

**ARMED FORCES PEST MANAGEMENT BOARD
TECHNICAL GUIDE NO. 4**

**DISINSECTION OF MILITARY
AIRCRAFT**



**APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED
July 2021**

**CLEARED
For Open Publication**

Jul 27, 2021

Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

OSD PAO approval for release: 28 July 2021

27 July 2021

ARMED FORCES PEST MANAGEMENT BOARD

TECHNICAL GUIDE NO. 4, DISINSECTION OF MILITARY AIRCRAFT

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This Technical Guide Supersedes AFPMB TG 4, dated July 2018.

Record of Changes:

Change No.	Date	Location

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27 July 2021

FOREWORD

This is one in a series of Technical Guides (TGs) published by Armed Forces Pest Management Board (AFPMB). The AFPMB is a directorate within the Office of the Under Secretary of Defense for Acquisitions and Sustainment that recommends policies and procedures, provides guidance, and coordinates the exchange of information related to pest management throughout the US 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/>.

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 US Army Garrison Forest Glen, Armed Forces Pest Management Board, ATTN: Chief, Strategy and Information Division, 2460 Linden Lane, Bldg. 172, Silver Spring, MD 20910.

This July 2021 revision of TG 4 incorporates input provided by Mr. Steve Gay, Border Clearance Services, Biosecurity New Zealand, Ministry for Primary Industries, to comply with changes to aircraft disinsection recently introduced by the World Health Organization (WHO). TSgt Curtis Hoofman, USAF, Operations NCO, US Defense Attaché Office, Wellington, New Zealand provided key coordination. Final editing and coordination were provided by the AFPMB Strategy & Information Division.

The May 2021 revision was provided by Mr. Kenneth R. Barnes, 436th MSG, Dover AFB, DE; Lt Col Timothy J. Davis, AFPMB; MSgt Daniel C. Fink, 60th CES, Travis AFB, CA; Mr. Michael R. Hackler, HQ Air Mobility Command, Scott AFB, IL; and Mr. Armando L. Rosales, Air Force Civil Engineer Center, Tyndall AFB, FL. AFPMB Strategy & Information Division staff provided clearance coordinations and final editing.

The initial 2018 version of this document was researched and written by CDR Frederick M. Stell and Dr. Douglas A. Burkett of the AFPMB. COL Jamie A. Blow, Mr. Terry L. Carpenter, Maj Leah D. Chapman, and Lt Col Timothy J. Davis of the AFPMB provided subject matter expertise input, technical editing, and key coordination. Significant contributions to the final version were made by Mr. Armando L. Rosales and Mr. Donald A. Teig of the Air Force Civil Engineer Center, Tyndall AFB, FL and MSgt Abraham Rodriguez of the Defense Attaché Office, US Embassy Canberra, Australia.

Document: Technical Guide 4, *Disinsection of Military Aircraft*

Superseding: July 2018

Description: This technical guide provides basic instruction concerning DoD aircraft disinsection to meet country entry requirements for outside the continental United States (OCONUS) missions and for certain continental United States (CONUS) flights that must comply with United States Department of Agriculture (USDA) agricultural clearance procedures. This Technical Guide applies to DoD-certified pesticide applicators, contracted state-certified pesticide applicators, flight crew, and aircraft maintenance personnel.

Reasons for Document:

- This guide was developed to assist those associated with aircraft disinsection missions to meet host country entry requirements, USDA Quarantine Regulations, Environmental Protection Agency (EPA) compliance and DoD policy.

Impact:

- Aircraft disinsection requires funding for approved pesticide, personal protective equipment (PPE), man-hours to apply insecticide, and aircraft downtime for treatment and ventilation. Failure to legally and safely implement aircraft disinsection may result in delayed or cancelled missions, and aircraft quarantine in host countries until the cargo and airframe can be certified as pest-free.

CHAPTER 1 INTRODUCTION

1-1 BACKGROUND

This TG establishes basic guidance for disinsecting DoD aircraft to meet destination country, USDA and each state's Department of Agriculture quarantine requirements. Component-specific guidance derived from it must preserve the basic intent and requirements.

1-2 PURPOSE AND SCOPE

This TG provides basic DoD aircraft disinsection instruction to meet the US Foreign Clearance Guide (FCG) country entry requirements for OCONUS missions. Additionally, this TG addresses certain CONUS missions that must comply with USDA agricultural clearance procedures. The CONUS disinsection procedures are mandated by the USDA/Animal and Plant Health Inspection Service (APHIS), 7 Code of Federal Regulations (CFR) § 301.48. While disinsection procedures for OCONUS are mandated by host country laws and regulations, the CONUS-based USDA/APHIS quarantine program disinsection requirements follow US law, and vary by season, location, weather conditions, and pest distribution.

1-3 APPLICABILITY

This TG applies to DoD-certified pesticide applicators, contracted State-certified pesticide applicators, flight crew, Aerial Port, US Defense Attaché Office, and maintenance personnel who must prepare aircraft to enter areas that mandate pest-free airframes and cargo. Additionally, this TG applies to all DoD-owned, operated or contracted aircraft that must be disinsected per the DoD FCG (<https://www.fcg.pentagon.mil/>) or in accordance with 7 CFR § 301 (<https://www.aphis.usda.gov/aphis/ourfocus/planthealth/complete-list-of-electronic-manuals>).

1-4 GENERAL AIRCRAFT REQUIREMENTS

Host countries and the USDA require that aircraft are 100% pest-free and accompanied by documentation of compliance, such as Certification of Disinsection (DD Form 3044). Some countries may require their own host country-specific form. In certain circumstances, the host country may also require personnel to physically present expended aerosol cans to prove disinsection was performed. Always check the FCG to determine country entry requirements.

1-5 DOD FOREIGN CLEARANCE GUIDE-DIRECTED DISINSECTION

Host-country laws and regulations determine aircraft entry requirements. While the United States may negotiate standards, ultimately the host country defines the requirement of an aircraft and cargo to gain country approval or disapproval. Required measures for aircraft entry are provided to military personnel via the FCG by region and country. Failure to meet host-country requirements may result in mission cancelation or delay. Note: a host country may segregate and isolate a DoD aircraft for a period of

time to determine if the aircraft is cleared or not. However, US military aircraft are sovereign to the United States and may not be boarded and treated with pesticides by the host country.

1-6 USDA/APHIS-DIRECTED DISINSECTION

The mission of APHIS is to protect US food, agriculture, and natural resources from the entry, establishment, and spread of pests. United States law (7 CFR) grants the Department of Agriculture authority to implement agricultural inspection, quarantine, and clearance authority via the Plant Protection and Quarantine (PPQ) program. Currently, the Japanese Beetle Program (7 CFR § 301.48) is the only program requiring frequent and/or reoccurring disinsection of military aircraft in CONUS.

The USDA requires disinsection at certain high-risk airports when their Japanese Beetle National Operations Program Manager determines conditions are conducive to beetle spread. The USDA/APHIS constantly monitors pest populations and tailors its requirements accordingly.

While the Japanese Beetle Program mandates application of insecticide to certain aircraft based upon location, destination, and risk, a number of other pest prevention programs require inspection and clearance procedures, including the Gypsy Moth and Brown Tree Snake Programs. This TG will only focus on programs that mandate pesticide treatment to aircraft.

While current CONUS aircraft disinsection procedures are primarily directed at limiting the spread of Japanese beetles, risk of the introduction of new pest species varies over time and season. This TG may apply to public health or agricultural pests. When pest species potentially threaten US agriculture, the USDA is the lead agency for action and clearance procedures.

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CHAPTER 2 TECHNICAL REQUIREMENTS

2-1 GENERAL PRINCIPLES OF AIRCRAFT DISINSECTION

Some countries require disinsection of inbound aircraft to reduce the risk of importing potential disease vectors (e.g., mosquitoes), invasive agricultural pests, and other invasive arthropods.

DoD-certified pesticide applicators are the primary personnel disinsecting aircraft. If certified applicators are unavailable then trained, non-DoD-certified applicators (e.g., aircrew, aircraft maintenance personnel) may disinsect aircraft (see 2-4, Disinsection Training Requirements).

The United States does not routinely require disinsection of aircraft arriving from OCONUS, but may require treatment if certain pests are present. Domestic quarantine notices may require aircraft disinsection for CONUS movement. For example, Federal Regulation 7 CFR § 301.48 *Japanese Beetle* regulates movement from quarantined airports to certain US destinations and may require aircraft disinsection.

The US EPA has not registered any products for in-flight disinsection (when the aircraft is occupied by passengers or crew), and these products are not approved for use by the DoD. ***Aircraft disinsection with crew, passengers, or working animals on board at the time of insecticide treatment is only performed as a last resort if the host country determines infestation on arrival per the FCG.***

2-2 PROCEDURES FOR COUNTRY ENTRY

Disinsection per the DoD FCG (Appendix E).

Pre-embarkation aircraft disinsection is the only DoD-approved procedure to enter foreign ports. Note: the United States does not require disinsection for mosquito-borne diseases in CONUS or from OCONUS.

World Health Organization (WHO)-recommended preflight or inflight procedures for aerosol insecticide application using Pre-embarkation, Pre-departure and Residual in cabin areas with passengers and/or crew onboard are prohibited by the EPA and the DoD and should only be performed under extraordinary circumstances. Country-specific exceptions are explained in detail in the FCG. New Zealand, for example, may direct US Defense Attaché Office personnel to treat an aircraft upon arrival if a biosecurity failure has occurred.

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

- The significance of the DoD FCG and any host nation standards for aircraft disinsection.
- This technical guide, TG No. 4, *Disinsection of Military Aircraft*.

- Mandatory reporting of all applications of disinsection products per Department of Defense Instruction (DoDI) 4150.07, DoD Pest Management Program.
- Weapon system-specific guidance.

The following are the only insecticides approved for application within DoD aircraft bound for OCONUS Nations requiring disinsection:

- Callington™ Aircraft Insecticide 2% Permethrin (formerly Callington™ Pre-Spray), EPA Reg. No. 88144-1 (see Appendix B), is registered for disinsection of unoccupied military aircraft in cabins, crew areas, cargo, and cargo areas. Aircraft Insecticide is designed for use in areas where humans may frequent, to include rear areas of military aircraft that may have cargo, cargo+passenger, or passenger-only configurations. Aircraft Insecticide is available through the Defense Logistics Agency National Stock system: NSN: 6840-01-675-2534.
- Callington™ 1-Shot® Aircraft Insecticide, EPA Reg. No. 83795-1 (see Appendix C), is registered for disinsection of aircraft cargo holds. Cargo holds are defined as true, luggage-specific areas of the aircraft most commonly encountered on aircraft used to transport VIPs and leadership. For example, cargo areas of passenger airliners where humans don't typically frequent other than during loading and off-loading. Callington™ 1-Shot® is available through the Defense Logistics Agency National Stock system: NSN: 6840-66-131-2263.

Treatment certification requirements:

A Certificate of Disinsection (CoD) DD Form 3044 (Appendix A) or country-specific form per the FCG 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>.

Maintain the original CoD onboard the aircraft to comply with DoD certification requirements, and maintain a copy in the aircraft records as per the aircraft maintenance standard operating procedures (SOPs)

2-3 AGRICULTURAL DISINSECTION PROCEDURES IN CONUS

The USDA is the lead agency when pest species potentially threaten US agriculture and is responsible for action and clearance procedures. Currently, the Japanese Beetle Program (7 CFR § 301.48) is the only program requiring frequent and/or reoccurring disinsection of military aircraft in CONUS. This program's primary objective is to protect the western United States' agriculture from artificial Japanese beetle spread from the eastern United States. The DoD will ensure its personnel understand the USDA-APHIS-PPQ Japanese Beetle Program (see appendix F) requirements:

https://www.aphis.usda.gov/import_export/plants/manuals/domestic/downloads/japanese_beetle.pdf

Agricultural disinsection occurs at the direction of—or in coordination with—the USDA-APHIS-PPQ State Plant Health Director. The USDA and State Plant Health Director use a continuously updating risk assessment to identify airports at high risk of Japanese beetle infestation. These airports are notified of quarantine status by the State Plant Health Director, and if missions exiting these installations are bound for Japanese beetle-free or “protected” states, then the State Plant Health Director will mandate disinsection procedures.

States at high risk for Japanese beetles may vary from season to season as populations fluctuate and migrate. However, Japanese beetle populations commonly occur in states east of the Mississippi. The states free of Japanese beetles and under USDA protection status are:

- Arizona
- California
- Colorado
- Idaho
- Montana
- Nevada
- Oregon
- Utah
- Washington

When disinsection for agricultural quarantine is directed by the USDA, the following insecticides are approved for application within DoD aircraft:

- 10% d-Phenothrin, EPA Reg. No. 10308-21, see Appendix D for product label and Safety Data Sheet (SDS), is registered for use by federal or state personnel in support of the USDA Japanese Beetle Program in accordance with the PPQ Manual. The EPA label for 10% d-phenothrin permits application in all sections of the aircraft and specifies how much product can be applied based on the volume of the interior space. This product is NO LONGER manufactured and is not listed in the National Stock Number system. Remaining supplies of 10% D-phenothrin are held by the USDA and issued to airports or air bases on an as-needed basis. Currently, 10% D-phenothrin is available from USDA-APHIS-PPQ. For ordering and shipping information, contact your USDA State Plant Health Director:
https://www.aphis.usda.gov/aphis/ourfocus/planthealth/ppq-program-overview/ct_sphd
- Callington™ 1-Shot® Aircraft Insecticide, EPA Reg. No. 83795-1 (see Appendix C), is registered for disinsection of aircraft cargo holds. Cargo holds are defined as true, luggage-specific areas of the aircraft most commonly encountered on aircraft used to transport VIPs and leadership. For example, cargo areas of passenger airliners where humans don't typically frequent other than during loading and off-loading. Callington™ 1-Shot® is available through the Defense Logistics Agency National Stock system: NSN: 6840-66-131-2263.

Certification Requirement: If the destination airport or installation requires documentation of aircraft clearance, the local USDA PPQ Officer will provide a signed PPQ Form 250 *Aircraft Clearance or Safeguard Order*. While Pest Management Personnel may facilitate the transfer of Form 250 from the PPQ Officer to the aircrew, this form does not require Pest Management's signature.

2-4 AIRCRAFT DISINSECTION TRAINING REQUIREMENTS.

Optimally and primarily, DoD-Certified Pesticide Applicators or contracted State-Certified Pesticide applicators perform disinsection procedures.

In some cases, uncertified—but trained—personnel may perform disinsection duties. For example, it may be required on a multi-stop mission where the aircraft leaves CONUS, arrives at Country B, and departs for Country C, where Country C requires disinsection procedures at the last departure point. If there is no ground support prior to departure from Country B, trained aircrew or maintenance personnel may disinsect the aircraft at Country B. However, this scenario requires pre-mission planning where the uncertified applicator is trained by a Certified Applicator and issued insecticide prior to departure from the home installation or during other stopovers where Certified Applicators and insecticide supplies are available.

Disinsection training is the responsibility of the Installation Pest Management Coordinator (IPMC). The IPMC may appoint alternate trainers. However, appointees or alternates must hold current DoD or State Pesticide Applicators Certification. The IPMC must maintain Aircraft Disinsection training documentation within the shop along with other training records.

Certain units, such as some Guard and Reserve Squadrons, may have no ground support prior to departure. In these rare cases, unit leadership may identify an individual or individuals to complete computer-based training at: <https://www.acq.osd.mil/eie/afpmb> under Pest Management, Quarantine and Customs. These trained, but uncertified personnel may perform disinsection duties. Maintain disinsection training documentation in the individual's training record.

2-5 PESTICIDE USE REPORTING

When pesticides are applied in the DoD as a requirement of operations, it is mandatory to document the who, what, where and when of the chemical application. This data is captured on a DD Form 1352-1. Once completed, data is compiled and retained by the IPMC. If the applications was accomplished by uncertified but trained personnel, such as aircrew or maintenance, route the following information to the IPMC who issued the insecticide for documentation.

- Name of applicator
- Date
- Pesticide Name, such as 1-Shot or Aircraft Spray
- Number of Cans used
- Airframe and tail number

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APPENDIX A CERTIFICATE OF DISINSECTION

Prescribed by: [DoDI 4150.07](#)

PRE-EMBARKATION CERTIFICATE OF DISINSECTION		OMB No. 0704-0568 OMB approval expires: February 29, 2024
The public reporting burden for this collection of information (0704-0568), 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. 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.		
This is to certify that the below aircraft has been disinsected on _____ (MM/DD/YYYY) in accordance with AFPMB Technical Guide 4, Disinsection of Military Aircraft.		
PART I		
1. AIRCRAFT REGISTRATION (TAIL NUMBER)		
2. PORT OF DEPARTURE	3. DATE OF DEPARTURE	
4. MISSION DESIGN SERIES		
PART II		
CABIN DISINSECTION		
5. NAME OF ACTIVE INGREDIENT OF PRODUCT APPLIED		
6. SIZE OF CANS USED (GRAMS)		
7. SERIAL NUMBERS OF CANS USED		
8. Cabin disinsection completed by:		
a. NAME (Last, First, Middle Initial)	b. JOB TITLE and GRADE/RANK	
c. ORGANIZATION	d. SIGNATURE	
PART III		
HOLD DISINSECTION		
9. NAME OF ACTIVE INGREDIENT OF PRODUCT APPLIED		
10. SIZE OF CANS USED (GRAMS)		
11. SERIAL NUMBERS OF CANS USED		
12. 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.	
<p>A. PART I: The following information is provided by the insecticide applicator or aircrew prior to disinsection.</p> <p>(1) Aircraft registration (tail number). List the aircraft registration number/tail number.</p> <p>(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.</p> <p>(3) Date of departure. The date that the aircraft is scheduled to leave the port of departure.</p> <p>(4) Mission-design series. The type and model of aircraft, i.e. C-130J, KC-135R, etc.</p> <p>B. PART II: Cabin Disinsection: The following information is provided by the insecticide applicator.</p> <p>(5) Name of active ingredient of product applied. Print the ACTIVE INGREDIENT name(s) shown on the label on the insecticide cans.</p> <p>(6) Size of cans used. List the amount and unit of measure, usually grams, of insecticide cans.</p> <p>(7) 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.</p> <p>(8) Cabin disinsection completed by:</p> <p>(a) Name. Legibly print the full name of the person who performed the cabin disinsection.</p> <p>(b) Job title and grade/rank. Print the job title and grade or rank of the person who performed the cabin disinsection.</p> <p>(c) Organization. The insecticide applicator's organization, government agency or commercial firm.</p> <p>(d) Signature. The insecticide applicator's signature is required.</p>	<p>C. PART III: Hold Disinsection. The following information is provided by the insecticide applicator.</p> <p>(9) Name of active ingredient of product applied. Print the ACTIVE INGREDIENT name(s) shown on the label on the insecticide cans.</p> <p>(10) Size of cans used. List the amount and unit of measure, usually grams, of insecticide cans.</p> <p>(11) 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.</p> <p>(12) Hold disinsection completed by:</p> <p>(a) Name. Legibly print the full name of the person who performed the hold disinsection.</p> <p>(b) Job title and grade/rank. Write the job title and grade or rank of the person who performed the hold disinsection.</p> <p>(c) Organization. The insecticide applicator's organization, government agency or commercial firm.</p> <p>(d) Signature. The insecticide applicator's signature is required.</p> <p>D. DISPOSITION OF FORM:</p> <p>TRANSMISSION: Form may be electronically transmitted, faxed, mailed or hand-carried. Form is "FOR OFFICIAL USE ONLY," and must be protected as such.</p> <p>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.</p>

APPENDIX B LABEL & SDS FOR CALLINGTON™ AIRCRAFT INSECTICIDE



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: Mn 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, Avalonmere 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 dissection 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 dissection 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 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.USA.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)	
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SIGNAL WORD	WARNING
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Hazard statement(s)

H229	Pressurised container. May burst if heated.
H280	Contains gas under pressure; may explode if heated.

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...

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
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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 acid, 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...

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	<p>The vapour/mist is discomforting to the upper respiratory tract and lungs.</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>WARNING Intentional misuse by concentrating/inhaling contents may be lethal.</p> <p>Not considered to cause discomfort through normal use.</p>
Ingestion	<p>Overexposure is unlikely in this form.</p> <p>The mist is discomforting to the gastro-intestinal tract</p>
Skin Contact	<p>The material may be slightly discomforting to the skin if exposure is prolonged</p>
Eye	<p>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</p> <p>Not considered to cause discomfort through normal use.</p>

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	IRRITATION
	Not Available	Not Available
permethrin	TOXICITY	IRRITATION
	dermal (rat) LD50: 1750 mg/kg ^[2] Oral (rat) LD50: 383 mg/kg ^[2]	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

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.

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.

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 Tamlin, 1994, British Crop Protection Council]

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 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

Callington Aircraft Insecticide 2% Permethrin	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available

permethrin	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	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 brackets)

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...

Callington Aircraft Insecticide 2% Permethrin

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 & SDS FOR CALLINGTON™ 1-SHOT®



1-Shot

Aircraft Insecticide

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

ACTIVE INGREDIENTS:

- **t*-Phenothrin 2.0 %
- **Permethrin 2.0 %

OTHER INGREDIENTS: 96.0 %

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.: 85162-THA-001
Net Contents: 5.25 ounces (150g)



Read entire label before each use.

PRECAUTIONARY STATEMENTS

Harmful to Humans & Domestic Animals - CAUTION

Causes moderate eye irritation, harmful if swallowed, irritable 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 to a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in area during application.

Physical & Chemical Hazards - Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate containers. Exposure to temperatures above 120°F may cause bursting.

STORAGE AND DISPOSAL: Do not contaminate water, food or feed by storage or disposal.

Example: 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. If 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 a 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.
- Have person to breathe *fr*.

If inhaled:

- 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:

- Wash off contaminated clothing.
- Remove skin immediately with plenty of water for 15-20 minutes.

If in eyes:

- Call a poison control center or doctor for treatment advice.
- Hold eye open and flush 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.

NOT FOR USE: Never use this product on or inside of a vehicle or on any other enclosed space when you are calling a poison control center or doctor, or going for treatment. In case of Medical Emergencies or health and safety requires or in case of fire, Making or damaged containers, information may be obtained by calling 1-800-272-7272.

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 the enclosed 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 on the ground prior to take off and after landing. Before take off and after landing of all cargo is complete, close all doors, hatches and ventilation openings. Turn off ventilation system. Avoid a minimum of 5,000 cubic feet 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 boarding remove all passengers, close all doors, hatches and ventilation openings and supply insecticide as instructed above.

Callington Haven Pty Ltd Incorporated in NSW, A/N 000 632 846
30 South Street, Rydalmere NSW 2116 Australia.
Email: enquiries@callington.com.au Website: www.callingtonhaves.com
Telephone: (612) 9608 2708 Fax: (612) 9604 4215



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	
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SIGNAL WORD	WARNING
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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. [Ellenhorn 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.
--	--

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
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 CFSAN 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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APPENDIX D LABEL & SDS FOR 10% D-PHENOTHRIN

10308-21

12/11/2003

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INSECTICIDE AEROSOL D-PHENOTHRIN, 10%

For Use By or Under the Direction of Federal/State Personnel for JAPANESE BEETLE CONTROL and OTHER HITCHHIKERS. INSECTS According to the Plant Protection and Quarantine Manual

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS**

CAUTION

Harmful if swallowed. Do not use in commercial food serving areas while food is exposed. Do not contaminate food or foodstuffs.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or wetlands (swamps, bogs, and marshes).

PHYSICAL 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° may cause bursting.

STORAGE AND DISPOSAL

- STORAGE**
Store in a cool, dry area.
- DISPOSAL**
Do Not Puncture or Incinerate!
If empty: Place in trash or offer for recycling if available.

If partly filled: Call your local waste agency or 1-800-CLEANUP for disposal instructions.

ACCEPTED
DEC 11 2003
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 10308-21

EPA Registration No. 10308-21

EPA Establishment No.

ACTIVE INGREDIENT:

3-phenoxybenzyl-(1RS,3RS,5SR)-2,2-methyl-propyl-1-enyl cyclopropanecarboxylate.....10.0%

INERT INGREDIENTS:.....90.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

**SEE SIDE PANEL FOR ADDITIONAL
PRECAUTIONARY STATEMENTS**

FIRST AID	
IF SWALLOWED	<ul style="list-style-type: none"> -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 IN EYES	<ul style="list-style-type: none"> -Hold eyes 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(s). -Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> -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 INHALED	<ul style="list-style-type: none"> -Move person to fresh air. -If person 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 further treatment advice.

Have the product container or label with you when contacting a poison control center or doctor, or when getting for treatment.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Spray 8 grams per 1000 cubic feet. This can dispenses 5 grams (per second). When the red extender tube is used, this can dispenses 2.5 grams per second. (Example: Without extender, to treat 20,000 cubic feet, 8 x 20 divided by 5 = 32 seconds of spray time. With the extender, the time would double to 64 seconds). Use in accordance with the Plant Protection and Quarantine Manual instructions.

NOTICE - READ CAREFULLY

CONDITIONS OF SALE:

Sumitomo (and seller) offer(s) this product for sale subject to, and buyer and all users are deemed to have accepted, the following conditions of sale and warranty which may only be varied by written agreement of a duly authorized representative of Sumitomo.

WARRANTY LIMITATIONS:

Sumitomo warrants that this product conforms to the chemical description in the directions for use on the label subject to the inherent risks referred to below. Sumitomo makes no other express warranties. **THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY** and there are no warranties which extend beyond the description of the label hereof.

INHERENT RISKS: The directions for use of this product are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks associated with use. Buyer assumes all risks associated with use or application of this product contrary to label instructions or resulting from extraordinary weather conditions.

LIMITATIONS OF LIABILITY:

In no case shall Sumitomo be liable for special, indirect or consequential damages resulting from the use or handling of this product and no claim of any kind shall be greater in amount than the purchase price of the product in respect of which such damages are claimed.

Net Contents Liters Gal. Lot No.

®Registered Trademark of Sumitomo Chemical

SUMITOMO CHEMICAL COMPANY, LTD
5-33 Kitahara, 4-chome, Chuo-ku
Osaka 541-8550, JAPAN

Unusual Fire or Explosion Hazards:~ None known

SECTION 5 : PHYSICAL HAZARDS (REACTIVITY DATA)

Stability: Stable~

Conditions to avoid: Do not store above 130 F. Do not store near open flame.

Incompatibility (materials to avoid): None known
Hazardous Decomposition Products: Products of combustion are principally Carbon Dioxide, Carbon Monoxide, Water, Hydrofluoric Acid, and Fluoride Carbonyl.

Hazardous
Polymerization: Will not occur

SECTION 6 : HEALTH HAZARDS

Eyes: May cause temporary discomfort. Skin: May cause skin irritation in sensitive people. Contact with spray can cause frostbite on exposed skin.

Inhalation: Inhalation of high concentrations of vapor is harmful and may cause heart irregularities , unconsciousness or death. Vapor reduces oxygen available for breathing and is heavier than air.

Oral: Acute Oral Toxicity of Sumithrin >10,000 mg/kg.

Systemic & Other effects:~

Carcinogenicity:~

NTP	Not listed~
IARC monographs	Not listed~
OSHA	Not listed~
AGIH	Not listed~

Comment: Unnecessary exposure to this product, or any chemical, should be avoided.

SECTION 7 : EMERGENCY AND FIRST AID PROCEDURES

Eyes: Wash repeatedly with cold water. Get medical attention if irritation persists.

Skin: Wash skin with soap and water. Remove contaminated clothing & shoes. Call physician. Treat for frostbite if necessary.

Inhalation: Remove to fresh air. If not breathing give artificial respiration.

Oral: Call a physician or Poison Control Center.

SECTION 8 : SPILL, LEAK AND DISPOSAL PROCEDURES~@@

Spill Response: Remove ignition sources. Use absorbent material to collect and contain for salvage or disposal. Ventilate area.

Protective Equipment:

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Wash hands after handling material.*

Inhalation: No respiratory protection required when used according to label directions.

Waste Disposal Method: Empty containers may be discarded in trash. Full or leaking containers should be taken to a local disposal company for treatment or incineration. SPEER PRODUCTS suggests that all Local, State, and Federal Regulations concerning health and pollution be reviewed to determine approved disposal procedures. Do not contaminate water, food or feed by storage or disposal.

This product contains no CERCLA listed chemicals

*Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking.

SECTION 9 : ROUTINE HANDLING PRECAUTIONS

Protective Equipment None required when using according to label. Safety glasses are highly recommended; however, professional groomers

or applicators (those with repeated and extended exposure) should wear goggles, and OSHA approved respirator, apron, and rubber gloves at a minimum when working with this and other similar products.

Skin: Avoid skin contact. Wash hands after using product.

Inhalation: Use only in a well-ventilated area.

Ventilation: No special ventilation required when used according to label directions.

Comments: Use only at normal room temperatures. Do not spray towards face. Avoid skin contact. Do not puncture or incinerate.

*Good practice requires that gross amounts of any chemical be removed from the skin as soon as practical, especially before eating or

smoking.

SECTION 10 : SPECIAL PRECAUTIONS

Handling & Storage: Do not store above 130 degrees F. Do not store near open flames.

Other Precautions: Read and follow directions on product label.

Regulatory Requirements: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:~

Immediate health (acute)
Fire hazard
Delayed health (chronic)
Reactivity
Sudden release of pressure

SARA 313 Information: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Chemical Name	CAS Number	Concentration

None		

These data are offered in good faith as typical values and not as a product specification. No warranty, either express or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

APPENDIX E COUNTRY ENTRY DISINSECTION PROCEDURES

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

For disinsection purposes, any area in an aircraft capable of holding crew or passengers during flight is considered cabin area and treated with Callington™ Aircraft Insecticide (formerly Callington™ Pre-Spray).

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.

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

Treatment is IAW country-specific requirements per the FCG. Usually treatment efficacy is for the duration of a single flight sector and performed at the last point of departure prior to arrival in the country requiring disinsection.

Disinsection products:

- Callington™ Aircraft Insecticide (formerly Callington™ Pre-Spray) 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.
- 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.

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

- 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.
- The DoD-trained applicator signs the CoD.
- The original CoD and the empty and/or partly used cans remain onboard until arrival at the destination.
- A second CoD, either a photocopy, scan, or a second original, is maintained with the aircraft records per aircraft maintenance SOP.

Pre-embarkation cabin disinsection procedures.

Step	Action: Cabin, Troop/Cargo Area Treatment
1	Spraying must be completed using Callington™ Aircraft Insecticide (2% permethrin). See Appendix B for Callington™ Aircraft Insecticide label and SDS.
2	Treatment IAW country-specific requirement per the FCG. Most frequently treatment should occur 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.</p> <p>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	Overhead storage bins and sidewall lockers must be open during the spraying.
6	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.
7	Spray all galleys, including those on lower levels and the lift access.
8	Spray all toilets and coat lockers for two seconds each.
9	Spray all crew rest areas and the flight deck according to the label.
10	<p>Ventilate the aircraft for 30 minutes prior to crew/passenger boarding.</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>
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.
13	DoD Certified Applicators will fill out and submit DD 1532-1 per DoDI 4150.07; for uncertified, but trained personnel, provide the IPMC the following: Who applied the pesticide, date, number of cans, airframe, tail number.
14	Inability to meet the procedures prescribed in this guide and the country-specific information in the FCG must be reported to the Air Attaché for the destination country as soon as possible.

Pre-embarkation hold disinsection procedures.

Step	Action: Lower Cargo Hold Treatment (non-passenger areas)
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	Advise the crew that the cargo hold is about to be sprayed. As it is not uncommon for cargo hold spray to set off smoke detectors, sensitive electronic equipment must not be directly sprayed, and the crew must be fully aware of the procedures before disinsection.
4	During disinsection and for 5 min after completion of spraying, the aircraft's air-conditioning must remain off. Recirculation fans may be left on if essential for operation of the aircraft but should be set to the lowest rate.
5	When the lower cargo door(s) are being closed, leave the door open just enough to place the aerosol(s) in a secure, upright position, and activate the lock-down nozzle(s).
6	Once the spray aerosol(s) appears to be functioning correctly, immediately close the hold door to complete disinsection. If either hold requires re-opening (except for the purpose of loading animals) or an aerosol malfunctions, the above steps must be repeated.
7	Full discharge of the aerosols takes 2 min, and the saturation period takes another 5 min.
8	Used aerosol containers should remain in the lower holds and should be retrieved by ground handlers at the destination airport. They should be accessible to the ground handlers.

9	If an airline chooses to remove aerosol containers before departure, the containers should be carried on board with the disinsection certificate. Allow 7 min after activation before retrieval.
10	The door of the disinfected cargo hold must be opened only to the minimum necessary to retrieve used containers and then immediately closed to avoid recontamination.
Step	Action: Lower Cargo Hold Treatment when small mammals are to be loaded
1	Disinsection should be conducted before the mammals are loaded but after all other cargo.
2	Consideration should be given to procedures of the International Air Transport Association for animals (Chapter 5) and the regulations of the World Organization for Animal Health.
3	Open the hold door after disinsection to load animals and close it immediately afterwards to avoid recontamination.
Step	Action: Freighter Cargo Hold Treatment
1	Upper cargo area - For the upper cargo deck of a freighter use an aerosol product containing permethrin 2% and d-phenothrin 2% (or 1R-trans-phenothrin 2%).
2	When there is also a cargo area on the main deck (freighter aircraft), this area should be accessed for spraying via the passenger access door after the large cargo door is closed.
3	Discharge the aerosols while walking away from the spray and vacate the area once spraying has been completed.
4	Spray should be discharged as high as possible and directed towards the center of the aircraft ceiling by an operator walking at approximately one step per second.
5	If cargo prohibits access to certain parts of the aircraft: <ul style="list-style-type: none"> • discharge the aerosol into the centre of aircraft, directed towards the ceiling above the top of the cargo, for the appropriate duration for the section of the aircraft that could not be accessed; or • position the aerosols evenly throughout the aircraft on top of the cargo (applicable when using single shot aerosols only).
6	Once spraying is completed, allow at least 5 min for the spray to settle before departure.

7	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.
8	Upon completion of aircraft disinsection, the DoD-trained applicator will complete all sections of the CoD.
9	DoD Certified Applicators will fill out and submit DD 1532-1 per DoDI 4150.07; for uncertified, but trained personnel, provide the IPMC the following: Who applied the pesticide, date, number of cans, airframe, tail number.
10	Inability to meet the procedures prescribed in this guide and the country-specific information in the FCG should be reported to the Air Attaché at the destination country as soon as possible.

Host nation personnel will not embark the aircraft due to the sovereign immune status of US (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.

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 an officer/inspector upon arrival. The minimum certification requirements are detailed in Appendix A.

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

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

Country-Specific Reporting Standards can be found in the FCG information for the destination country.

APPENDIX F DISINSECTION PROCEDURES FOR USDA/APHIS

Agricultural Quarantine - Japanese Beetle program

Agricultural disinsection of aircraft within the U.S is most frequently directed at the Japanese beetle. However circumstance may require action for other “hitchhiking” agricultural pests that may harm US agriculture. Risk and prevention of moving agricultural pests within aircraft in the US falls under the USDA per 7 CFR § 301.48 - Notice of quarantine; quarantine restrictions on interstate movement of regulated articles.

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

Agricultural Disinsection is only at the direction of and in coordination with USDA, APHIS, PPQ Program, State Plant Health Director. Clearance procedures for affected aircraft are at the discretion of the USDA.

For the purposes of agricultural disinsection, aircraft are treated with 10% D-phenothrin for areas of the aircraft that personnel frequent. Calligton™ 1-Shot® is used to manage pest infestations in cargo holds (true luggage areas found in passenger planes).

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

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

Treatment is effective IAW USDA-specific requirements per the Japanese Beetle Program and USDA Treatment Manual. Treatment efficacy is for the duration of a single flight sector and thus must be performed at the last point of departure prior to arrival in the state requiring disinsection.

USDA Japanese Beetle Program Manual:

https://www.aphis.usda.gov/import_export/plants/manuals/domestic/downloads/japanese_beetle.pdf

USDA Treatment Manual:

https://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/treatment.pdf

USDA Agricultural Disinsection Procedures for Passenger/Crew Areas for Flights within the US per the USDA Treatment Manual

Note: Areas within large aircraft that can be configured as troop carriers, cargo areas, or troop and cargo areas are consider cabin areas. Working animals are treated as

personnel. Assure personnel are not permitted within the aircraft until after final ventilation.

Step	Action: Cabin, Troop/Cargo Area Treatment
1	Vacuum cabin area prior to treatment.
2	Close flight deck windows.
3	Inspect flight deck, remove any insects, and keep windows closed until departure.
4	Close flight deck door to prevent aerosol from entering flight deck.
5	Install barrier curtains (doors, plastic sheeting, or other prefabricated structure) in galley areas to prevent aerosol particles from entering galley area.
6	Cover all food prep areas and exposed oxygen masks with plastic.
7	Open bathroom doors.
8	Use PPE (minimum: closed-toed shoes, long sleeves, long pants, goggles, and nitrile gloves).
9	Disengage aircraft ventilation system.
10	Close aircraft entrance doors.
11	Treat at rate per the EPA registration label: 8g/1,000 ft ³ . Without an extender tube, the aerosol can is calibrated to dispense 5 grams per second. 8 grams per 1,000 cubic feet will take 1.6 seconds to dispense.
12	Start (perhaps with another applicator) 10 feet from the end of the aircraft. While backing slowly through the aircraft, dispense aerosol in a sweeping motion with cans pointing upward at a 45° angle. Keep the dispensing valve fully depressed. To avoid wetting surfaces, hold the nozzle at least 18 inches away from all surfaces.
13	When dispensing the aerosol, time or count aloud using the technique 1001, 1002, etc. Accurate timing not only ensures the proper amount is dispensed, but also increases the likelihood of obtaining an equal distribution.
14	Exit the aircraft and close all doors.
15	Keep the aircraft closed for 15 minutes post-treatment.
16	After the 15-minute post-treatment period, start aircraft ventilation system.
17	Ventilate aircraft for 15 minutes before boarding passengers, crew, or ground personnel.
18	If aerosol particles are still noted in the air after the ventilation period, continue aeration until the particles disappear.
19	After treatment and ventilation, safeguard the aircraft until departure.

- Do not open flight deck doors.

- Do not remove barriers from galleys until catering is completed; insects can enter during the catering process.
- Reinspect and collect all insects.
- Remove covers used to protect specific items outside the galley.
- Wash hands, faces, and arms before smoking, eating, or drinking.

USDA Agricultural Disinsection Procedures for True Cargo Holds/Luggage Areas for Flights within the US per the USDA Treatment Manual.

Note: Working animals are treated as personnel. Assure personnel are not permitted within the aircraft until after final ventilation.

Step	Action: Luggage Hold Treatment (non-passenger areas)
1	Ensure that there are no live animals on board before treatment. (If there are, remove them (in cages or holding containers) to a protected area, away from the treatment environment.)
2	If possible, visually inspect baggage/cargo hold before loading; collect and destroy all insects found.
3	If possible, visually inspect all baggage or cargo as it is loaded.
4	Use PPE (minimum: closed-toed shoes, long sleeves, long pants, goggles, and nitrile gloves).
5	Treat at rate per the EPA registration label: 8g/1,000 ft ³ . Without an extender tube, the aerosol can is calibrated to dispense 5 grams per second. 8 grams per 1,000 cubic feet will take 1.6 seconds to dispense.
6	In small holds, open the hatch just enough to allow a hand and the aerosol container inside. Many holds are small; therefore, applicators may treat these small areas by standing at the hatch and directing the spray either aft or forward.
7	Open the hold door(s) and ventilate for 15-30 minutes.
8	If live animals are being shipped, check the animals and cages for live beetles before loading.
9	Close hold door(s).

APPENDIX G DEFINITION OF TERMS

Aircraft: any aircraft performing a military mission.

Baggage: personal effects of the traveler.

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

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

Certified pesticide applicator: an individual who has successfully completed an EPA-approved training program for applying pesticides that includes written examinations in core and specific application categories.

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

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

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

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

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

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

Training: formal or informal instruction in one or more areas of IPM and vector control that increases the expertise and measurable competence of pest management personnel performing specific IPM and disease vector-control tasks. Training methods include workshops, seminars, conferences, symposia, training courses, apprenticeships, interactive models, distance learning (including satellite and video tele-training), correspondence courses, training support packages (including video-based products), and other distributed learning products or materials.

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

APPENDIX H REFERENCES

- Commonwealth of Australia Department of Agriculture and Water Resources. 2019. Schedule of aircraft disinsection procedures for flights into Australia and New Zealand, accessible at <https://www.agriculture.gov.au/biosecurity/avm/aircraft/disinsection/procedures/schedule-aircraft-disinsection>, as of 2 August 2021.
- Department of Defense Form DD 3044. 2017. Pre-embarkation Certificate of Disinsection, downloadable at <http://www.esd.whs.mil/portals/54/documents/dd/forms/dd/dd3044.pdf> as of 27 Jul 2021.
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- 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 1 June 2020.
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