



## SAFETY DATA SHEET

### AIRCRAFT PRE FLIGHT RESIDIAL SPRAY

Approved World Health Insecticide for Aircraft Dis-insection

#### 1. IDENTIFICATION OF THE MATERIAL AND THE MANUFACTURER

<b>Product Name</b>	<b>AIRCRAFT INSECTICIDE - PRE FLIGHT SPRAY (LONG LIFE)</b>		
	<b>Aerosols 40g, 50g, 75g, 100g and 340g</b>		
<b>Supplier Name</b>	Arandee Industries Ltd		
<b>Address</b>	108 Rockfield Road, Penrose, Auckland1642, New Zealand		
<b>Telephone</b>	+64 (9) 579 5139		
<b>Fax</b>	+64 (9) 579 7628		
<b>Emergency</b>	National Poisons Centre -24 hours	Australia	13 11 26
		New Zealand	0800 POISON 0800 764 766
<b>E-mail</b>	<a href="mailto:admin@arandee.co.nz">admin@arandee.co.nz</a>		
<b>Web Site</b>	<a href="http://www.arandee.co.nz">http://www.arandee.co.nz</a>		
<b>Synonym(s)</b>	ARANDEE LONG LIFE, MAC PRE FLIGHT SPRAY, AEROSOL NON FLAMMABLE		

**Use(s)** Aircraft Pre Flight Spray (permethrin) is a synthetic, pyrethroid with high residual life and lethal activity against household insect pests. Used as a residual insecticide in public health control against mosquitoes, houseflies, fleas and cockroaches (Okuno et al., 1976).  
Authorative approval by World Health Organisation, AQIS and MAF for the disinsection of aircraft cabin(s) and flight deck.

#### 2. HAZARDS IDENTIFICATION

NOT CLASSIFIED AS HAZARDOUS, ACCORDING TO NOHSC CRITERIA  
CLASSIFIED AS A DANGEROUS GOOD, UNDER ADG AND NZS 5433

UN Number	DG Class	HazChem Code	Dangerous Goods Risks
1950	2.2	2Y	Contains gas under pressure; may explode if heated Contains refrigerated gas; may cause cryogenic burns or injury
HSNO Class	E.U. Risk Phrase		Subsidiary Risks
6.5A	R42		May cause sensitisation by Inhalation (Cough)
6.5B	R43		May cause sensitisation by Skin Contact (Redness)
6.9B,	R33		Danger of Cumulative Effects (Nothing adverse known)
9.1A	R50		Very toxic to Aquatic Organisms
9.4A	R57		Toxic to Bees

#### 3. HAZARDS IDENTIFICATION COMPOSITION OF INGREDIENTS

Ingredient	Formula	Concentration	CAS Number
PERMETHRIN	$C_{21}H_{20}Cl_2O_3$	>2%	52645-53-1
ALIPHATIC HYDROCARBON LIQUID	Proprietary	<5%	64741-65-7
1,1,1,2-TETRAFLUOROETHANE (HFC 134A)	$C_2H_2F_4$	>90%	811-97-2



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#### 4. FIRST AID MEASURES

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<b>Eye</b>	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.
<b>Inhalation</b>	Leave area of exposure immediately. If assisting a victim avoid becoming a casualty, wear an Air-line respirator where an inhalation risk exists. Remove victim from exposure area & keep warm. If victim is not breathing apply artificial respiration & seek urgent medical attention.
<b>Skin</b>	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.
<b>Ingestion</b>	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor. If swallowed, do not induce vomiting.
<b>Advice to Doctor</b>	Treat symptomatically

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#### 5. FIRE FIGHTING MEASURES

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<b>Flammability</b>	Non flammable liquid. May evolve toxic gases (carbon oxides, hydrogen fluoride fluorides, hydrocarbons) when heated to decomposition. Will generate highly corrosive,, toxic, hydrogen fluoride gas at very high temperatures.
<b>Fire and Explosion</b>	Non-flammable. Evacuate area and contact emergency services. Toxic gases (hydrogen fluoride, fluorides, carbon oxides, hydrocarbons) may be evolved when heated. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use water-fog to cool intact containers and nearby areas.
<b>Extinguishing</b>	Non-flammable. Water spray the aerosols, to keep aerosols cool.
<b>HazChem</b>	2Y

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#### 6. ACCIDENTAL RELEASE MEASURES

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<b>Spillage</b>	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 an Air-line 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.
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#### 7. STORAGE AND HANDLING

<b>Storage</b>	Store in dry, cool, well ventilated, area, removed from heat (including direct sunlight), oxidising agents, alkalis, active metals, metal powders (e.g. aluminium, barium, lithium), and foodstuffs. Aerosol containers may explode if exposed to excessive heat (> 50 C). Ensure containers are adequately labelled and protected from physical damage.
<b>Handling</b>	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. Keep out of the reach of children. Do not puncture aerosol cans or incinerate, even when empty.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Ventilation</b>	Do not directly inhale concentrated vapours. Use in well ventilated areas. For poorly ventilated areas, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.
<b>Exposure Standards</b>	PERMETHRIN -No TVL levels have been established by regulators. 1,1,1,2-TETRAFLUOROETHANE (HFC 134A) (811-97-2) ES-TWA: 1000 ppm 1,1,1,2-Tetrafluoroethane WES-TWA: 1000 ppm
<b>Personal Protection Equipment</b>	If dealing with a high volume incident, wear safety glasses, splash-proof goggles and leather gloves. Where an inhalation risk exists, wear a Type A-Class P1 (Organic gases/vapours and Particulate) Respirator. When using large quantities or where heavy contamination is likely, wear coveralls. At high vapour levels, wear an Air-line respirator.



#### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	COLOURLESS GAS	<b>Solubility (water)</b>	NOT AVAILABLE
<b>Odour</b>	SLIGHT, ETHEREAL-LIKE ODOUR	<b>Specific Gravity</b>	1.212
<b>pH</b>	NOT AVAILABLE	<b>% Volatiles</b>	100 %
<b>Vapour Pressure</b>	0.583 MPa @ 25 C	<b>Flammability</b>	NON FLAMMABLE
<b>Vapour Density</b>	> 1 (Air = 1)	<b>Flash Point</b>	NOT RELEVANT
<b>Melting Point</b>	34 - 39 °C (Permethrin)	<b>Upper Explosion Limit</b>	NOT RELEVANT
<b>Boiling Point</b>	-26.4 C	<b>Lower Explosion Limit</b>	NOT RELEVANT
<b>Evaporation Rate</b>	NOT AVAILABLE	<b>Auto-ignition Temperature</b>	NOT AVAILABLE



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#### 10. STABILITY AND REACTIVITY

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

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#### 11. TOXICOLOGICAL INFORMATION

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<b>Health Hazard Summary</b>	<p>Permethrin was evaluated by the WHO/IPCS in 1990, with the following conclusions (IPCS, 1990, p13-14).</p> <p><u>General population.</u> The exposure of the general population to permethrin is expected to be low and is not likely to present a hazard when it is used as recommended.</p> <p><u>Occupational exposure.</u> With reasonable work practices, hygiene measures and safety precautions, permethrin is unlikely to be an occupational hazard..</p> <p><u>Asphyxiant narcotic.</u> This product may only present a hazard with direct eye contact, prolonged and repeated skin contact or with vapour/gas inhalation at high levels. May cause frost-bite or cold burns with direct contact.</p>
<b>Eye</b>	Low irritant. However, direct contact with evaporating liquid may result in severe cold burns with possible permanent damage.
<b>Inhalation</b>	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.
<b>Skin</b>	Low irritant. Prolonged contact may result in irritation. Contact with liquid from aerosol may result in frost-bite with severe tissue damage.
<b>Ingestion</b>	Exposure considered unlikely, due to product form of aerosol and under normal conditions of use, ingestion is considered an unlikely exposure route.
<b>Toxicity Data</b>	1,1,1 ,2-TETRAFLUOROETHANE (HFC 1 34A) (811-97-2) LC50 (Inhalation): 1500 g/m <sup>3</sup> /4 hour (rat)

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#### 12. ECOLOGICAL INFORMATION

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<b>Environment</b>	Environmental effects of the compound are extremely unlikely, due to packaging in the form of an aerosol. The WHO hazard classification of technical permethrin is: "unlikely to present an acute hazard in normal use"(WHO, 1988). Ensure appropriate measures are taken to prevent this product from entering the environment through waste water.
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#### 13. DISPOSAL CONSIDERATIONS

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<b>Waste Disposal</b>	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.
<b>Legislation</b>	

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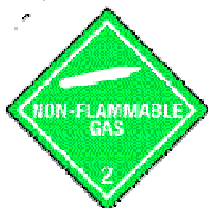
Dispose of in accordance with relevant, local legislation.

#### 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)	EPG
<b>Land</b>	Compressed Gas Non Flammable Aerosol	1950	None Allocated	2.2	None Allocated	2C1
	Compressed Gas Non Flammable Aerosol					
<b>Sea</b>	Compressed Gas Non Flammable Aerosol	1950	III	2.2	None Allocated	2C1
<b>Air</b>	AEROSOLS NON FLAMABLE	1950	Y203	2.2	None Allocated	2C1

Shipping Label



#### 15. REGULATORY INFORMATION

**Poison  
Schedule  
AICS**

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).  
All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

#### 16. OTHER INFORMATION

**Additional  
Information**

ASPHYXIANTS (1): When present in the atmospheres, in high concentrations, asphyxiants reduce the oxygen concentration by displacement. Atmospheres deficient in oxygen do not provide adequate sensory warning of danger, as most simple asphyxiants are odourless. Therefore, it is not generally appropriate to recommend an exposure standard for each asphyxiant, but instead warn of the need to maintain oxygen concentrations. Some asphyxiants may be given an exposure standard, due to their potential for narcotic effects at high concentrations, or an explosion hazard.

**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.



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#### Respirators

In general, the use of respirators should be limited, and engineering controls, such as adequate ventilation, employed instead, 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.

#### Abbreviations

##### ABBREVIATIONS:-

mg/m<sup>3</sup> - Milligrams per cubic metre

ppm - Parts Per Million

CNS - Central Nervous System

NOS - Not Otherwise Specified

pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 – 14, where 0 is highly acidic and 14 is highly alkaline.

TWA/ES - Time Weighted Average or Exposure Standard.

CAS# - Chemical Abstract Service number - uniquely identifies chemical compounds.

M - moles per litre, a unit of measure of concentration.

IARC - International Agency for Research on Cancer.

#### 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 will 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 a 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 to Arandee by the ingredient manufacturers, or that obtained from third party sources. It is believed to represent the current state of knowledge about 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 Arandee Industries 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, as a consequence of their reliance upon the information contained in this Safety Data Sheet.