ingestion: May cause nausea, vomiting and irritation to the gastrointestinal tract. Ingestion of 20g of d-Limonene caused diarrhoea, painful constrictions and proteinuria in volunteers.

Long-term effects: Available evidence indicates that repeated or prolonged exposure to skin of d-Limonene may result in sensitisation in some individuals. D-Limonene has been found to cause kidney tumours in male rats and liver effects have been found in animal studies. These effects are not considered relevant to humans. In animal studies, at maternally toxic doses, developmental toxicity was recorded for NMP, however at exposure levels below the TLV and with no skin contact these effects are not to be expected. This product does not contain any substances that are considered to be "probable" or "suspected" human carcinogens, however exposure to this product by pregnant women and women of child bearing age should be avoided.

Acute toxicity / Chronic toxicity: No LD50 data available for this product. However for the constituents: d-Limonene:

Oral LD50: 4400/5100 mg/kg (rat m/f), >5000 mg/kg (rabbit), 5600/6600 mg/kg (mouse m/f).

Inhalation – no test data found

Skin: Severe irritant dermal LD50 (rabbit) - >5000mg/kg).

Eyes: Severe irritant (rabbit).

n-methylpyrrolidone (NMP):

Oral LD50: 3914 mg/kg (rat),

Inhalation LC50 (rat) no mortality after 6 hours in saturated environment

Acute Dermal Toxicity LD50 (rabbit) - 8000mg/kg).

Skin: Slight irritation (rabbit) – no sensitising effect

Eyes: Slight irritant (rabbit, guinea pig) – no sensitising effect.

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12. ECOLOGICAL INFORMATION

No test data for product however the constituent d-Limonene may be toxic to Aquatic organisms.

Aquatic Toxicity (d-Limonene)

LC0 (fish) 96 hr: <1 mg/L.
 EC50 (Daphnia) 48 hr: <1 mg/L.
 IC50 (Algae) 75 hr: <1mg/L

Environmental Fate, Distribution and Persistence

d-Limonene oxidises over time. No specific data available. NMP is 70% biodegradable in 28 days and readily biodegrades in the aquatic environment. NMP is not toxic to aquatic organisms and has a high mobility in soil with a coefficient (Koc) of 9.6.

13. DISPOSAL CONSIDERATIONS

Refer to Local authority. Empty containers may be recycled provided that they are fully drained and cleaned and recycled by through approved reconditioner.

14. TRANSPORT INFORMATION

Road and Rail: Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road or Rail.

UN Number: 3082
 DG Class: 9
 Packing Group: III
 Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains d-LIMONENE)

Air Transport: Classified as Dangerous Goods by the criteria of the International Aviation Transport Association (IATA)

UN Number: 3082
 DG Class: 9
 Packing Group: III
 Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains d-LIMONENE)

15. REGULATORY INFORMATION

This material is hazardous according to health criteria of Worksafe Australia.

Hazard Category:

Xi Irritant

R-phrases

R36	Irritating to eyes.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R50	Very toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.

MATERIAL SAFETY DATA SHEET**S-phrases**

S2	Keep out of reach of children.
S24	Avoid contact with skin.
S37	Wear suitable gloves.
S41	In case of fire and/or explosion, do not breathe fumes.

S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

Poisons Schedule: None Allocated.

16. OTHER INFORMATION

This MSDS summarises at the date of issue our best knowledge of health and safety hazard information for this product, and in particular how to safely handle and use the product in the workplace. Each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.
