



1. IDENTIFICATION OF THE MATERIAL AND THE MANUFACTURER

Product Name	MAC SLAY SURFACE SPRAY RESIDUAL INSECTICIDE MAC SLAY CRACK & CREVICE RESIDUAL INSECTICIDE W/TRIGGER MAC SLAY FOGGER RESIDUAL INSECTICIDE All formats: 500ml, 150g aerosols		
Supplier Name	Arandee Ltd		
Address	108 Rockfield Road, Penrose, Auckland 1061, New Zealand		
Telephone	+64 (9) 579 5139		
Emergency	National Poisons Centre -24 hours	Australia	13 11 26
		New Zealand	0800 POISON 0800 764 766
E-mail	sales@arandee.co.nz		
Web Site	http://www.arandee.co.nz		
Synonym(s)	MAC Slay, Residual Spray		
Use(s)	MAC Slay Residual Insecticides are (D-Phenothrin & Permethrin) a synthetic, pyrethroid mix with high residual life and effective against insect pests. Used as residual insecticide in public health and border bio security control against mosquitoes, houseflies, fleas and cockroaches, silverfish, carpet beetles etc. (Okuno et al, 1976).		
Approval(s)	Ministry of Primary Industries approved Type A (all meats including dairy) Ministry of Primary Industries approved for use at approved at transitional facilities (for disinsection of shipping containers) Asure Quality approved Type A (including dairy) Environmental Protection Authority HSR101386		

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO GHS AND THE HAZARDOUS SUBSTANCES (MINIMUM DEGREE OF HAZARD) REGS 2001. CLASSIFIED AS A DANGEROUS GOOD, UNDER NZS 5433



Signal Word: DANGER

Flammable aerosol	Category 1
Skin sensitisation	Category 1
Respiratory sensitisation	Category 1
Specific Target Organ Systemic Toxicity (Repeat Exposure)	Category 2
Aquatic toxicity (Acute)	Category 1

MAC SLAY RESIDUAL INSECTICIDES
SURFACE SPRAY / CRACK & CREVICE / FOGGER

Residual Insecticides

Ecotoxic to terrestrial invertebrates

DG Class	2.1.2A	Flammable Aerosol
	6.3B	Skin irritancy
	6.4A	Eye Irritancy
	6.5A	Respiratory sensitisation
	6.5B	Contact sensitisation
	6.9B	Oral, Inhalation. Target organ systemic toxicity
	9.1A	Aquatic ecotoxicity
	9.4A	Terrestrial invertebrate ecotoxicity
	HAZARD STATEMENTS	H223
H317		May cause an allergic skin reaction
H334		May cause allergy or asthma symptoms or breathing difficulties if inhaled
H371		May cause damage to organs
H373		May cause damage to organs through prolonged or repeated exposure
H410		Very toxic to aquatic life with long lasting effects
H441		Very toxic to terrestrial invertebrates
PRECAUTIONARY STATEMENTS		P103
	P104	Read Safety Data Sheet before use
	P210	Keep away from heat/open flames. No Smoking
	P211	Do not spray on an open flame or other ignition source
	P251	Pressurized container. Do not pierce or burn even after use
	P261	Avoid breathing spray
	P264	Wash hands thoroughly after handling
	P270	Do not eat, drink or smoke when using this product
	P272	Contaminated work clothing should not be allowed out of the workplace
	P273	Avoid release to the environment
	P280	Wear protective gloves
P285	In case of inadequate ventilation wear respiratory protection	
RESPONSE STATEMENTS	P314	Get medical advice/attention if you feel unwell
	P321	Specific treatment (see information on this label)
	P363	Wash contaminated clothing before re-use
	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
	P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician
	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 STATEMENTS	P405	Store locked up
	P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C



DISPOSAL STATEMENTS P501 Dispose of in accordance with relevant local legislation

3. HAZARDS IDENTIFICATION COMPOSITION OF INGREDIENTS

Ingredient	Formula	Concentration	CAS Number
d-PHENOTHRIN	$C_{23}H_{26}O_3$	<5%	26046-85-5
PERMETHRIN	$C_{21}H_{20}Cl_2O_3$	<5%	52645-53-1
ISOPARAFFINIC HYDROCARBON	Proprietary	<26%	Multiple
HYDROCARBON PROPELLANT BLEND	$C_2H_2F_4$	<70%	74-98-6 106-97-8

4. FIRST AID MEASURES

Eye	Hold eyelids apart and flush continuously with water. Continue until advised to stop by the Poisons Information Centre, a doctor, or for at least 15 minutes. Keep patient calm.
Inhalation	Leave area of exposure immediately. If irritation persists, seek medical attention.
Skin	Gently flush affected areas with water. Seek medical attention, if irritation persists.
Ingestion	For advice, contact a Poisons Information Centre on 0800 764 766 (0800 POISON) or +64 9 579 5139 (New Zealand) or a doctor. If swallowed, DO NOT induce vomiting, as ingestion is considered unlikely, due to the product form.
Advice to Doctor	Treat symptomatically.
First Aid Facilities	Eye wash facilities should be provided.

5. FIRE FIGHTING MEASURES

Flammability	Highly flammable. Vapours may form explosive mixtures with air. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition temperatures. When handling a significant spillage, eliminate all ignition sources, including cigarettes, open flames, spark producing switches, heaters, naked lights, mobile phones, etc. Aerosol cans may explode when heated above 50 °C.
Fire and Explosion	Highly flammable, explosive vapour. Evacuate area and contact emergency services. Toxic gases may evolve, when heated. 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	Dry agent, carbon dioxide foam, or water fog. Prevent contamination of drains or waterways; absorb runoff with sand or similar.
HazChem	2Y

6. ACCIDENTAL RELEASE MEASURES

Spillage If large quantities of cans are punctured (bulk), clear area of all unprotected personnel and ventilate area. Wear splash-proof goggles, leather gloves, coveralls, and boots. Where inhalation risks exist, wear a Type A-Class P1 (Organic vapour and Particulate) respirator. Collect cans and allow to discharge outdoors. Absorb any residues with sand or similar and place in clean containers for disposal. DO NOT wash away into sewer.

7. HANDLING AND STORAGE

Handling Use safe work practices to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Keep out of the reach of children. DO NOT puncture aerosol cans or incinerate, even when empty.

Storage Store in a cool, dry well ventilated area, well away from oxidising agents, acids, alkalis, direct sunlight, heat or ignition sources, or foodstuffs. Ensure containers are adequately labelled, protected from physical damage, and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate fire protection.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation DO NOT directly inhale concentrated vapours. Use in well-ventilated areas. Mechanical extraction ventilation is recommended for poorly ventilated area. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

Exposure Standards
d-PHENOTHRIN – No TVL levels have been established by Worksafe.
PERMETHRIN – No TVL levels have been established by Worksafe.
LIQUIFIED PETROLEUM GAS (LPG) (68476-85-7) TWA: 1800 mg/m³

Personal Protection Equipment No personal protective equipment is required, normally. When an inhalation risk exists wear a Type A-Class P1 (Organic vapour and Particulate) Respirator. With prolonged use, wear PVC or rubber gloves and splash-proof goggles or safety glasses.





9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	COLOURLESS AEROSOL GAS	Solubility (water)	DISPERSABLE
Odour	SLIGHT, ETHEREAL-LIKE ODOUR	Specific Gravity @25°C	0.80 - 0.82 g/mL
pH	NOT AVAILABLE	% Volatiles	100 %
Vapour Pressure	NOT AVAILABLE	Flammability	HIGHLY FLAMMABLE
Vapour Density	> 1 (Air = 1)	Flash Point	< 20 °C (Propellant)
Melting Point	NOT AVAILABLE	Upper Explosion Limit	NOT AVAILABLE
Boiling Point	NOT AVAILABLE	Lower Explosion Limit	NOT AVAILABLE
Evaporation Rate	NOT AVAILABLE	Auto-ignition Temperature	NOT AVAILABLE

10. STABILITY AND REACTIVITY

Reactivity	Incompatible with oxidising agents (e.g. hypochlorite), alkalis, / alkali earth metals and finely divided metal powders (e.g. aluminium, barium, lithium), heat and ignition sources.
Decomposition Products	May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition temperatures.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	General population. The exposure of the general population is expected to be low and is not likely to present a hazard when it is used as recommended. Occupational exposure. With reasonable work practices, hygiene measures and Safety precautions is unlikely to be an occupational hazard. Asphyxiant narcotic. This product may only present a hazard with direct eye contact, prolonged and repeated skin contact or with vapour/gas inhalation at high levels.
Toxicity (Oral)	LD ₅₀ > 5000 mg/kg, Rat
Eye	Low irritant. Contact may result in lacrimation, pain, redness, and conjunctivitis. Prolonged contact may result in corneal burns, with possible permanent damage.
Inhalation	Low to moderate Irritant, narcotic, asphyxiant. Over exposure may result in upper respiratory tract irritation, nausea, and headache. At high levels; dizziness, breathing difficulties, and at very high levels, anaesthesia, cardiac arrhythmias, pulmonary oedema and unconsciousness.
Skin	Low irritant. Prolonged contact may result in irritation, redness, rash, dermatitis, and sensitisation.
Ingestion	Exposure considered unlikely, due to product form as an aerosol. Under normal conditions of use, ingestion is considered a highly unlikely, exposure route.



12. ECOLOGICAL INFORMATION

Acute Toxicity – Fish	LC ₅₀ , 96 hour: 0.0027mg/L Onchoryhncus mykiss (Rainbow Trout) – d-Phenothrin. LC ₅₀ , 96 hour: 0.1µg/L Onchoryhncus mykiss (Rainbow Trout) – Permethrin.
Chronic Toxicity – Fish	NOEC 1.1mg/L Onchoryhncus mykiss (Rainbow Trout) – d-Phenothrin. NOAEL 0.10ppb Cyprinodon variegatus (Sheepshead Minnow) – Permethrin.
Acute Toxicity – Aquatic Invertebrates	LC ₅₀ , 48 hour: 0.0043mg/L Daphnia magna – d-Phenothrin. LC ₅₀ , 48 hour: 0.55µg/L Ceriodaphnia dubia (Water Flea) – Permethrin.
Chronic Toxicity – Aquatic Invertebrates	NOEC 0.47mg/L Daphnia magna – d-Phenothrin. NOEC 0.039ppb Daphnia magna – Permethrin.
Persistence & Degradability	The degradability of the product is not known.
Bioaccumulative Potential	No data available on Bioaccumulation.
Environment	Environmental effects of the compound are extremely unlikely, due to packaging in the form of an aerosol. Ensure appropriate measures are taken to prevent this product from entering the environment through wastewater.

13. DISPOSAL CONSIDERATIONS

Waste Disposal	For small amounts, absorb contents with sand or similar and dispose of to an approved landfill site. DO NOT puncture or incinerate aerosol cans. Contact the manufacturer for additional information.
Legislation	Dispose of in accordance with relevant, local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG AND HZNO CODES.

	Shipping Name	UN No	Packing Group	DG Class	Subsidiary Risk(s)
Land	Compressed Gas	1950	None	2.1	None Allocated
	Flammable Aerosol		Allocated		
Sea	Compressed Gas	1950	III	2.1	None Allocated
	Flammable Aerosol				
Air	Compressed Gas	1950	None	2.1	None Allocated
	Flammable Aerosols		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).
NZIOC	All ingredients are listed on the New Zealand Inventory of Chemicals
NZEPA	Approved HSR101386
MPI	Type A approved for use with all meats (including dairy)
	Approved for disinfection at Transitional Facilities of Shipping Containers
ASUREQUALITY	Type A approved (including dairy)

16. OTHER INFORMATION

Additional Information	<p>ASPHYXIANTS (1): reduce the oxygen concentration by displacement, when present in the atmospheres, in high concentrations. As most simple asphyxiants are odourless, atmospheres deficient in oxygen do not provide adequate sensory warning of danger. Therefore, it is not generally appropriate to recommend an exposure standard for each asphyxiant, but instead warn of the need to maintain oxygen concentrations.</p> <p>Some asphyxiants may be given an exposure standard, due to their potential for narcotic effects at high concentrations, or an explosion hazard.</p>
Asphyxiants (2)	There is a significant hazard associated with workers entering poorly, ventilated areas (e.g. tanks) where oxygen levels may be deficient. An air supplied breathing apparatus may be required if adequate ventilation is not ensured. Refer to AS/NZS 2865 - Safe Working in a Confined Space.
Respirators	<p>In general, the best practice to avoid exposure is to use engineering controls, such as adequate ventilation, rather than the use of respirators (which should be limited).</p> <p>If respiratory equipment must be worn, ensure correct respirator selection and training is undertaken. 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.</p>
Abbreviations	<p>Mg/kg -milligrams per kilogram mg/m³ - milligrams per cubic metre mg/L -milligrams per Litre ppb-Parts per Billion NOEC -No Observed Effect Concentration NOAEL – No Observed Adverse Effect Level LD₅₀ – Dosage that is lethal to 50% of the test population LC₅₀ – Concentration that is lethal to 50%50% of the test population TWA – Time Weighted Average CAS# – Chemical Abstract Service number - uniquely identifies chemical compounds. NZEPA – New Zealand Environmental Protection Authority MPI – New Zealand Ministry of Primary Industries NZIOC – New Zealand Inventory of Chemicals WES – Workplace Exposure Standard</p>

**MAC SLAY RESIDUAL INSECTICIDES
SURFACE SPRAY / CRACK & CREVICE / FOGGER**

Residual Insecticides

**Personal
Protective
Equipment**

The recommendations for protective equipment contained within this SDS report are provided as a guide only, when dealing with an abnormal situation. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered, before the final selection of personal protective equipment is made.

**Health Effects
from Exposure**

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

Report Status

This report is based upon information provided by ingredient manufacturers, and third party experts. We believe that the information represents the current state of knowledge about safety and handling precautions that are appropriate for this product. Further clarification regarding any aspect of the product should be obtained directly from the Chief Chemist at Arandee Ltd. While Arandee 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, Arandee accepts no liability for any loss, injury, or damage (including consequential loss) which may be suffered, or incurred by any person, because of their reliance upon the information contained in this Safety Data Sheet.