

SAFETY DATA SHEET

058

Product Name **INSECTIGAS D**

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) 058 - MSDS NUMBER · PRODUCT CODE: 188
Use(s) INSECTICIDE · PESTICIDE
SDS Date 13 August 2012

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R21/22 Harmful in contact with skin and if swallowed.
R23 Toxic by inhalation.
R43 May cause sensitisation by skin contact.

SAFETY PHRASES

S1/2 Keep locked up and out of reach of children.
S28 After contact with skin, wash immediately with plenty of water.
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).
S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN Number 1967 **DG Division** 2.3
Packing Group None Allocated **Subsidiary Risk(s)** None Allocated
Hazchem Code 2XE

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content (v/v)
DICHLORVOS	CAS: 62-73-7 EC: 200-547-7	T;R24/25 T+;R26 Xn;R43 N;R50	5%
CARBON DIOXIDE	CAS: 124-38-9 EC: 204-696-9	Not Available	95%

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.

Product Name INSECTIGAS D

Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if breathing is difficult. Seek immediate medical attention. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention. Skin contact: Wash affected areas with a copious quantity of water. Remove contaminated clothing and wash before re-use.
Ingestion	Due to product form and application, ingestion is considered unlikely.
Advice to Doctor	Ensure adequate oxygenation as atropine may precipitate ventricular fibrillation in the presence of cyanosis. Antidotes: 1. Atropine sulphate. 2.5 mg IMI and repeat every 10 minutes until signs of atropinisation occur (flushed face, dry mouth, widely dilated pupils, fast pulse (>140). Repeat atropine to maintain mild atropinisation for 24-48 hours. Interruption of therapy has caused fatal pulmonary oedema or respiratory failure. 2. Cholinesterase reactivator. 2-PAM, Pralidoxime, Protopam, 2 pyridine aldoxime, methchloride (methiodide). This should be given after full atropinisation. (2 x 20 mL ampoules) by slow IV injection. Repeat dose in 30 minutes if respiration not improved. This dose may be repeated twice within each 24 hour period. 2 PAM is of low toxicity if used at above doses but can cause symptoms similar to OP poisoning if dosage is excessive. Avoid use of morphine, aminophylline, phenothiazines or respiratory depressants.
First Aid Facilities	Water or sterile saline solution for irrigation.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable.
Fire and Explosion	Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Ensure work area is thoroughly ventilated before re-entry.
Extinguishing	None required.
Hazchem Code	2XE 2 Water Fog (or fine water spray if fog unavailable) X Full protective clothing including Self Contained Breathing apparatus. E Evacuation of people in the vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

Spillage	If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use personal protective equipment. Carefully move material to a well ventilated remote area, then allow to discharge. Do not attempt to repair leaking valve or cylinder safety devices.
-----------------	--

7. STORAGE AND HANDLING

Storage	Do not store near incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits. Store and handle cylinders in compliance with AS4332 "The Storage and Handling of Gases in Cylinders" and AS2507 "The Storage and Handling of Pesticides".
Handling	Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Standards**

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Carbon dioxide	SWA (AUS)	5000	9000	30000	54000
Carbon dioxide in coal mines	SWA (AUS)	12500	22500	30000	54000
Dichlorvos (DDVP)	SWA (AUS)	0.1	0.9	--	--

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. Maintain vapour levels below the recommended exposure standard.

PPE**Eye / Face**

Wear safety glasses.

Hands

Wear PVC or nitrile gloves.

Body

Wear coveralls and safety boots.

Respiratory

Wear a Full-face Type A (Organic gases and vapours) respirator.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	COLOURLESS MIST
Odour	AROMATIC ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	-78°C (Approximately)
Melting point	NOT AVAILABLE
Evaporation rate	NOT APPLICABLE
pH	NOT APPLICABLE
Vapour density	1.53 (Air = 1)
Specific gravity	NOT APPLICABLE
Solubility (water)	0.759 cm ³ /cm ³ (Carbon dioxide)
Vapour pressure	6300 kPa @ 25°C (Approximately)
Upper explosion limit	NOT APPLICABLE
Lower explosion limit	NOT APPLICABLE
Autoignition temperature	NOT APPLICABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Partition coefficient	NOT AVAILABLE
Critical pressure	7380 kPa (Approximately)
% Volatiles	100 %
Critical temperature	31°C (Approximately)

10. STABILITY AND REACTIVITY**Chemical Stability**

Stable under recommended conditions of storage.

Material to Avoid

Dichlorvos will react with moisture to form corrosive breakdown products which attack mild steel. Avoid wetting surfaces which have plastic, painted, and similar surfaces or are very absorbent (eg. furnishings). Aluminium or stainless steel preferred. Teflon and nylon suitable but most rubbers and plastics are affected by carbon dioxide. Corrosive when moist.

Hazardous Decomposition Products

May evolve toxic gases if heated to decomposition.

Hazardous Reactions

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Toxic - asphyxiant. Dichlorvos (DDVP) may induce vomiting, nausea, diarrhoea, slow pulse, headache, giddiness, tearing, blurred vision, sweating, muscular weakness, staggering, abdominal cramping, difficulty breathing and loss of consciousness. Escaping liquid from the cylinder can form a dry ice powder like snow and leave a liquid DDVP residue. Uncontrolled release of compressed gas may result in physical injuries. Carbon dioxide is the body's regulator of the breathing function. It is normally present in the air at a concentration of 340 ppm by volume. An increase above this level may result in accelerated breathing and heart rate. Adverse health affects to long term exposure to carbon dioxide have not been reported. However, in environments such as submarines where exposure to levels of 0.5-1.0% may occur, specialist medical opinion should be sought on the effects of long term exposure. DDVP is absorbed through the skin, eyes, lungs and stomach. A relatively short exposure may cause poisoning by blocking cholinesterase in the blood and muscles. Symptoms of poisoning may be of sudden onset and should not be ignored. Children are more susceptible than adults. Dichlorvos is classified as possibly carcinogenic to humans (IARC Group 2B).																
Eye	Irritant. Contact with spray mist may result in irritation. Contact with dry ice powder could result in frostbite or cold burns.																
Inhalation	Toxic - asphyxiant. A toxic and asphyxiant mixture if directly inhaled. Inhalation of spray mist may result in asthmatic reactions.																
Skin	Irritant - toxic. Contact may result in dermatitis in sensitised individuals. Skin contact with dry ice powder could result in frostbite or cold burns.																
Ingestion	Ingestion is considered unlikely due to product form.																
Toxicity Data	<p>DICHLORVOS (62-73-7)</p> <table border="0"> <tr> <td>LC50 (inhalation)</td> <td>13 mg/m³/4 hours (mouse)</td> </tr> <tr> <td>LD50 (ingestion)</td> <td>17 mg/kg (rat)</td> </tr> <tr> <td>LD50 (intraperitoneal)</td> <td>15 mg/kg (rat)</td> </tr> <tr> <td>LD50 (intravenous)</td> <td>18 mg/kg (rat)</td> </tr> <tr> <td>LD50 (skin)</td> <td>750 ug/kg (rat)</td> </tr> <tr> <td>LD50 (subcutaneous)</td> <td>10.8 mg/kg (rat)</td> </tr> </table> <p>CARBON DIOXIDE (124-38-9)</p> <table border="0"> <tr> <td>LC50 (inhalation)</td> <td>470000 ppm/30M (rat)</td> </tr> <tr> <td>LCLo (inhalation)</td> <td>9 pph/5M (human)</td> </tr> </table>	LC50 (inhalation)	13 mg/m ³ /4 hours (mouse)	LD50 (ingestion)	17 mg/kg (rat)	LD50 (intraperitoneal)	15 mg/kg (rat)	LD50 (intravenous)	18 mg/kg (rat)	LD50 (skin)	750 ug/kg (rat)	LD50 (subcutaneous)	10.8 mg/kg (rat)	LC50 (inhalation)	470000 ppm/30M (rat)	LCLo (inhalation)	9 pph/5M (human)
LC50 (inhalation)	13 mg/m ³ /4 hours (mouse)																
LD50 (ingestion)	17 mg/kg (rat)																
LD50 (intraperitoneal)	15 mg/kg (rat)																
LD50 (intravenous)	18 mg/kg (rat)																
LD50 (skin)	750 ug/kg (rat)																
LD50 (subcutaneous)	10.8 mg/kg (rat)																
LC50 (inhalation)	470000 ppm/30M (rat)																
LCLo (inhalation)	9 pph/5M (human)																

12. ECOLOGICAL INFORMATION

Environment	When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect. Organophosphates are highly toxic to birds, mammals and fish. Bioaccumulation is unlikely as these chemicals would kill the organism before it would be taken into the tissues. Even when these chemicals are taken up by fish, they seldom persist for more than a week.
--------------------	--

13. DISPOSAL CONSIDERATIONS

Waste Disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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	1967	-	-
Proper Shipping Name	INSECTICIDE GAS, TOXIC, N.O.S. (Dichlorvos)	-	-

Product Name **INSECTIGAS D**

DG Class/ Division	2.3	-	-
Subsidiary Risk(s)	None Allocated	-	-
Packing Group	None Allocated	-	-
GTEPG	2B1		
Hazchem Code	2XE		
Other Information	Ensure cylinder is separated from driver and foodstuffs. Refer to requirements of the ADG code.		

15. REGULATORY INFORMATION

Poison Schedule	Classified as a Schedule 6 (S6) 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 The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders. For use as a space spray for the control of flying and crawling insects. The manufacturer reports that this product is registered in Australia as an Agricultural Chemical for use by licensed Pest Controllers.

Application method: Cylinder positioned vertically with valve at top. Portable cylinders connected to hand held spray gun or manifolded cylinders connected to fixed pipework distribution system with spray nozzles and controlled release.

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
	LD50	Lethal Dose, 50% / Median Lethal Dose
	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
1.1	Standard SDS Review
1.0	Initial SDS creation

Product Name **INSECTIGAS D**

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.

Prepared By Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

Revision: 1.1
SDS Date: 13 August 2012

End of SDS