

SAFETY DATA SHEET

196

Product Name **R141B + 5% METHANOL**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name BOC LIMITED (AUSTRALIA)
Address 10 Julius Avenue, North Ryde, NSW, AUSTRALIA, 2113
Telephone 131 262, (02) 8874 4400
Fax 132 427 (24 hours)
Emergency 1800 653 572 (24/7) (Australia only)
Web Site <http://www.boc.com.au/>
Synonym(s) 1,1-DICHLORO-1-FLUOROETHANE · 196 - SDS NUMBER
Use(s) CLEANING SOLVENT · ELECTRONICS · PRECISION ENGINEERING
SDS Date 26 April 2012

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R59 Dangerous for the ozone layer.
R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

SAFETY PHRASES

S7 Keep container tightly closed.
S16 Keep away from sources of ignition - No smoking.
S24 Avoid contact with skin.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S59 Refer to manufacturer / supplier for information on recovery / recycling.
S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN Number	None Allocated	DG Class	None Allocated
Packing Group	None Allocated	Subsidiary Risk(s)	None Allocated
Hazchem Code	None Allocated		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
1,1-DICHLORO-1-FLUOROETHANE (HCFC 141B)	CAS: 1717-00-6 EC: 404-080-1	N;R52/53 N;R59	95%
METHANOL	CAS: 67-56-1 EC: 200-659-6	F;R11 T;R23/24/25 T;R39/23/24/25	5%

4. FIRST AID MEASURES

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until

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	advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
Advice to Doctor	Treat symptomatically.
First Aid Facilities	Eye wash facilities and safety shower are recommended.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve toxic gases (chlorides, phosgene, fluorides, hydrogen fluoride, carbon oxides) when heated to decomposition. Vapour may form explosive mixtures with air.
Fire and Explosion	Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.
Extinguishing	Prevent contamination of drains or waterways.
Hazchem Code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Spillage	Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.
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7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from oxidising agents, alkalis, active metals, metal powders, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled and protected from physical damage when not in use. Check regularly for leaks or spills. Store below 50°C.
Handling	Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Methanol	SWA (AUS)	200	262	250	328

Biological Limits

Ingredient	Reference	Determinant	Sampling Time	BEI
METHANOL	ACGIH BEI	Methanol in urine	End of shift	15 mg/L

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Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	When using large quantities or where heavy contamination is likely, wear coveralls.
Respiratory	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. At high vapour levels, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS LIQUID
Odour	SLIGHT ETHER-LIKE ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	29.4°C
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	5.018 (Air = 1)
Specific gravity	1.210
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	700 hPa @ 20°C
Upper explosion limit	17.7 %
Lower explosion limit	5.6 %
Autoignition temperature	532°C
% Volatiles	NOT AVAILABLE

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid heat, sparks, open flames and other ignition sources.
Material to Avoid	Incompatible with oxidising agents (eg. hypochlorites), alkalis (eg. hydroxides), metals, heat and ignition sources. Contact with metallic powders may result in an exothermic reaction and a potential risk of explosion.
Hazardous Decomposition Products	May evolve toxic gases (chlorides, phosgene, fluorides, hydrogen fluoride, carbon oxides) when heated to decomposition.
Hazardous Reactions	Hazardous polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Asphyxiant vapour - narcotic at high levels. Adverse health effects may result from exposure to high vapour levels or with direct eye or skin contact. Use safe work practices to avoid vapour generation - inhalation. Acute symptoms from over exposure resemble narcosis. Over exposure may result in cardiac arrhythmias (irregular beating or arrest of the heart) in sensitive individuals. Occupational exposure to methanol at high vapour concentrations in poorly ventilated areas has been reported to cause visual disturbances, liver enlargement and death. Ensure safe work practices to avoid exposure.
Eye	Low to moderate irritant. Contact may result in irritation, lacrimation, pain and redness.
Inhalation	Irritant - asphyxiant. Over exposure may result in respiratory irritation, coughing, nausea, dizziness and headache. High level exposure may result in dizziness, breathing difficulties and anaesthesia, cardiac arrhythmias, pulmonary oedema and unconsciousness at very high levels.
Skin	Irritant. Contact may result in drying and defatting of the skin, rash and dermatitis. Moderate toxicity. Ingestion may result in nausea, vomiting, abdominal pain, diarrhoea, fatigue,

Product Name R141B + 5% METHANOL**Ingestion** dizziness and unconsciousness.

Toxicity Data	1,1-DICHLORO-1-FLUOROETHANE (HCFC 141B) (1717-00-6)	
	LC50 (inhalation)	151 g/m ³ /2 hours (mouse)
	LD50 (ingestion)	> 5 g/kg (rat)
	LD50 (skin)	> 2 g/kg (rat)
	METHANOL (67-56-1)	
	LC50 (inhalation)	50 g/m ³ /2 hours (mouse)
	LCLo (inhalation)	1000 ppm (monkey)
	LD50 (ingestion)	5628 mg/kg (rat)
	LD50 (skin)	15,800 mg/kg (rabbit)
	LDLo (ingestion)	143 mg/kg (human)
	LDLo (skin)	393 mg/kg (monkey)
	TCLo (inhalation)	300 ppm human (visual effects)
	TDLo (ingestion)	3429 mg/kg (man-visual change)

12. ECOLOGICAL INFORMATION

Environment Dangerous for the ozone layer. Hydrogenated chlorofluorocarbon compounds (HCFC's) do not persist in the stratosphere to the same degree as chlorofluorocarbons (CFC's). Although ozone depleting, they have a lower ozone depleting effect than CFC's. Release of HCFCs into the environment should be minimised and where possible, recycling of HCFCs is recommended. ATMOSPHERE: Methanol degrades via reaction with photochemically produced hydroxyl radicals (approximate half-life of 17.8 days). Physical removal from air can occur via rainfall. SOIL: If released to soil, methanol is expected to rapidly biodegrade and be susceptible to significant leaching to groundwater. Relatively rapid evaporation from dry surfaces is likely to occur. WATER: Rapidly biodegrade Volatilization half-lives of 4.8 days and 51.7 days have been estimated for a model river (1 m deep) and an environmental pond, respectively. Aquatic hydrolysis, oxidation, photolysis and adsorption to sediment are not significant. BIOLOGICAL: Biodegradable, not expected to bioconcentrate. This product is not readily biodegradable, is slightly harmful to fish and is also harmful to daphnia. Fish toxicity: LC50 (Brachydanio rerio) = 126 mg/L/96 hours.

13. DISPOSAL CONSIDERATIONS

Waste Disposal OZONE DEPLETING SUBSTANCE. Do not send to landfill. Ensure product is transported to approved incineration facility equipped with after burner and scrubber for disposal. Contact the manufacturer for additional information. Prevent contamination of drains and waterways as environmental damage may result.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN Number	None Allocated	None Allocated	None Allocated
Proper Shipping Name	None Allocated	None Allocated	None Allocated
DG Class/ Division	None Allocated	None Allocated	None Allocated
Subsidiary Risk(s)	None Allocated	None Allocated	None Allocated
Packing Group	None Allocated	None Allocated	None Allocated
Hazchem Code	None Allocated		

15. REGULATORY INFORMATION

Poison Schedule Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Inventory Listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional Information

OZONE DEPLETING SUBSTANCES: It is an offence (EPA) to distribute and manufacture the following identified ozone depleting substances unless authorised to do so: 1,1,1-trichloroethane, carbon tetrachloride, CFCs - 11,12,13, 111, 112, 113, 114, 115, 211, 212, 213, 214, 215, 216 & 217. HCFC's-21, 22, 31, 122, 123, 124, 131, 133, 141b, 142, 142b, 151, 221, 222, 223, 224, 225, 225ca, 225cb, 226, 231, 232, 233, 234, 235, 241, 242, 243, 244, 251, 252, 253, 261, 262 & 271. HALONS-1211, 1311, 114 & 115.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this ChemAlert 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.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
mg/m ³	Milligrams per Cubic Metre
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
TLV	Threshold Limit Value
TWA/OEL	Time Weighted Average or Occupational Exposure Limit

Revision History

Revision	Description
1.0	Standard SDS Review.

Report Status

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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End of SDS