
1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name PERMIGAS (NZ)
Synonym(s) 0013 - SDS NUMBER • PRODUCT CODE: 122 • SYNERGISED NATURAL AND SYNTHETIC PYRETHRINS INSECTICIDE

1.2 Uses and uses advised against

Use(s) INSECTICIDE • PESTICIDE
This product is an insecticide used in the control of insects in domestic and commercial use.

1.3 Details of the supplier of the product

Supplier name BOC LIMITED (NEW ZEALAND)
Address 988 Great South Road, Penrose, Auckland, NEW ZEALAND
Telephone +64 9 525 5600
Fax +64 9 525 7889
Email customer.servicenz@boc.com
Website <http://www.boc.co.nz>

1.4 Emergency telephone number(s)

Emergency 0800 111 333 (NZ only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO HAZARDOUS SUBSTANCES [CLASSIFICATION] REGULATIONS 2001

HSNO classification(s)

6.5A Substances that are respiratory sensitisers.
6.5B Substances that are contact sensitisers.
9.1A (H400) Substances that are very ecotoxic in the aquatic environment.
9.4B Substances that are ecotoxic to terrestrial invertebrates.

2.2 Label elements

Signal word DANGER

Pictogram(s)



Hazard

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H400 Very toxic to aquatic life.
H442 Toxic to terrestrial invertebrates.

PRODUCT NAME PERMIGAS (NZ)**Prevention**

P103	Read label before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.

Response

P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage

None allocated.

Disposal

P501	In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided.
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2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
PERMETHRIN	52645-53-1	258-067-9	0.4%
PYRETHRIN II	121-29-9	204-462-6	0.1%
CARBON DIOXIDE	124-38-9	204-696-9	90%
SOLVENT NAPHTHA	64742-89-7	-	9%
PIPERONYL BUTOXIDE	51-03-6	200-076-7	0.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
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 available.
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.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	No information provided.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO₂ cause increased respiration and headache.

4.3 Immediate medical attention and special treatment needed

Treat for asphyxia and cold burns.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.

5.2 Special hazards arising from the substance or mixture

Non flammable. Exposure to fire may cause containers to rupture/explode.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. 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.

5.4 Hazchem code

2TE

- 2 Fine Water Spray.
- T Wear full fire kit and breathing apparatus. Dilute spill and run-off.
- E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe 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.

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Carbon dioxide	WES (NZ)	5000	9000	30000	54000

PRODUCT NAME PERMIGAS (NZ)

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

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. It is recommended to maximise the effectiveness of this product, that it should be applied with artificial and natural ventilation closed. Hand held applications should commence at the furthest point from the exit and continue as the operator moves away from the spray drift towards the exit. Entry should be barred to areas in which fixed nozzle spraying occurs during spraying. Ventilation should be re-opened 2 hours after spraying has ceased.

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or cotton gloves.
Body	Wear coveralls and safety boots.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	MIXTURE FORMS MICRON SIZED AEROSOL PARTICLES WHEN RELEASED INTO AIRSPACE
Odour	SLIGHT ODOUR
Odour threshold	NOT AVAILABLE
pH	NOT APPLICABLE
Melting point	NOT AVAILABLE
Boiling point	-78.5°C
Flash point	NOT RELEVANT
Evaporation rate	NOT APPLICABLE
Flammability	NON FLAMMABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Vapour pressure	5500 kPa @ 15°C
Vapour density	1.53 (Air = 1)
Solubility (water)	0.14 %
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Specific gravity	NOT APPLICABLE

9.2 Other information

% Volatiles	100 %
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10. STABILITY AND REACTIVITY

10.1 Reactivity

Unreactive under normal conditions.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc). Dust of aluminium, chrome and manganese ignite and explode when heated in carbon dioxide. Incompatible with acrylaldehyde, aziridine, metal acetylides, sodium peroxide. Corrosive when moist.

10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Health hazard summary	Asphyxiant gas. Severe frostbite burns may result from exposure to cold vapour or liquid. Carbon dioxide in low concentrations of 3 to 5% by volume in air can cause increased respiration and headache. Concentrations of 8-15% cause headache, nausea and vomiting which may lead to unconsciousness if not moved to open air and given oxygen. Inhalation of a mixture containing no oxygen may result in unconsciousness from the first breath and death may follow in minutes. Adverse health effects 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. Escaping liquid from the cylinder can form a dry ice powder like snow and leave a liquid residue.																																						
Eye	Direct contact with evaporating liquid may result in cold burns, similar to frostbite injury, with possible permanent damage. Contact with dry ice powder could result in frostbite or cold burns.																																						
Inhalation	Asphyxiant. Effects are proportional to oxygen displacement. Acts as a simple asphyxiant by displacing oxygen in the lungs thereby diminishing the supply of oxygen to the blood and tissues. May cause sensitisation by inhalation. Inhalation of tetrahydrofuran vapours during processing may result in anaesthesia and have adverse effects on the central nervous system.																																						
Skin	Direct contact with the liquefied material or escaping compressed gas may cause cold burns similar to frostbite injury. Skin contact with dry ice powder could result in frostbite or cold burns. May cause sensitisation by skin contact.																																						
Ingestion	Ingestion is considered unlikely due to product form. Solid carbon dioxide will cause cold burns to mouth and throat.																																						
Toxicity data	<table border="0"> <tr> <td colspan="2">PERMETHRIN (52645-53-1)</td> </tr> <tr> <td>LC50 (inhalation)</td> <td>485 mg/m³ (rat)</td> </tr> <tr> <td>LD50 (ingestion)</td> <td>383 mg/kg (rat)</td> </tr> <tr> <td>LD50 (intraperitoneal)</td> <td>429 mg/kg (mouse)</td> </tr> <tr> <td>LD50 (intravenous)</td> <td>31 mg/kg (mouse)</td> </tr> <tr> <td>LD50 (skin)</td> <td>1750 mg/kg (rat)</td> </tr> <tr> <td>LD50 (subcutaneous)</td> <td>6600 mg/kg (rat)</td> </tr> <tr> <td colspan="2">PYRETHRIN II (121-29-9)</td> </tr> <tr> <td>LD50 (ingestion)</td> <td>200 mg/kg (rat)</td> </tr> <tr> <td>LDLo (ingestion)</td> <td>750 mg/kg child (15g death)</td> </tr> <tr> <td>TDLo (ingestion)</td> <td>500 mg/kg(6-15D preg rat) REP</td> </tr> <tr> <td colspan="2">CARBON DIOXIDE (124-38-9)</td> </tr> <tr> <td>LC50 (inhalation)</td> <td>470000 ppm/30M (rat)</td> </tr> <tr> <td>LCLo (inhalation)</td> <td>9 pph/5M (human)</td> </tr> <tr> <td colspan="2">PIPERONYL BUTOXIDE (51-03-6)</td> </tr> <tr> <td>LD50 (ingestion)</td> <td>2600 mg/kg (mouse)</td> </tr> <tr> <td>LD50 (skin)</td> <td>200 mg/kg (rabbit)</td> </tr> <tr> <td>LDLo (intraperitoneal)</td> <td>1000 mg/kg (mouse)</td> </tr> <tr> <td>TDLo (intraperitoneal)</td> <td>200 mg/kg (mouse; male; effects on fertility)</td> </tr> </table>	PERMETHRIN (52645-53-1)		LC50 (inhalation)	485 mg/m ³ (rat)	LD50 (ingestion)	383 mg/kg (rat)	LD50 (intraperitoneal)	429 mg/kg (mouse)	LD50 (intravenous)	31 mg/kg (mouse)	LD50 (skin)	1750 mg/kg (rat)	LD50 (subcutaneous)	6600 mg/kg (rat)	PYRETHRIN II (121-29-9)		LD50 (ingestion)	200 mg/kg (rat)	LDLo (ingestion)	750 mg/kg child (15g death)	TDLo (ingestion)	500 mg/kg(6-15D preg rat) REP	CARBON DIOXIDE (124-38-9)		LC50 (inhalation)	470000 ppm/30M (rat)	LCLo (inhalation)	9 pph/5M (human)	PIPERONYL BUTOXIDE (51-03-6)		LD50 (ingestion)	2600 mg/kg (mouse)	LD50 (skin)	200 mg/kg (rabbit)	LDLo (intraperitoneal)	1000 mg/kg (mouse)	TDLo (intraperitoneal)	200 mg/kg (mouse; male; effects on fertility)
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12. ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Not applicable.

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility in soil

Not applicable.

12.5 Other adverse effects

When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect. Toxic to terrestrial invertebrates.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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 ACCORDING TO LAND TRANSPORT RULE:
DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA



	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1968	1968	1968
14.2 Proper Shipping Name	INSECTICIDE GAS, N.O.S.	INSECTICIDE GAS, N.O.S.	INSECTICIDE GAS, N.O.S.
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards Marine Pollutant

14.6 Special precautions for user

Hazchem code 2TE

EMS F-C, S-V

Other information

Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Wherever possible use open vehicles or trailers. If cylinder must be carried in an enclosed van or car ensure good ventilation at all times by: a) Using a compartment within the vehicle permanently vented to the outside but sealed from the rest of the vehicle's interior, or b) Opening the vehicle's windows (this is not a preferred method). NOTE: A car boot would not normally be a ventilated compartment. All cylinders must be carried secured firmly so that they cannot move in transit. They must be carried wholly within the vehicle. Cylinders must be protected against damage from other cargo, particularly the valves. Unload the cylinders as soon as possible and move them to a well ventilated area. Do not store cylinders in an enclosed vehicle overnight or for periods longer than one hour. Do not use cylinders in a closed vehicle. Never transport cylinders with equipment attached unless the cylinder valve is shut and the cylinders are secured.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Approval code	HSR002535
Group standard	Compressed Gases (Subsidiary Hazard) Group Standard 2006
Inventory listing(s)	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information APPLICATION METHOD: Permigas must be dispensed with the correct high equipment using either a manual or automatic spray kit.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this 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
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Revision history

Revision	Description
1.2	Standard SDS Review
1.1	Standard SDS Review
1.0	Initial SDS creation

PRODUCT NAME PERMIGAS (NZ)

Report status

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

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier 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, importer or supplier.

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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