

**Armed Forces Pest Management Board
Technical Guide No. 4**

Disinsection of Military Aircraft



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AFPMB Technical Guides

This is one of a series of Technical Guides (TGs) published by Armed Forces Pest Management Board (AFPMB). The AFPMB is a directorate within the Office of the Secretary of Defense Energy, Installations, and Environment that recommends policies and procedures, provides guidance, and coordinates the exchange of information related to pest management throughout the U.S. Department of Defense (DoD).

TGs are not policy documents; they provide technical guidance for the DoD pest management community and others. Accordingly, TGs should not be construed or referenced as policy. DoD pest management policy is provided by DoD Directive 4715.1E, "Environment Safety and Occupational Health;" DoD Instruction 4150.07, "DoD Pest Management Program;" other DoD directives and instructions; and implementing Component directives, instructions, or regulations. TGs and DoD pest management policy and other issuances are accessible at the AFPMB Web site: <http://www.acq.osd.mil/eie/afpmb/>.

Comments and Changes

Forward comments and recommended changes to osd.pentagon.ousd-atl.mbx.afpmb@mail.mil, or by fax to (301) 295-7473, or by mail to U.S. Army Garrison Forest Glen, Armed Forces Pest Management Board, ATTN: Chief, Information Services Division, 2460 Linden Lane, Bldg. 172, Silver Spring, MD 20910.

Acknowledgements

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1. Introduction: This technical guide establishes basic guidance for disinsection of DoD aircraft to meet destination country requirements. Component-specific guidance derived from it must preserve the basic intent and requirements.

1.1. References.

1.1.1. World Health Organization (WHO). 2016. *International Health Regulations (2005)*, third edition, accessible at <http://www.who.int/ihr/publications/9789241580496/en/> as of November 30, 2016.

1.1.2. WHO. 2013. Environmental Health Criteria 243, *Aircraft Disinsection Insecticides*, accessible at <http://www.who.int/ipcs/publications/ehc/ehc243.pdf?ua=1> as of November 30, 2016.

1.1.3. WHO. 2016. *Report of the WHO Ad-hoc Advisory Group on aircraft disinsection for controlling the international spread of vectorborne diseases, Geneva, Switzerland, 21-22 April 2016*, accessible at http://www.who.int/ihr/publications/WHO_HSE_GCR_2016_12/en/ as of November 30, 2016.

1.1.4. Commonwealth of Australia Department of Agriculture and Water Resources. 2014. *Schedule of aircraft disinsection procedures for flights into Australia and New Zealand*, accessible at <http://www.agriculture.gov.au/biosecurity/avm/aircraft/disinsection/procedures/schedule-aircraft-disinsection> as of November 30, 2016.

1.1.5. Environmental Protection Agency (EPA). 1996. Pesticide Registration Notice 96-3. Pesticide Products Used to Disinsect Aircraft, May 14, 1996, accessible at <https://www.epa.gov/pesticide-registration/prn-96-3-pesticide-products-used-disinsect-aircraft> as of January 26, 2017.

1.1.6. DD FORM 3044. OCT 2017. Pre-embarkation Certificate of Disinsection, accessible at <http://www.esd.whs.mil/portals/54/documents/dd/forms/dd/dd3044.pdf>.

1.2. Background:

1.2.1. Certain countries require inbound aircraft to be disinsected in order to reduce the accidental importation of potential disease vectors (e.g., mosquitoes), invasive agricultural pests, and other invasive arthropods.

1.2.2. The United States does not require aircraft arriving in the United States to be disinsected.

1.2.3. No product for in-flight disinsection of passenger or crew cabins is registered by the U.S. EPA.

1.2.4. Callington™ Aircraft Insecticide EPA Reg. No. 88144-1 is currently EPA-registered for disinsection of unoccupied military aircraft in cabin, crew, and cargo areas.

1.2.5. Callington™ 1-Shot® Aircraft Insecticide, EPA Reg. No. 83795-1, is currently EPA-registered for disinsection of aircraft holds.

1.2.6. This Technical Guide (TG) integrates the use of EPA-registered insecticides with WHO International Health Regulations and guidance from countries which have well-developed and internationally accepted practices for aircraft disinsection based on WHO guidance, such as Australia and New Zealand.

1.3. Scope: This TG applies to all DoD-owned or operated aircraft that must be disinfected per the DoD Foreign Clearance Guide (FCG, <https://www.fcg.pentagon.mil/>). This TG only applies to disinsection procedures for military aircraft and not to country-specific entry requirements such as immigration, customs, or quarantine requirements.

1.4. Rationale: To be consistent with country-specific disinsection standards.

1.5. Definitions.

1.5.1. Disinsection: the procedure whereby health measures are taken to control or kill insect vectors of human diseases present in baggage, cargo, containers, and aircraft.

1.5.2. Vector: an insect or other animal that transports an infectious agent that constitutes a public health risk.

1.5.3. Aircraft: any aircraft making an international voyage.

1.5.4. Baggage: personal effects of the traveler.

1.5.5. Cargo: material carried on an aircraft or in a container on an aircraft.

1.5.6. Crew: persons on board an aircraft who operate the aircraft.

1.5.7. Cabin: area where passengers or crew are accommodated during flight.

1.5.8. Flight deck: area where the crew operating the aircraft are accommodated.

1.5.9. Hold: area where only cargo is located and where no crew or passengers are accommodated at any time.

1.5.10. Pre-embarkation: the point when the aircraft is fully loaded with cargo, but prior to crew or passengers boarding the aircraft for flight.

1.5.11. DoD disinsection trained personnel: personnel who have completed DoD aircraft disinsection training, including DoD contractors employed in performing aircraft disinsection.

2. Aircraft Disinsection.

2.1. The WHO recommends four techniques for aircraft disinsection; of these,

2.1.1. Pre-embarkation disinsection is the only DoD authorized aircraft disinsection technique for disinsection of aircraft flight decks, cabins, and holds.

2.1.2. The techniques of Residual, Blocks Away, and Top of Descent are NOT approved for DoD aircraft disinsection.

2.2. Disinsection treatments shall be conducted in accordance with procedures detailed in section 3. Executive Airlift fleet will also have to comply with additional requirements identified per manufacturer guidance. DoD-certified applicators are the primary personnel who disinsect aircraft. If certified applicators are unavailable then trained, non-DoD-certified applicators (e.g., aircrew, aircraft maintenance personnel) may disinsect aircraft.

2.3. The DoD will ensure that aircrew, certified pest management personnel, and disinsection trained personnel are cognizant of and understand the requirements of:

2.3.1. The Foreign Clearance Guide and any host nation standards for aircraft disinsection;

2.3.2. This technical guide, TG No. 4, DoD Aircraft Disinsection.

2.3.3. Mandatory reporting of all applications of disinsection products per Department of Defense Instruction (DoDI) 4150.07, DoD Pest Management Program, May 29, 2008.

2.3.4. Weapon system specific guidance.

2.3.5. Treatment certification requirements:

2.3.5.1. A Certificate of Disinsection (CoD) DD Form 3044 (Appendix A) will be filled out and signed by the DoD disinsection-trained applicator upon completion of an aircraft disinsection procedure. DD Form 3044 is accessible at <http://www.esd.whs.mil/portals/54/documents/dd/forms/dd/dd3044.pdf>.

2.3.5.2. The original CoD must be retained onboard the aircraft to ensure documentation of compliance with DoD certification requirements.

2.3.5.3. A copy of the CoD, either a photocopy, scan, or second original, must be retained in the aircraft record per aircraft maintenance standard operating procedures..

3. Pre-Embarkation Disinsection Procedures.

3.1. Applicators must meet all technical and safety requirements of aviation and aircraft manufacturers when performing aircraft disinsection.

3.2. For the purposes of disinsection, any area in an aircraft where crew or passengers may potentially be accommodated during flight will be disinsected as a cabin area. C-130, C-5, and C-17 aircraft are to be considered passenger aircraft for the purposes of disinsection.

3.3. Disinsection will take place after the aircraft is fully loaded with cargo, if applicable, and prior to the commencement of crew or passengers boarding. Application will be completed following the below guidance, specific weapon system guidance, and aircraft ventilated per the product label prior to allowing passengers and crew to board.

3.4. Disinsection applicators will use personal protective equipment (PPE) in accordance with the product label and safety data sheet (SDS) at a minimum.

3.5. Treatment is effective for the duration of a single flight sector and thus must be performed at the last point of departure prior to arrival in the country requiring the aircraft be disinsected.

3.6. Disinsection products.

3.6.1. Callington™ Aircraft Insecticide EPA Reg. No. 88144-1 is EPA-registered for pre-embarkation disinsection of passenger, crew and hold areas of unoccupied military aircraft. See Appendix B for the label and SDS.

3.6.2. Callington 1-Shot is an EPA-registered product for the pre-embarkation disinsection of cargo hold areas only. Some countries may require hold areas be disinsected with this product. See Appendix C for the label and SDS.

3.7. Certification of Disinsection (CoD). The aircraft commander is responsible for ensuring that:

3.7.1. The DoD-trained applicator accurately completes all sections of the CoD detailing the flight deck, cabin and hold treatments, with any amendments crossed through and initialed.

3.7.2. The DoD-trained applicator signs the CoD.

3.7.3. The original CoD and the empty and/or partly used cans remain onboard until arrival at the destination.

3.7.4. A second CoD, either a photocopy, scan, or a second original, is provided to maintain with the aircraft records per aircraft maintenance standard operating procedures.

3.8. Pre-embarkation cabin disinsection procedures.

Step	Action: Cabin Treatment
1	Spraying must be completed using Callington Aircraft Insecticide (2% permethrin). See Appendix B for Callington Aircraft Insecticide label and SDS.
2	The treatment is to be carried out at the last airbase, airport, or airfield before departure to the destination.
3	<p>The treatment must take place after cargo has been loaded and prior to the commencement of passengers and crew boarding, in the absence of crew and passengers. Air conditioning system including any pre-conditioned air from a ground support unit must be turn off. Recirculation fans may be left on if essential to the operation of the aircraft, but set to the lowest rate.</p> <p>Note: Aeromedical Equipment is not required to be on board during applicable spraying and ventilation of aircraft.</p>
4	The aircraft must be fully loaded and service doors closed; one main entry door per level may remain open to facilitate operational requirements.
5	<p>Disinsection will take place after the aircraft is fully loaded with cargo, if applicable, and prior to the commencement of crew or passengers boarding. Application will be completed and aircraft ventilated per the product label prior to allowing passengers and crew to board and catering being completed.</p> <p>— For Aeromedical Evacuation missions, ventilate aircraft an additional 4 hours past the 30-minute treatment period to reduce risk of respiratory distress in high-risk patients.</p>
6	Overhead storage bins and sidewall lockers must be open during the spraying.
7	Direct spraying towards the open overhead storage bins and ceiling while walking along the aisle at a rate of not more than one step or one row of seats per second.
8	Spray all galleys, including those on lower levels and the lift access.
9	Spray all toilets and coat lockers for two seconds each.
10	Spray all crew rest areas and the flight deck for three seconds each, directing spray away from aircraft equipment and electronic systems.
11	All cans from the flight deck, cabin, and hold areas used for aircraft disinsection will be consolidated and remain on the aircraft with the CoD as evidence of disinsection.
12	Upon completion of aircraft disinsection, the DoD-trained applicator will complete all sections of the CoD IAW paragraph 3.7.
13	Applicators will fill out and submit DD 1532-1 per DoDI 4150.07.
14	Inability to meet the procedures prescribed in this guide and the country-specific information in the Foreign Clearance Guide must be reported to the Air Attaché for the destination country as soon as possible.

3.9. Hold disinsection must be performed in conjunction with pre-embarkation cabin disinsection.

Step	Action: Hold Treatment
1	Spraying must be completed using Callington Aircraft Insecticide (2% permethrin) unless a country specifically requires Callington 1-Shot (2% permethrin/2% d-phenothrin) in the Foreign Clearance Guide. See Appendix B for Callington Aircraft Insecticide label and SDS, and Appendix C for Callington 1-Shot label and SDS.
2	Spraying must be carried out manually at the last airbase, airport, or airfield before departure to the destination, after all cargo has been loaded and just prior to hold door closure.
3	Aerosol cans must be discharged into each hold in such a manner as to ensure that all parts of the holds have been disinsected.
4	Ensure all cargo doors for the affected deck are closed and other personnel have vacated the area prior to commencing disinsection.
5	Advise the air and ground crew when hold spraying is about to commence. Aerosols can set off the smoke alarm, so the crew should be fully aware prior to any disinsection taking place.
6	During disinsection and for a period of five minutes after completion of the spray, the aircraft's air conditioning must remain off. Recirculation fans may be left on if essential to the operation of the aircraft, but set to the lowest rate.
7	Discharge the aerosols by walking away from the spray stream, and vacate the area upon completion of spraying.
8	When cargo restricts access, discharge the aerosol cans evenly throughout the aircraft and on top of cargo in order to achieve better coverage. Aerosol cans must be discharged into each hold in such a manner as to ensure that all parts of the holds/cargo have been disinsected. When cargo restricts access to all sides, all surfaces including floors and cargo will be sprayed thoroughly to cover unexposed area.
9	All cans from the flight deck, cabin, and hold areas used for aircraft disinsection will be consolidated and remain on the aircraft with the CoD as evidence of disinsection.
10	Upon completion of aircraft disinsection, the DoD-trained applicator will complete all sections of the CoD IAW paragraph 3.7.
11	Applicators will fill out and submit DD 1532-1 per DoDI 4150.07.
12	Inability to meet the procedures prescribed in this guide and the country-specific information in the Foreign Clearance Guide should be reported to the Air Attaché at the destination country as soon as possible.

3.10. Hold procedures to be performed when transporting service animals in hold area. This guide does not address country-specific animal quarantine procedures, which can be found in the Foreign Clearance Guide.

Step	Action: Hold Treatment with Service Animals
1	When service animals are carried in the lower hold, disinsection must be carried out prior to the loading of animals, but after all other cargo has been loaded.
2	Follow steps in paragraph 3.9. above
3	Open hold only for loading animals and close immediately after loading animals to avoid reinfestation.

3.11. Host nation personnel will not embark the aircraft due to the sovereign immune status of U.S. State (including DoD) aircraft. DoD aircraft will NOT be disinsected by the host nation after arrival. As a result, biosecurity officers do not board sovereign immune aircraft to conduct inspection or other official activities. Biosecurity officers will continue to carry out biosecurity functions without boarding the aircraft.

3.12. The applicator is responsible for ensuring that a certificate detailing the treatment is completed. The certificate for pre-flight and cabin disinsection must be carried onboard the aircraft and made available to be sighted by an officer/inspector upon arrival. The minimum requirements for certification are detailed in Appendix A.

3.13. **Australia only: After the certificate has been sighted by an officer, the airline must keep the certificate for a period of 12 months.

3.14. **New Zealand only: The certificates are to be made available for collection by an Inspector upon arrival.

3.15. Country-Specific Reporting Standards can be found in the Foreign Clearance Guide information for the destination country.

Appendix A

Certificate of Disinsection

PRE-EMBARKATION CERTIFICATE OF DISINSECTION		Reports Control Symbol DD-AT&L(AR)2656	OMB No. TBD OMB approval expires: TBD
<p>The public reporting burden for this collection of information, TBD, is estimated to average ten minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>Response with original signatures will accompany the aircraft to destinations requiring aircraft disinsection in accordance with the Foreign Clearance Guide. A copy of this form, will be sent to the pest management coordinator for the base of departure, where the disinsection was completed.</p>			
<p>This is to certify that the below aircraft has been disinsectioned on <input style="width: 100px;" type="text"/> (MM/DD/YYYY) in accordance with AFPMB Technical Guide 4, Disinsection of Military Aircraft.</p>			
PART I			
1. AIRCRAFT REGISTRATION (TAIL NUMBER)			
2. PORT OF DEPARTURE		3. DATE OF DEPARTURE	
4. MISSION DESIGN SERIES			
PART II			
CABIN DISINSECTION			
5. Size of cans used (grams)			
6. Serial numbers of cans used			
7. Cabin disinsection completed by:			
a. NAME (Last, First, Middle Initial)		b. JOB TITLE and GRADE/RANK	
c. ORGANIZATION		d. SIGNATURE	
PART III			
HOLD DISINSECTION			
8. Size of cans used (grams)			
9. Serial numbers of cans used			
10. Hold disinsection completed by: <input type="checkbox"/> Check if same as above			
a. NAME (Last, First, Middle Initial)		b. JOB TITLE and GRADE/RANK	
c. ORGANIZATION		d. SIGNATURE	

INSTRUCTIONS

The prescribing document is as issued by using DoD component.

A. PART I: The following information is provided by the insecticide applicator or aircrew prior to disinsection.

- (1) Aircraft registration (tail number). List the aircraft registration number/tail number.
- (2) Port of departure. The airport/base where the aircraft left the United States. This will also be the location where the disinsection takes place.
- (3) Date of departure. The date that the aircraft is scheduled to leave the port of departure.
- (4) Mission-design series. The type and model of aircraft, i.e. C-130J, KC-135R, etc.

B. PART II: Cabin Disinsection: The following information is provided by the insecticide applicator.

- (5) Size of cans used. List the amount and unit of measure, usually grams, of insecticide cans.
- (6) Serial numbers/lot numbers of cans used. In the provided spaces, list the serial numbers or the lot numbers of the insecticide cans sprayed in the air craft cabin. If more than six cans were used, list the seventh and further numbers at the bottom of the form.
- (7) Cabin disinsection completed by:
 - (a) Name. Legibly print the full name of the person who performed the cabin disinsection.
 - (b) Job title and grade/rank. Print the job title and grade or rank of the person who performed the cabin disinsection.
 - (c) Organization. The insecticide applicator's organization, government agency or commercial firm.
 - (d) Signature. The insecticide applicator's signature is required.

C. PART III: Hold Disinsection. The following information is provided by the insecticide applicator.

- (8) Size of cans used. List the amount and unit of measure, usually grams, of insecticide cans.
- (9) Serial numbers/lot numbers of cans used. In the provided spaces, list the serial numbers or the lot numbers of the insecticide cans sprayed in the aircraft cargo hold. If more than six cans were used, list the seventh and further numbers at the bottom of the form.
- (10) Hold disinsection completed by:
 - (a) Name. Legibly print the full name of the person who performed the hold disinsection.
 - (b) Job title and grade/rank. Write the job title and grade or rank of the person who performed the hold disinsection.
 - (c) Organization. The insecticide applicator's organization, government agency or commercial firm.
 - (d) Signature. The insecticide applicator's signature is required.

D. DISPOSITION OF FORM:

TRANSMISSION: Form may be electronically transmitted, faxed, mailed or hand-carried. Form is "FOR OFFICIAL USE ONLY," and must be protected as such.

FILING: Original Pre-embarkation Certificate of Disinsection (PCD), with original signatures in Parts II and III will accompany aircraft to destinations requiring aircraft disinsection in accordance with the Foreign Clearance Guide. A copy of PCD, must be maintained on file for one year in the office of the base pest management coordinator. Completion of disinsection will be recorded in IPMIS/NOPRS/DD 1532 and in the aircraft maintenance log.

Appendix B

Label and Safety Data Sheet (SDS) for Callington™ Aircraft Insecticide (2% permethrin) for pre-embarkation cabin and cargo area disinsection



Callington
AIRCRAFT
INSECTICIDE

2% Permethrin
FOR MILITARY USE ONLY

Aerosol insecticide for unoccupied US military aircraft only. For indoor use only.

ACTIVE INGREDIENTS:

*Permethrin.....	2.0%
OTHER INGREDIENTS.....	98.0%
Total.....	100.0%

* cis/trans ratio: Min 25% (±) cis and Max 75% (±) trans

KEEP OUT OF REACH OF CHILDREN
CAUTION

EPA Reg. No. 88144-1
EPA Est. No. 85163-THA-001
Manufactured by:
Callington Haven Pty Ltd
30 South Street, Rydalmere NSW 2116 Australia
Phone: +61 2 9898 2788
Email: australia@callington.com
Website: www.callington.com
Net Contents: 3.38 fl oz (100g)

Read entire label before each use. **FIRST AID** If on skin or clothing: • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15-20 minutes • Call a poison control center and/or doctor for treatment advice **HOT LINE NUMBER:** Have the product container or label with you when calling a poison control center or doctor, or when going for treatment. In case of medical emergencies or health and safety inquiries or in case of fire, leaking or damaged containers, information may be obtained by calling 1-800-222-1222. **PRECAUTIONARY STATEMENTS:** Hazards to Humans & Domestic Animals - CAUTION. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wear long sleeved shirt, long pants, shoes, and socks and chemical resistant gloves (such as barrier laminate, nitrile or neoprene rubber, PVC, or viton). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. **Personal Protective Equipment (PPE):** Applicators must wear the following baseline personal protective equipment (PPE): long sleeved shirt, long pants, shoes, socks, and chemical resistant gloves (such as barrier laminate, nitrile or neoprene rubber, PVC, or Viton). **User Safety Requirements** • Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. • Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. **User Safety Recommendations:** Users should remove clothing/PPE immediately if pesticide gets inside. Wash the outside of gloves before removing. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. **Physical or Chemical Hazards:** Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting. **DIRECTIONS FOR USE:** It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **Use Restrictions:** • Do not apply to occupied aircraft. Apply only to the interior of unoccupied US military aircraft cabin, crew, and cargo areas. • Applications must be performed by United States Department of Defense (DoD) uniformed or civilian personnel who have received proper training in the disinsection procedure by DoD certified pesticide applicators. If no DoD trained uniformed or civilian personnel are available, pest management professionals who have been contracted to perform pest management work on a military installation in the United States and have received this training can also perform the disinsection procedure. • Only protected handlers may be in the area during application. • Do not apply this product in a way that will contact workers or other persons, either directly or through drift. • Do not enter or allow others to enter treated area until sprays have dried. • Do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated areas have been thoroughly ventilated. **For use in military aircraft:** For control of mosquitoes, house flies, and gnats present in aircraft cabin, crew, and cargo areas of military aircraft. Suitable for use in all types of military aircraft. Application is to be made by aerosol delivery from pressurized cans. Use while the aircraft is on the ground and empty of flight crew or passengers prior to embarkation (pre-flight). Before take-off and after loading of all cargo is complete, close all doors, hatches and ventilation openings. Turn off ventilation system. Apply at a rate of approximately 35 g product per 100 m³ (0.00441 lb. permethrin/can). Spray at arm's length, away from the applicator, starting at the rear of the aircraft and moving forward to the exit. Ensure the spray pattern is not obstructed by any cargo. After application, allow the product to dry for a minimum of 1 hour total, as follows: the aircraft must remain closed for 30 minutes after application; then open aircraft exterior doors, to include cargo doors, and allow the aircraft to ventilate for a minimum of 30 minutes, prior to passengers and crew boarding the aircraft. **STORAGE AND DISPOSAL:** Do not contaminate water, food or feed by storage or disposal. **Storage:** Do not store near heat or open flame. Store in cool dry area, away from children. **Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility. **Container Handling:** Non-refillable container. Do not reuse or refill this container. Do Not Puncture or Incinerate! **If Empty:** This container may be recycled in aerosol recycling centers. At present, there are only a few such centers in the country. Before offering for recycling, empty the can by using the product according to the label (DO NOT PUNCTURE!). If recycling option is not available, discard in the trash.

Callington Aircraft Insecticide 2% Permethrin

Callington Haven Pty Ltd

Chemwatch: 62763

Version No: 6.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 18/06/2015

Print Date: 17/07/2018

L.GHS.U.S.A.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Callington Aircraft Insecticide 2% Permethrin
Synonyms	permethrin spray
Proper shipping name	Aerosols, non-flammable, (each not exceeding 1 L capacity)
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Residual insecticide for preflight spraying of cabin lockers, toilets, flight deck and crew rest areas.
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Callington Haven Pty Ltd
Address	30 South Street Rydalmere NSW2116 Australia
Telephone	+61 2 9898 2700
Fax	+61 2 9475 0449
Website	www.callingtonhaven.com
Email	customerservice@callington.com

Emergency phone number

Association / Organisation	Chemwatch
Emergency telephone numbers	1800 039 008 (24 hours), +61 3 9573 3112 (24 hours)
Other emergency telephone numbers	Not Available

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
877 715 9305	877 715 9305	+612 9186 1132

Once connected and if the message is not in your preferred language then please dial 01

Una vez conectado y si el mensaje no está en su idioma preferido, por favor marque 02

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Non-flammable aerosol Category 3, Gas under Pressure (Compressed gas), Skin Sensitizer Category 1, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
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Label elements

Hazard pictogram(s)	
SIGNAL WORD	WARNING
Hazard statement(s)	H229 Pressurised container. May burst if heated. H280 Contains gas under pressure; may explode if heated.

Continued...

Callington Aircraft Insecticide 2% Permethrin

H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P251	Pressurized container: Do not pierce or burn, even after use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.

Precautionary statement(s) Storage

P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
52645-53-1	2	permethrin
Not Available	>60	propellant, as HFC
		NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay, if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> Flush skin and hair with running water (and soap if available). Remove any adhering solids with industrial skin cleansing cream. DO NOT use solvents. Seek medical attention in the event of irritation.
Inhalation	<ul style="list-style-type: none"> If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.
Ingestion	<ul style="list-style-type: none"> For advice, contact a Poisons Information Centre or a doctor. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

Most important symptoms and effects, both acute and delayed

Continued...

Callington Aircraft Insecticide 2% Permethrin

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known
-----------------------------	------------

Special protective equipment and precautions for fire-fighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered to be a significant fire risk. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ Aerosol cans may explode on exposure to naked flames. ▶ Rupturing containers may rocket and scatter burning materials. ▶ Hazards may not be restricted to pressure effects. ▶ May emit acrid, poisonous or corrosive fumes. ▶ Decomposes on heating and may emit toxic fumes of carbon monoxide (CO). <p>Other combustion products include: carbon dioxide (CO2) phosgene chlorides and fluorides</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Wear protective clothing, impervious gloves and safety glasses. ▶ Shut off all possible sources of ignition and increase ventilation. ▶ Wipe up. ▶ If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. ▶ Undamaged cans should be gathered and stowed safely.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses ▶ No smoking, naked lights or ignition sources. ▶ Increase ventilation. ▶ Stop leak if safe to do so. ▶ Water spray or fog may be used to disperse / absorb vapour. ▶ Absorb or cover spill with sand, earth, inert materials or vermiculite. ▶ If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated. ▶ Undamaged cans should be gathered and stowed safely. ▶ Collect residues and seal in labelled drums for disposal.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Continued...

Callington Aircraft Insecticide 2% Permethrin

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ Avoid smoking, naked lights or ignition sources. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ DO NOT incinerate or puncture aerosol cans. ▶ DO NOT spray directly on humans, exposed food or food utensils. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Store in an upright position. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ No smoking, naked lights, heat or ignition sources. ▶ Keep containers securely sealed. ▶ Contents under pressure. ▶ Store in a cool, dry, well ventilated area; away from incompatible materials. ▶ Avoid storage at temperatures higher than 40 deg C. ▶ Protect containers against physical damage. ▶ Check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	Avoid reaction with alkali metals, magnesium and magnesium alloys, zinc, aluminium alloys (2% magnesium). Avoid contact with plastics such as methacrylate polymers, polyethylene and polystyrene.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Callington Aircraft Insecticide 2% Permethrin	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
permethrin	Not Available	Not Available
propellant, as HFC	Not Available	Not Available

MATERIAL DATA

Exposure controls

Appropriate engineering controls	General exhaust is adequate under normal operating conditions.
Personal protection	
Eye and face protection	<p>No special equipment for minor exposure i.e. when handling small quantities.</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ No special equipment needed when handling small quantities. ▶ OTHERWISE Wear general protective gloves, e.g. light weight rubber gloves. Or as required: Wear chemical protective gloves, e.g. PVC. Wear safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities.

Continued...

Callington Aircraft Insecticide 2% Permethrin

OTHERWISE:

- ▶ Overalls.
- ▶ Barrier cream.
- ▶ Eyewash unit.

DO NOT spray on hot surfaces.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid in aerosol pack. Contains non-combustible propellant.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not available.	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not available.	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not available.	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Elevated temperatures. ▶ Presence of open flame. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The vapour/mist is discomforting to the upper respiratory tract and lungs Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea. WARNING Intentional misuse by concentrating/inhaling contents may be lethal. Not considered to cause discomfort through normal use.
Ingestion	Overexposure is unlikely in this form. The mist is discomforting to the gastro-intestinal tract
Skin Contact	The material may be slightly discomforting to the skin if exposure is prolonged
Eye	The mist is discomforting to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/ or other transient eye damage/ulceration Not considered to cause discomfort through normal use.

Continued...

Callington Aircraft Insecticide 2% Permethrin

Chronic	Principal routes of exposure are usually by skin contact and inhalation of vapour/spray mist As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.	
Callington Aircraft Insecticide 2% Permethrin	TOXICITY Not Available	IRRITATION Not Available
permethrin	TOXICITY dermal (rat) LD50: 1750 mg/kg ^[2] Oral (rat) LD50: 383 mg/kg ^[2]	IRRITATION Skin (rabbit): 500 mg/24h - mild
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

PERMETHRIN	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential; the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p> <p>The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. [* The Pesticides Manual, Incorporating The Agrochemicals Handbook, 10th Edition, Editor Clive Tomlin, 1994, British Crop Protection Council]</p> <p>Oral (rat) LD50: 430-4000 mg/kg * Oral (mouse) LD50: 540-2960 mg/kg * cis/trans ratio: 40:60 cis/trans ratio: 20:80 ADI: 0.05 mg/kg for nominal cis-trans 40:60 and 25:75 isomers only</p>		
Acute Toxicity	<input type="checkbox"/>	Carcinogenicity	<input type="checkbox"/>
Skin Irritation/Corrosion	<input type="checkbox"/>	Reproductiveity	<input type="checkbox"/>
Serious Eye Damage/Irritation	<input type="checkbox"/>	STOT - Single Exposure	<input type="checkbox"/>
Respiratory or Skin sensitisation	<input checked="" type="checkbox"/>	STOT - Repeated Exposure	<input type="checkbox"/>
Mutagenicity	<input type="checkbox"/>	Aspiration Hazard	<input type="checkbox"/>

Legend: - Data available but does not fill the criteria for classification
 - Data available to make classification
 - Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Callington Aircraft Insecticide 2% Permethrin	Not Available	Not Available	Not Available	Not Available	Not Available
permethrin	LC50	96	Fish	0.00062mg/L	4
	EC50	48	Crustacea	0.000112mg/L	4
	EC50	96	Algae or other aquatic plants	0.068mg/L	4
	BCFD	24	Algae or other aquatic plants	1mg/L	4
	NOEC	96	Crustacea	0.000025mg/L	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
permethrin	HIGH	HIGH

Continued...

Callington Aircraft Insecticide 2% Permethrin

Bioaccumulative potential

Ingredient	Bioaccumulation
permethrin	LOW (LogKOW = 7.4267)

Mobility in soil

Ingredient	Mobility
permethrin	LOW (KOC = 178400)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	
	<ul style="list-style-type: none"> ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate. ▶ DO NOT incinerate or puncture aerosol cans. ▶ Bury residues and emptied aerosol cans at an approved site.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	

Land transport (DOT)

UN number	1950
UN proper shipping name	Aerosols, non-flammable, (each not exceeding 1 L capacity)
Transport hazard class(es)	Class : 2.2 Subrisk : Not Applicable
Packing group	Not Applicable
Environmental hazard	Environmentally hazardous
Special precautions for user	Hazard Label : 2.2 Special provisions : Not Applicable

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee)

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	IMDG Class : 2.2 IMDG Subrisk : Not Applicable
Packing group	Not Applicable
Environmental hazard	Marine Pollutant
Special precautions for user	EMS Number : F-D, S-U Special provisions : 63 190 277 327 344 381 959 Limited Quantities : 1000ml

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

Continued...

Callington Aircraft Insecticide 2% Permethrin

PERMETHRIN(52645-53-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US - Massachusetts - Right To Know Listed Chemicals

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US EPCRA Section 313 Chemical List

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	Yes
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Pyrethrins	1	0.454

State Regulations

US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AICS	Y
Canada - DSL	N (permethrin)
Canada - NDSL	N (permethrin)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	N (permethrin)
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in bracket(s))

SECTION 16 OTHER INFORMATION

Revision Date	18/06/2015
Initial Date	04/06/2003

Other information

Ingredients with multiple cas numbers

Name	CAS No
------	--------

Continued...

permethrin | 52645-53-1, 54774-45-7, 57608-04-5, 93388-66-0, 63364-00-1, 60018-94-2, 75497-64-2

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.

end of SDS

Appendix C

Label and Safety Data Sheet (SDS) for Callington™ 1-Shot® (2% permethrin/2% d-phenothrin) insecticide for pre-embarkation cargo area disinsection only

Callington 1-Shot Aircraft Insecticide

- Aerosol insecticide for cargo holds only.
- For indoor use only.

ACTIVE INGREDIENTS:

*d-Phenothrin	2.0 %
**Permethrin	2.0 %
OTHER INGREDIENTS:	<u>96.0 %</u>
	100.0 %

* cis/trans ratio: Min 20% (+/-) cis and Max 80% (+/-) trans
** cis/trans ratio: Min 25% (+/-) cis and Max 75% (+/-) trans

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

EPA Reg. No.: 83795-1
EPA Est. No.: 85163-THA-001
Net Contents: 5.25 ounces (150g)

Callington

Callington Haven Pty Ltd (Incorporated in NSW, ACN 000 632 404)
30 South Street, Rydalmere NSW 2116 Australia.
Email: enquires@calhaven.com.au Website: www.callingtonhaven.com
Telephone: (612) 9898 2788 Fax: (612) 9684 4215

Callington

**NON-FLAMMABLE
NON-TOXIC GAS**

Read entire label before each use.
PRECAUTIONARY STATEMENTS
Hazards To Humans & Domestic Animals – CAUTION
Causes moderate eye irritation. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in area during application.
Physical or Chemical Hazards - Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage or disposal.
Storage: Do not store near heat or open flame. Store in cool dry area, away from children.
Container Disposal: Do Not Puncture or Incinerate! *If empty:* This container may be recycled in aerosol recycling centers. At present, there are only a few such centers in the country. Before offering for recycling, empty the can by using the product according to the label (DO NOT PUNCTURE). If recycling option is not available, discard in the trash. *If partly filled:* Call your local solid waste agency or 1-800-CLEANUP for disposal instructions.
WARRANTY: Read the entire Directions for Use, Conditions, and Warranty before using this product. If terms are not acceptable, return the unopened product container at once. Buyer assumes all responsibility for safety and use not in accordance with directions.
FIRST AID
If swallowed: • Call poison control center or doctor immediately for treatment advice.
• Have person sip a glass of water if able to swallow.
• Do not induce vomiting unless told to do so by the poison control center or doctor.
• Do not give anything by mouth to an unconscious person.
If inhaled: • Move person to fresh air.
• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
• Call a poison control center or doctor for treatment advice.
If on skin or clothing: • Take off contaminated clothing.
• Rinse skin immediately with plenty of water for 15-20 minutes.
• Call a poison control center or doctor for treatment advice.
If in eyes: • Hold eye open and rinse slowly and gently with water for 15-20 minutes.
• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
• Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of Medical emergencies or health and safety inquiries or in case of fire, leaking or damaged containers, information may be obtained by calling 1-800-222-1222.
DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
For use on aircraft (cargo storage areas only): For control of insect pests that may have entered cargo hold including flying and crawling insects (including mosquitoes, flies and cockroaches). Suitable for use in all types of aircraft. The aerosol can be sprayed into the cargo hold manually or automatically using aircraft mounted equipment. Ensure the spray pattern is not obstructed by any cargo. Use while the aircraft is empty of passengers and on the ground prior to take off and after landing. Before take off and after loading of all cargo is complete, close all doors, hatches and ventilation openings. Turn off ventilation system. Apply a minimum of 0.35 ounces per 1,000 cubic feet not to exceed 1.4 ounces per 1,000 cubic feet. After system is complete open doors and hatches and turn on ventilation system and ventilate for 30 minutes with fresh air prior to boarding the aircraft with passengers. After landing remove all passengers, close all doors, hatches and ventilation openings and reapply insecticide as instructed above.

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Callington Haven

Chemwatch: 62764

Version No: 7.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 07/02/2014

Print Date: 02/07/2014

Initial Date: Not Available

S.GHS.USA.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Callington 1 Shot Aerosol Insecticide for Cargo Hold
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	Aerosols, non-flammable, (each not exceeding 1 L capacity)
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Use according to manufacturer's directions. Application is by spray atomisation from a hand held aerosol pack Used to kill crawling and flying insects in aircraft cargo holds.
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Details of the supplier of the safety data sheet

Registered company name	Callington Haven
Address	30 South Street Rydalmere 2116 NSW Australia
Telephone	+61 2 9898 2788
Fax	+61 2 9684 4215
Website	www.callingtonhaven.com
Email	sales@calhaven.com.au

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	1800 039 008 (24 hours), +61 3 9573 3112 (24 hours)
Other emergency telephone numbers	1800 039 008 (24 hours), +61 3 9573 3112 (24 hours)

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
877 715 9305	+612 9186 1132	Not Available

Once connected and if the message is not in your preferred language then please dial 01

Una vez conectado y si el mensaje no está en su idioma preferido, por favor marque 02

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

	Min	Max
Flammability	0	
Toxicity	0	
Body Contact	0	
Reactivity	1	
Chronic	2	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme



GHS Classification	Non-flammable aerosol Category 3, Skin Sensitizer Category 1, Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2
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Label elements

GHS label elements	
---------------------------	---

SIGNAL WORD	WARNING
--------------------	----------------

Hazard statement(s)

H229	Pressurised container: May burst if heated.
H317	May cause an allergic skin reaction
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Precautionary statement(s): Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

Precautionary statement(s): Response

P321	Specific treatment (see advice on this label).
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s): Storage

P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
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Precautionary statement(s): Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
-------------	--

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
	NotSpec.	phenothrin, as
26002-80-2	<10	sumithrin
52645-53-1	<10	permethrin
Not Available	>60	propellant, as HFC
	NotSpec.	NOTE: Manufacturer has supplied full ingredient
	NotSpec.	information to allow CHEMWATCH assessment.

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	<p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold the eyelids apart and flush the eye with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	<p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	<p>Not considered a normal route of entry.</p> <ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice.

Indication of any immediate medical attention and special treatment needed

	<p>Treat symptomatically.</p> <p>For chronic or short term repeated exposures to pyrethrum and synthetic pyrethroids:</p> <ul style="list-style-type: none"> ▶ Mammalian toxicity of pyrethrum and synthetic pyrethroids is low, in part because of poor bioavailability and a large first pass extraction by the liver. ▶ The most common adverse reaction results from the potent sensitising effects of pyrethrins. ▶ Clinical manifestations of exposure include contact dermatitis (erythema, vesiculation, bullae); anaphylactoid reactions (pallor, tachycardia, diaphoresis) and asthma. [Eilenhorn Barceloux] ▶ In cases of skin contact, it has been reported that topical application of Vitamin E Acetate (alpha-tocopherol acetate) has been found to have high therapeutic value, eliminating almost all skin pain associated with exposure to synthetic pyrethroids. [Incitec]
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SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	<p>SMALL FIRE:</p> <ul style="list-style-type: none"> ▶ Water spray, dry chemical or CO2 <p>LARGE FIRE:</p> <ul style="list-style-type: none"> ▶ Water spray or fog.
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Special hazards arising from the substrate or mixture

Fire Incompatibility	<ul style="list-style-type: none"> ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves.
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Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Non combustible. ▶ Not considered to be a significant fire risk. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ Aerosol cans may explode on exposure to naked flames.
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SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Wear protective clothing, impervious gloves and safety glasses. ▶ Shut off all possible sources of ignition and increase ventilation.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	<ul style="list-style-type: none"> ▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	Avoid storage with oxidisers

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Not Available

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
Callington 1 Shot Aerosol Insecticide for Cargo Hold	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
sumithrin	Not Available	Not Available
permethrin	Not Available	Not Available
propellant, as HFC	Not Available	Not Available

Exposure controls

Appropriate engineering	General exhaust is adequate under normal operating conditions.
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Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

controls	
Personal protection	
Eye and face protection	No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE: For potentially moderate or heavy exposures: <ul style="list-style-type: none"> Safety glasses with side shields. NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.
Skin protection	See Hand protection below
Hands/feet protection	NOTE: <ul style="list-style-type: none"> The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. No special equipment needed when handling small quantities.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: <ul style="list-style-type: none"> Overalls. Skin cleansing cream. Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the "Forsberg Clothing Performance Index". The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
Callington 1 Shot Aerosol Insecticide for Cargo Hold Not Available

Material	CPI

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type A Filter of sufficient capacity (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear colourless liquid; does not mix with water. Supplied in aerosol pack containing non-flammable HFC propellant.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (% vol)	Not Available
Vapour pressure (kPa)	250	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution(1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Elevated temperatures. ▶ Presence of open flame. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<p>Spray mist may produce discomfort</p> <p>Acute effects from inhalation of high vapour concentrations may be chest and nasal irritation with coughing, sneezing, headache and even nausea.</p> <p>Inhalation of pyrethrins may produce nausea, vomiting, sneezing, serious discharge from the nose, blocked nose and asthma. High concentrations may produce excessive excitement, inco-ordination, tremors, muscle paralysis and death (due to failure of breathing).</p> <p>WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.</p>				
Ingestion	<p>Overexposure is unlikely in this form.</p> <p>Ingestion of pyrethrins may produce nausea, vomiting, headache, muscle tremors, shock and perhaps death. Its fatal human dose is estimated at 100 grams per 70 kg man (1430 mg/kg).</p>				
Skin Contact	<p>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p>				
Eye	<p>There is some evidence to suggest that this material can cause eye irritation and damage in some persons.</p>				
Chronic	<p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Chronic poisoning by natural pyrethrins may result in convulsion, paralysis with extreme muscle tone, rapid and uneven heart beat, liver and kidney damage, or death. Natural pyrethrins may cause hypersensitivity especially if past exposure has occurred.</p>				
Callington 1 Shot Aerosol Insecticide for Cargo Hold	<table border="1"> <tr> <td>TOXICITY</td> <td>IRRITATION</td> </tr> <tr> <td>Not Available</td> <td>Not Available</td> </tr> </table>	TOXICITY	IRRITATION	Not Available	Not Available
TOXICITY	IRRITATION				
Not Available	Not Available				

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

	TOXICITY	IRRITATION
sumithrin	Oral (rat) LD50: >10000 mg/kg	
	Not Available	Not Available
	TOXICITY	IRRITATION
permethrin	Dermal (mouse) LD50: >10000 mg/kg	Skin (rabbit): 500 mg/24h - mild
	Dermal (rabbit) LD50: >2000 mg/kg	
	Dermal (rat) LD50: 1750 mg/kg	
	Inhalation (rat) LC50: 485 mg/m3	
	Oral (g.pig) LD50: 4000 mg/kg	
	Oral (rabbit) LD50: 4000 mg/kg	
	Oral (rat) LD50: 383 mg/kg	
	Oral (rat) LD50: 6000 mg/kg *	
	Not Available	Not Available

Not available. Refer to individual constituents.

SUMITHRIN	Skin (rat) LD50: >10000 mg/kg [OHS]
PERMETHRIN	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. Oral (rat) LD50: 430-4000 mg/kg * Oral (mouse) LD50: 540-2960 mg/kg * cis/trans ratio: 40:60 cis/trans ratio: 20:80 ADI: 0.05 mg/kg for nominal cis-trans 40:60 and 25:75 isomers only

Acute Toxicity	⊖	Carcinogenicity	⊖
Skin Irritation/Corrosion	⊖	Reproductivity	⊖
Serious Eye Damage/Irritation	⊖	STOT - Single Exposure	⊖
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	⊖
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend: ✓ - Data required to make classification available
✗ - Data available but does not fill the criteria for classification
⊖ - Data Not Available to make classification

CMR STATUS

CARCINOGEN	permethrin	US Environmental Defense Scorecard Suspected Carcinogens	OPP-CAN
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SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Not Available | Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate. ▶ DO NOT incinerate or puncture aerosol cans.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	

Land transport (DOT)

UN number	1950	
Packing group	Not Applicable	
UN proper shipping name	Aerosols, non-flammable, (each not exceeding 1 L capacity)	
Environmental hazard	No relevant data	
Transport hazard class(es)	Class : 2.2	
Special precautions for user	Hazard Label	2.2
	Special provisions	Not Applicable

Air transport (ICAO-IATA / DGR)

UN number	1950	
Packing group	Not Applicable	
UN proper shipping name	Aerosols, non-flammable	
Environmental hazard	No relevant data	
Transport hazard class(es)	ICAO/IATA Class	2.2
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	2L
Special precautions for user	Special provisions	A98A145A167A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
Passenger and Cargo Limited Maximum Qty / Pack	30 kg G	

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Sea transport (IMDG-Code / GGVSee)

UN number	1950	
Packing group	Not Applicable	
UN proper shipping name	AEROSOLS	
Environmental hazard	No relevant data	
Transport hazard class(es)	IMDG Class	2.2
	IMDG Subrisk	See SP63
Special precautions for user	EMS Number	F-D, S-U
	Special provisions	63 190 277 327 344 959
	Limited Quantities	See SP277

SECTION 15 REGULATORY INFORMATION

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

<p>sumithrin(26002-80-2) is found on the following regulatory lists</p>	<p>"International Maritime Dangerous Goods Requirements (IMDG Code)", "US American Cleaning Institute Cleaning Product Ingredient Inventory", "US Harmonized Tariff Schedule - Pharmaceutical Appendix", "US - New Jersey Right to Know Hazardous Substances (Spanish)", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)", "US Department of Transportation (DOT), Hazardous Material Table", "US - Massachusetts Toxics Use Reduction Act (TURA) listed chemicals", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US EPCRA Section 313 Chemical List", "US - California - 22 CCR - Hazardous Waste Codes - Appendix XII", "US - New Jersey Environmental Hazardous Substances List", "US - New Jersey Right to Know Hazardous Substances (English)", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "US - California - 22 CCR - Hazardous Wastes and Hazardous Materials - Appendix X", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Pressure-sensitive adhesives", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "US California - Aerosol Coating Product Emissions - Maximum Incremental Reactivity (MIR) Values", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)", "Sigma-Aldrich Transport Information", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Delaware Pollutant Discharge Requirements - Reportable Quantities", "International Air Transport Association (IATA) Dangerous Goods Regulations", "US FDA List of "Indirect" Additives Used in Food Contact Substances", "FAO/WHO Codex Alimentarius - Pesticide Residues in Food and Feed (English)", "US - Massachusetts Oil & Hazardous Material List", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US FDA CFSAN Food Additives Status List"</p>
<p>permethrin(52645-53-1) is found on the following regulatory lists</p>	<p>"International Maritime Dangerous Goods Requirements (IMDG Code)", "US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)", "US American Cleaning Institute Cleaning Product Ingredient Inventory", "US - New Jersey Right to Know Hazardous Substances (Spanish)", "US Harmonized Tariff Schedule - Pharmaceutical Appendix", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US ATSDR Priority List of Hazardous Substances", "International Maritime Dangerous Goods Requirements (IMDG Code) - Marine Pollutants", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "US EPA Integrated Risk Information System (IRIS)", "US - California Permissible Exposure Limits for Chemical Contaminants", "US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US - Hawaii Air Contaminant Limits", "US - Idaho - Limits for Air Contaminants", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)", "US - Minnesota Chemicals of High Concern", "US Department of Transportation (DOT), Hazardous Material Table", "US - Wisconsin Control of Hazardous Pollutants - Emission Thresholds, Standards and Control Requirements (Pesticides, Rodenticides, Insecticides, Herbicides or Fungicides)", "US - New York List of Hazardous Substances", "US - Massachusetts Toxics Use Reduction Act (TURA) listed chemicals", "US EPCRA Section 313 Chemical List", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US - California - 22 CCR - Hazardous Waste Codes - Appendix XII", "US - New Jersey Environmental Hazardous Substances List", "US - New Jersey Right to Know Hazardous Substances (English)", "WHO Model List of Essential Medicines - Adults", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "OSPAR Substances removed from the List of Substances of Possible Concern", "US - California - 22 CCR - Hazardous Wastes and Hazardous Materials - Appendix X", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of</p>

Continued...

Callington 1 Shot Aerosol Insecticide for Cargo Hold

Adhesives - Pressure-sensitive adhesives", "US - Oregon Permissible Exposure Limits (Z-1)", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US NFPA 499 Combustible Dusts", "US - Michigan Exposure Limits for Air Contaminants", "US - Minnesota Hazardous Substance List", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "US California - Aerosol Coating Product Emissions - Maximum Incremental Reactivity (MIR) Values", "US - Washington Permissible exposure limits of air contaminants", "US NIOSH Recommended Exposure Limits (RELs)", "US - North Dakota Air Pollutants - Guideline Concentrations", "US - Alaska Limits for Air Contaminants", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US - Arizona Water Quality Standards for Surface Waters", "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)", "Sigma-Aldrich Transport Information", "WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established", "US - Rhode Island Hazardous Substance List", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Delaware Pollutant Discharge Requirements - Reportable Quantities", "US - Minnesota Permissible Exposure Limits (PELs)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Massachusetts - Right To Know Listed Chemicals", "US FDA List of "Indirect" Additives Used in Food Contact Substances", "US ACGIH Threshold Limit Values (TLV)", "FAO/WHO Codex Alimentarius - Pesticide Residues in Food and Feed (English)", "US - Connecticut Hazardous Air Pollutants", "US OSHA Permissible Exposure Levels (PELs) - Table Z1", "US - Michigan Polluting Materials List", "US - Massachusetts Oil & Hazardous Material List", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US FDA CFSA Food Additives Status List", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US - Pennsylvania - Hazardous Substance List"

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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