

SAFETY DATA SHEET

7000

Product Name **CARULITE 200 GRANULAR CATALYST**

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) 7000 - SDS NUMBER
Use(s) OZONE REMOVAL
SDS Date 13 Jul 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R20/22 Harmful by inhalation and if swallowed.

SAFETY PHRASES

S25 Avoid contact with eyes.

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

UN No. None Allocated **DG Class** None Allocated **Subsidiary Risk(s)** None Allocated
Packing Group None Allocated **Hazchem Code** None Allocated

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
MANGANESE DIOXIDE	Mn-O ₂	1313-13-9	75-85%
COPPER (II) OXIDE	Cu-O	1317-38-0	15-25%

4. FIRST AID MEASURES

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

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. Ingestion is considered unlikely due to product form.

Advice to Doctor Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable solid. May evolve toxic copper oxide and manganese fumes when heated to decomposition. This product may accelerate the burning of combustible materials.
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. Prevent spill entering drains or waterways. Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.
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7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from oxidising agents, organics, alkalis, water/steam, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.
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 Stds

Ingredient	Reference	TWA		STEL	
Copper (fume)	ASCC (AUS)	--	0.2 mg/m3	--	--
Copper, dusts & mists (as Cu)	ASCC (AUS)	--	1 mg/m3	--	--
Manganese, dust & compounds (as Mn)	ASCC (AUS)	--	1 mg/m3	--	--

Biological Limits No biological limit allocated.

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

PPE Wear dust-proof goggles, PVC or rubber gloves and coveralls. At high dust levels, wear: a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter or a Full-face Class P3 (Particulate) respirator. Where an inhalation risk exists, wear: a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	BLACK POWDER OR GRANULES	Solubility (water)	INSOLUBLE
Odour	ODOURLESS	Specific Gravity	NOT AVAILABLE
pH	NOT AVAILABLE	% Volatiles	0 %
Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE
Vapour Density	NOT AVAILABLE	Flash Point	NOT RELEVANT
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT RELEVANT
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT RELEVANT
Evaporation Rate	NOT AVAILABLE		
Bulk Density	0.8 to 0.9 g/cm3	Decomposition Temperature	454°C

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage. Stable under recommended conditions of storage.
Conditions to Avoid	Avoid contact with incompatible substances. Avoid heat, sparks, open flames and other ignition sources.
Material to Avoid	Incompatible with oxidising agents (eg. peroxides), acids (eg. nitric acid), nitromethane, alkalis (eg. calcium hydroxide) and organics. Copper oxide may react with acetylene to form potentially explosive copper acetylides. Evolves flammable gas on contact with water/steam.
Hazardous Decomposition Products	May evolve toxic copper oxide and manganese fumes when heated to decomposition.
Hazardous Reactions	Polymerization will not occur. Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Low to moderate toxicity - irritant. Use safe work practices to avoid dust inhalation. Chronic exposure to manganese may result in manganese poisoning (manganism), a progressively disabling brain disease, which in its latter stages resembles Parkinsons disease. Symptoms may result in lack of appetite, fatigue and changes in speech, balance and personality. Chronic or high level exposure may cause liver, kidney and blood damage.
Eye	Irritant. Contact may result in irritation, lacrimation, pain and redness.
Inhalation	Irritant. Over exposure to dust may result in mucous membrane irritation of the respiratory tract. Chronic exposure may result in manganese poisoning, a disabling, usually progressive disorder of the central nervous system with symptoms resembling Parkinsonism.
Skin	Irritant. Contact may result in irritation, redness, rash and dermatitis. May be absorbed through skin with harmful effects.
Ingestion	Moderate toxicity. Ingestion of manganese compounds may result in central nervous system depression (CNS). Target organs for manganese poisoning include respiratory system, central nervous system, blood and kidneys.
Toxicity Data	MANGANESE DIOXIDE (1313-13-9) LD50 (Ingestion): > 3478 mg/kg (rat) LD50 (Subcutaneous): 422 mg/kg (mouse) LDLo (Intratracheal): 50 mg/kg (rat) LDLo (Intravenous): 45 mg/kg (rabbit) TCLo (Inhalation): 49 mg/m3/7 hours (1-18 day pregnant mouse)

12. ECOLOGICAL INFORMATION

Environment	Limited ecotoxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment.
Ecotoxicity	There is currently insufficient data to classify the ecotoxicity of this product. Ecotoxicity Values for Manganese (EPA, 2002): LD50 (FRESHWATER) SILVERSIDE (<i>Basilichthys australis</i>): total Mn >50,000 mcg/L for 96 hours-static -- mortality. LC50 (FRESHWATER) EASTERN NARROW-MOUTHED TOAD (<i>Gastrophryne carolinensis</i>): total Mn 1,420 mcg/L for 7 days-renewal -- increased mortality. LC50 (FRESHWATER) RAINBOW TROUT, DONALDSON TROUT (<i>Oncorhynchus mykiss</i>): total Mn >170 - <15,610 mcg/L for 28 days-renewal -- increased mortality.
Persistence / Degradability	This product is not readily biodegradable. This product is not readily biodegradable.
Mobility	Limited information was available at the time of this review. Not available, but considered very low.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Return to manufacturer. Contact the manufacturer for additional information.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

Product Name

CARULITE 200 GRANULAR CATALYST

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

Shipping Name	None Allocated			
UN No.	None Allocated	DG Class	None Allocated	Subsidiary Risk(s) None Allocated
Packing Group	None Allocated	Hazchem Code	None Allocated	

15. REGULATORY INFORMATION

Poison Schedule	A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
AICS	All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Additional Information	RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.
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ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EC No - European Community Number.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert 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.

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').
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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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Web: www.rmt.com.au

SDS Date 13 Jul 2010

End of Report