

Safety Data Sheet

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REVISION (see box 16)

Issue : 03 05 : 10 : 2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY	
Product Name	CARBON DIOXIDE (used in Controlled Atmosphere Treatment)
Description	A colourless odourless gas with a faint acid taste, supplied as a liquefied gas under pressure in cylinders. For professional use as an insecticide (fumigant) in public hygiene situations and wood treatment (in purpose built, sealed enclosures such as the Rentokil Fumigation Bubble). Also used, under licence, as a rodenticide for trapped rodents and for the control of opportunistic bird species.
Company	Rentokil Initial UK Ltd, Pest Control, Felcourt, East Grinstead, West Sussex. RH19 2JY. United Kingdom. Telephone:+44 (0) 1342 833022 Facsimile:+44 (0)1342 326229

2 HAZARD IDENTIFICATION
Classification (Supply – Use): In compliance with EC Directive 1999/45.
Not classified
Adverse Physical, Chemical, Significant Human Health and Environmental Effects (See also box 11):
Contact with Carbon dioxide liquid may cause cold burns/frost bite.
Concentrations of 10% Carbon dioxide or more can produce unconsciousness or death and may cause asphyxiation in high concentrations.
Symptoms of asphyxiation may include loss of mobility and/or consciousness, and may come about so rapidly that victims may not be unaware and unable to protect themselves.
Avoid breathing gas.
No significant adverse effects expected under normal conditions of handling and use.

3 COMPOSITION / INFORMATION ON INGREDIENTS (SEE ALSO BOX 16)		
% w/w	Common*/Chemical Name, Elincs/Einecs & CAS No. of Ingredients	EC 1999/45 Classification
100	Carbon dioxide EINECS : 204-69-69 CAS : 124-38-9	Not classified.

CARBON DIOXIDE

4 FIRST-AID MEASURES (SEE ALSO "ADVERSE EFFECTS" IN BOX 2)	
Inhalation	Cylinder: This route of exposure is not anticipated. Fumigation bubble: Remove patient to fresh air, keep warm and at rest. Apply supportive measures if necessary and seek medical attention.
Eye Contact	Cylinder: This route of exposure is not anticipated. Fumigation bubble: Rinse affected eye with clean running water, or eyewash solution, for at least 15 minutes holding eyelids well apart. Rinse entire surface and do not allow run-off to contaminate unaffected eye. Seek medical attention.
Skin Contact	Cylinder: This route of exposure is not anticipated. Fumigation bubble: Remove and wash contaminated clothing immediately. Wash affected area thoroughly with soap and water. If the patient feels unwell seek medical advice.
Ingestion (Swallowing) Emergency Equipment Suggested	Cylinder and fumigation bubble: This route of exposure is not anticipated.
Note To Doctor	Appropriate first-aid equipment should be provided. For the UK this should be in accordance with the Health & Safety (First-Aid) Regulations 1981. See also the Approved Code of Practice "First-aid at Work". Further information on all Rentokil Initial formulations is lodged with the National Poisons Information Service in the UK.

5 FIRE FIGHTING MEASURES	
Fire Extinguisher Type	Use foam, water, or dry powder extinguishers.
Special Fire-Fighting Procedures	Wear suitable personal protective equipment.
Special Exposure Hazards	Cylinder: Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is non-flammable and does not support combustion. Move away from the container and cool with water from a protected position. If possible, stop flow of product. Keep adjacent cylinders cool by spraying with large amounts of water until the fire burns itself out. Fumigation bubble: Plastic may release toxic or irritant vapours.


6 ACCIDENTAL RELEASE MEASURES	
Personal Precautions (See also box 8) Environmental Precautions Clean-up Procedure (See also box 13)	Wear suitable personal protective equipment. Evacuate area. Wear self-contained breathing apparatus unless atmosphere is proved safe. Ensure adequate ventilation. Monitor oxygen level. Keep away from drains, surface and ground water, and soil. Ventilate the area.

7 HANDLING AND STORAGE (SEE ALSO BOX 8)	
Handling	Protect cylinders from physical damage. When moving cylinders, use a cart designed to transport cylinders. Before connecting the container for use, ensure that feedback from the system into the container is prevented. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Never lift a cylinder by its valve protection cap or guard. Always use back-flow protective device in piping. Prolonged periods of low temperature below -30°C should be avoided.
Storage	Store in original container in a cool, dry, ventilated place out of the reach of children and away from food, drink and animal feeding stuffs.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION	
Exposure Standard - Directive EC/98/24 (1st IOELV Directive)	Workplace Exposure Limit (WEL) for carbon dioxide is 9150mg/m ³ long-term exposure (8 hour Time Weighted Average) and 27400mg/m ³ short-term exposure (15 minute reference period).
Engineering Controls	Where exposure may occur, engineering controls, rather than the provision of Personal Protective Equipment (PPE) should be employed. On completion of a risk assessment, the following PPE may be required:
Eye Protection	Fumigation bubble: None necessary during normal handling and use. Cylinders: Suitable eye protection such as goggles.
Hand Protection	Fumigation bubble: None necessary during normal handling and use. Cylinders: Suitable hand protection such as gloves.
Skin Protection	None necessary during normal handling and use
Breathing Protection	Suitable respiratory protection such as Self-Contained Breathing Apparatus (SCBA) or positive pressure airline with mask are to be used in an oxygen-deficient atmosphere. Air-purifying respirators will not provide protection.
Environmental Exposure Controls	Use only in accordance with instructions given. An ecological hazard assessment indicates no specific restrictions on environmental release.

9 PHYSICAL AND CHEMICAL PROPERTIES			
Appearance and Odour	A colourless odourless gas with a faint acid taste.		
pH	Not applicable.	Solubility in Water	2.0g/L
Density	1.8mg/cm ³	Solubility in Other Solvents	Not determined.
Flash Point	Not applicable.	Explosive Properties	None.
Flammability	Non-flammable.	Combustibility	Non-combustible.
Boiling Point/Range	Starts at ca. -88.1°C	Oxidising Properties	None.
Vapour Density	1.519 (air=1)	Evaporation Rate	Not applicable.
Vapour Pressure	5730KPa	Partition Coefficient	At 25°C: Isobutanol & Water: 2.26 Olive oil & Water: 1.74
Viscosity	Not applicable.	Other Data	Critical temperature: 31.1°C. Relative density: 0.82 (water = 1).

CARBON DIOXIDE

14 TRANSPORT INFORMATION (INTERNATIONAL UNLESS OTHERWISE INDICATED)				
UN No.	UN1013	Tremcard Reference No.	20S1013	RIS Code
Transport Category	3	UK Hazchem EAC	2RE	N/A
ADR 2005 (International Road)	Class 2	ADR HIN	20	Labels
Proper Shipping Name	CARBON DIOXIDE.			
Limited Quantity Exemptions	Maximum quantity per inner receptacle is 120mL. Maximum quantity per outer package is 30kg. Combination packs only.			
Special Requirements	Not required. Packing Group Not required.			
IMDG 2004 (Sea)	Class 2.2	IMDG EMS	F-C, S-V	
Proper Shipping Name	CARBON DIOXIDE.			
Limited Quantity Exemptions	Maximum quantity per inner receptacle is 120mL. Maximum quantity per outer package is 30kg. Combination packs only.			
Special Requirements	Not required. Packing Group Not required.			
Note for Transport	Local, State or National requirements may apply to the carriage of this product.			

15 REGULATORY INFORMATION (HEALTH AND SAFETY INFORMATION (SEE ALSO BOX 2))	
Safety Phrases	Safety phrases are not required.
Additional Label Phrases	Safety data sheet available for professional user on request. To avoid risks to man and the environment, comply with the instructions for use.
Legislation	Labelling is in accordance with UK regulations implementing the EC Directive 1999/45. Additional labelling requirements may be necessary in accordance with other National legislation. Outside the UK, the registration of this product may be necessary before use and any additional local requirements must be observed at all times. The information given on this Safety Data Sheet (SDS) does not constitute an assessment in accordance with Control of Substances Hazardous to Health (COSHH) Regulations 2002, in the UK. Other National measures or guidance should be followed where appropriate.

16 Other Information and indication of revisions	
Packaging Information	A gas cylinder typically containing up to 35kg of CO ₂ .
Revisions	Changes have been made to the content of boxes 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 & 16 (as indicated by the thick lines on the left-hand side of the boxes) compared with issue 02.
Risk phrase text	Risk phrases are not required.

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SDS No. 473

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05 : 10 : 2006

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Before using any product, ensure that you read and understand its label.

The information contained in this safety data sheet is, to the best of our knowledge and belief, accurate and reliable at the time of publication. The information relates only to the specific material designated in this safety data sheet and may not be valid for such material if it is used in combination with any other material(s) or any other use than that specified herein. Rentokil Initial UK Ltd is not liable for the use of this product for any other purpose than that described in this safety data sheet. This does not affect your statutory rights. It is the user's responsibility to satisfy him/herself as to the suitability in completeness of such information for his/her own particular use.

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