



Infosafe No™	3CH5U	Issue Date : November 2018	RE-ISSUED by CHEMSUPP
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Product Name : **RANKINE SO2 INDICATOR SOLUTION**

Classified as hazardous

**1. Identification**

**GHS Product Identifier** RANKINE SO2 INDICATOR SOLUTION

**Company Name** CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

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SA 5013 Australia

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**(24 hour a day available)** CHEMCALL: 1800 127 406 (Australia) / +64-4-917-9888 (International)

**Recommended use of the chemical and restrictions on use** Rankine SO2 apparatus.**Other Names****Name****Product Code**

RANKINE SO2 INDICATOR SOLUTION LR

RL044

**Other Information**

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

**2. Hazard Identification****GHS classification of the substance/mixture** Flammable Liquids: Category 3**Signal Word (s)** WARNING**Hazard Statement (s)** H226 Flammable liquid and vapour.**Pictogram (s)** Flame**Precautionary statement – Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242 Use only non-sparking tools.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement – Response**

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

**Precautionary statement – Storage**

P403+P235 Store in a well-ventilated place. Keep cool.

**Precautionary statement – Disposal**

P501 Dispose of contents/container to an approved waste disposal plant.

**3. Composition/information on ingredients****Chemical Characterization** Liquid



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Ethanol	64-17-5	49.5 %
Water	7732-18-5	49.5 %
Methyl red, sodium salt	845-10-3	1 %
Methylene blue	61-73-4	0.5 %

**4. First-aid measures**

<b>Inhalation</b>	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.
<b>Ingestion</b>	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.
<b>Skin</b>	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
<b>Eye contact</b>	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
<b>First Aid Facilities</b>	Maintain eyewash fountain and drench facilities in work area.
<b>Advice to Doctor</b>	Treat symptomatically and supportively.
<b>Other Information</b>	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

**5. Fire-fighting measures**

<b>Hazards from Combustion Products</b>	Oxides of carbon, nitrogen and sulfur.
<b>Specific Methods</b>	Caution: Use of water spray when fighting fire may be inefficient. Small fire: Use foam, dry chemical, CO2 or water spray. Large fire: Use foam, fog or water spray - Do not use water jets. If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
<b>Specific hazards arising from the chemical</b>	FLAMMABLE: - Will be easily ignited by heat, sparks or flames at ambient temperatures. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Many liquids are lighter than water. Many vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Vapours from run-off may create an explosion hazard.
<b>Hazchem Code</b>	•3YE

**6. Accidental release measures**

<b>Spills &amp; Disposal</b>	ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 50m - All equipment used in handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours. Absorb spill with earth, sand or other non-combustible material - Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal. Water spray may be used to knock down or divert vapour clouds. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
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**7. Handling and storage**

<b>Precautions for Safe Handling</b>	Avoid ingestion and inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Use only in a well-ventilated area. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Keep container tightly closed. Keep away from heat, sparks and flame. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Empty containers retain product residue, (liquid and/or vapour), and can be dangerous.
<b>Conditions for safe storage, including any incompatibilities</b>	Flammables-area. Store in tightly closed containers, in a cool, dry, well-ventilated area, away from incompatible substances. Keep away from heat and all sources of ignition (sparks and flame). Keep from contact with oxidizing materials. Do not store near perchlorates, peroxides, chromic acid or nitric acid.



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**Corrosiveness** Ethanol is not corrosive to cast iron, steel stainless steel, copper and its alloys, nickel and its alloys and aluminium. May react with hot aluminium.

**Storage Regulations** Refer Australian Standard AS 1940-2004 'The storage and handling of flammable and combustible liquids'.

**Storage Temperatures** Store at room temperature (15 to 25 °C recommended).

**8. Exposure controls/personal protection**

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m3	ppm	mg/m3	ppm	
	Ethanol			1880	1000	
<b>Other Exposure Information</b>	A time weighted average (TWA) has been established for Sodium hydroxide (Worksafe Aust) of 2 mg/m <sup>3</sup> (Peak limitation) and for Ethyl alcohol (Safe Work Aust) of 1,880 mg/m <sup>3</sup> , (1,000 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak Limitation - a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.					
<b>Appropriate engineering controls</b>	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.					
<b>Respiratory Protection</b>	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.					
<b>Eye Protection</b>	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate.					
<b>Hand Protection</b>	Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.					
<b>Footwear</b>	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: NR latex and neoprene.					
<b>Body Protection</b>	Enclosed footwear.					
<b>Hygiene Measures</b>	Flame retardant antistatic protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.					
	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.					

**9. Physical and chemical properties**

<b>Form</b>	Liquid
<b>Appearance</b>	Blue solution.
<b>Odour</b>	Ethanolic odour.
<b>Freezing Point</b>	-37 °C
<b>Solubility in Water</b>	Soluble.
<b>Solubility in Organic Solvents</b>	Easily soluble in n-octanol. Soluble in methanol, diethyl ether, acetone.
<b>Specific Gravity</b>	~0.8
<b>Vapour Pressure</b>	Ethanol: 5.9 kPa (44.3 mm Hg) at 20 °C.
<b>Vapour Density (Air=1)</b>	Ethanol: 1.59.
<b>Evaporation Rate</b>	>1 (ether=1)
<b>Odour Threshold</b>	Ethanol: 49-716 ppm (geometric mean: 180 ppm) (detection); 100 ppm (recognition).
<b>Flash Point</b>	27 °C
<b>Flammability</b>	FLAMMABLE. Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to



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<b>Flammable Limits - Lower</b>	prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition. 2.0 vol %
<b>Flammable Limits - Upper</b>	12.0 vol%
<b>Explosion Properties</b>	Can release vapours that form explosive mixtures at temperatures above the flashpoint. Containers may explode in the heat of a fire.
<b>Saturated Vapour Concentration</b>	Ethanol: 58300 ppm (5.8%) at 20 °C (calculated)

**10. Stability and reactivity**

<b>Chemical Stability</b>	Stable under normal temperatures and pressures.
<b>Conditions to Avoid</b>	Incompatible materials, ignition sources, excess heat, oxidizers.
<b>Incompatible Materials</b>	Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.
<b>Hazardous Decomposition Products</b>	Irritating and toxic fumes and gases, oxides of sulfur, carbon, nitrogen and sodium, sodium, hydrogen bromide and phenols.
<b>Hazardous Polymerization</b>	Will not occur.

**11. Toxicological Information**

<b>Acute Toxicity - Oral</b>	LD50 (rat): 7060 mg/kg; 10600 mg/kg; 13660 mg/kg - Ethanol; LD50 (mouse): 3450 mg/kg - Ethanol; LD50 (guinea pig): 5560 mg/kg - Ethanol.
<b>Acute Toxicity - Inhalation</b>	LC50 (mouse): Approximately 21000 ppm/ 4 h; cited as 39 g/m <sup>3</sup> /4 h - Ethanol.
<b>Ingestion</b>	May cause central nervous system depression, kidney damage, and liver damage. May cause gastrointestinal irritation with nausea, vomiting and diarrhoea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
<b>Inhalation</b>	Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentrations. Vapours may cause dizziness or suffocation.
<b>Skin</b>	Causes moderate skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.
<b>Eye</b>	Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.
<b>Skin Sensitisation</b>	Sensitisation test (Magnusson and Kligman): negative - Ethanol.
<b>Reproductive Toxicity</b>	Ethanol: Effects on reproductive organs, including decreased testicular weight, decreased numbers of motile sperm, decreased ovarian function and irregular fertility cycles, have been observed in animals given large oral doses of ethanol. However, no confirmed effects on fertility or reproductive capability have been observed. In a well-conducted continuous breeding study, mice were exposed to 5, 10 or 15% ethanol in water (approximately 8500, 16000 and 20000 mg/kg/day). No effects on fertility and only minor reproductive effects were observed (reduced sperm motility and increased time between litters). Male and female rats with inhalation exposure to 10000 or 16000 ppm ethanol for 6 weeks prior to mating showed no effect on fertility.
<b>Chronic Effects</b>	May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumours. Prolonged exposure may cause liver, kidney, and heart damage.
<b>Serious eye damage/irritation</b>	Draize test, rabbit, eye: 500 mg/24 h Mild - Ethanol.
<b>Mutagenicity</b>	Ethanol: A mutagenic effect has been demonstrated in animal studies on mammals, justifying the assumption that exposure of humans to the substance may produce hereditary damage.



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**Skin corrosion/irritation** Draize test, rabbit, skin: 20 mg/24 h Moderate. Ethanol

**12. Ecological information**

**Ecological Information** No ecological problems are to be expected when the product is handled and used with due care and attention.

**Ecotoxicity** When used properly, no impairments in the function of waste-water-treatment plants are to be expected. In high concentrations: Harmful effect on aquatic organisms.

**Persistence and degradability** Ethanol: Abiotic degradation: Rapid degradation. (air)  
Biologic degradation: Biodegradation: 94 % modified OECD screening test;  
Readily biodegradable.  
Further ecologic data: BOD: 0.93-1.67 g/g; COD: 1.99 g/g; ThOD: 2.10 g/g; BOD 74 % of ThOD /5 d;  
COD 90 % of ThOD.

**Mobility** Distribution: log P(oct): -0.32 (ethanol).

**Bioaccumulative Potential** No bioaccumulation is to be expected (log P(o/w <1) (ethanol).

**Environmental Protection** Do not allow to enter waters, waste water, or soil!

**Acute Toxicity - Fish** L.idus LC50: 8140 mg/l /48 h.

**Acute Toxicity - Daphnia** Daphnia magna EC50: 9268-14221 mg/l /48 h.

**Acute Toxicity - Algae** Maximum permissible toxic concentration: Algeal toxicity: Sc.quadricauda IC5: 5000 mg/l /7 d.

**Acute Toxicity - Bacteria** Maximum permissible toxic concentration: Bacterial toxicity: Ps.putida EC5: 6500 mg/l /16 h.

**Acute Toxicity - Other Organisms** Maximum permissible toxic concentration: Protozoa: E.sulcatum EC5: 65 mg/l /72 h.

**13. Disposal considerations**

**Disposal Considerations** Dispose of according to relevant local, state and federal government regulations.

**14. Transport information**

**Transport Information** Dangerous Goods of Class 3 Flammable Liquids, are incompatible in a placard load with any of the following: - Class 1, Class 2.1, if both the Class 3 and Class 2.1, dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane and Class 7.

**U.N. Number** 1993

**UN proper shipping name** FLAMMABLE LIQUID, N.O.S.

**Transport hazard class(es)** 3

**Hazchem Code** •3YE

**Packing Group** II

**EPG Number** 3A1

**IERG Number** 14

**15. Regulatory information**

**Poisons Schedule** Not Scheduled

**16. Other Information**

**Literature References** 'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia.  
Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.  
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.  
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.  
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide',



chem-supply

# Safety Data Sheet

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**Contact  
Person/Point**

Standards Australia/Standards New Zealand, 2010.  
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.  
Safe Work Australia, 'Hazardous Substances Information System, 2005'.  
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.  
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.  
Paul McCarthy Ph. (08) 8440 2000 **DISCLAIMER STATEMENT:**  
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