

# **Technical Guidelines on Aircraft Disinsection for Flights into Hong Kong**

## **1. Introduction**

1.1 Aircraft disinsection serves as a line of defense on prevention of arthropod vectors from intrusion from other areas/countries which may cause disease outbreak in Hong Kong. This guideline is prepared with reference to the latest recommendation from the World Health Organization (WHO)<sup>1</sup> on aircraft disinsection.

1.2 The document sets out technical guidelines stating all the technical requirements, including procedural requirement of disinsection and insecticides to be used that the airlines should fulfill for all incoming flights to Hong Kong from Zika affected countries. The areas to be disinsected in the aircraft set out in this guideline is the minimal requirement. It is solely the discretion of the Airlines to disinsect other areas as well in the aircraft. Besides, recommendations on how to select pest control contractors for the disinsection services is also included for the airlines' considerations.

## **2. Government Authorities**

### **2.1 The Port Health Office of Department of Health**

The Port Health Office (PHO) of the Department of Health, the Government of Hong Kong Special Administrative Region (HKSAR) enforces relevant provisions of the Prevention and Control of Disease Ordinance (Cap. 599) at the Hong Kong International Airport so as to prevent infectious diseases from being introduced into or carried away from the territory through aircraft.

### **2.2 The Pest Control Advisory Section of Food and Environmental Hygiene Department**

The Pest Control Advisory Section (PCAS) of the Food and Environmental Hygiene Department (FEHD) provides technical advices on pest prevention and control. Guidelines set out in this document is prepared jointly by PCAS and PHO.

### **2.3 The Agricultural, Fisheries and Conservation Department**

All pesticides to be used in Hong Kong should be registered according to the Pesticide Ordinance (Cap.133) of HKSAR, China. A register of pesticide is being maintained

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<sup>1</sup> *Aircraft Disinsection Insecticides. Geneva, WHO, 2013. & Guidelines for Testing the Efficacy of Insecticide Products Used in Aircraft. Geneva, WHO, 2012.*

by the Director of the Agricultural, Fisheries and Conservation Department (AFCD).

### **3. Aircraft Disinsection Methods**

#### **3.1 Residual Disinsection**

3.1.1 The internal surface of the aircraft, excluding food preparation areas are sprayed with residual disinsection at intervals not exceeding eight weeks (WHO, 1995)<sup>2</sup>. Pesticides used and methods of application should be recommended by the WHO. Pesticides used should be registered according to the Pesticide Ordinance (Cap. 133).

3.1.2 The residual disinsection remains efficacious for eight weeks and causes minimal inconvenience to passengers and prevents the crew or passengers from exposure to aerosol sprays.

#### **3.2 Blocks away**

3.2.1 The Blocks away disinsection is recommended by the WHO and takes place after passengers have boarded, the doors have been closed and prior to take-off. The cabin is treated by crew members walking through the cabins discharging aerosols.

#### **3.3 Pre-flight and Top of Descent**

3.3.1 The pre-flight spraying involves the aircraft cabin and hold being sprayed with an aerosol containing a residual insecticide while the aircraft is on the ground but before passengers embark. Pre-flight is spraying usually followed by a non-residual top of descent spraying. The combined treatment lasts for the duration of single flight sector.

#### **3.4 On-arrival**

3.4.1 On-arrival treatment of cabin and hold of incoming flights to Hong Kong should be carried out when no spraying has been conducted prior to departure for Hong Kong or during the flight. On-arrival treatment is carried out after landing with passengers on board by the crew under supervision of PHO.

### **4. Aircraft Disinsection Insecticides**

4.1 For aircraft disinsection, WHO currently recommends permethrin (2%) for residual disinsection (WHO, 2005)<sup>3</sup> and d-phenothrin (2%) for space spraying. The specification of the insecticides are attached in Annex I.

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<sup>2</sup> *Report of the Informal Consultation on Aircraft Disinsection. Geneva, WHO, 1995.*

<sup>3</sup> *Safety of Pyrethroids for Public Health Use. Geneva, WHO, 2005.*

4.2 Residual disinsection provides an insecticidal deposit on inside walls of structures to kill target insects that come into contact with the treated surface. Such deposits are intended to remain active for extended periods of time.

4.3 Space spraying<sup>4</sup> is the dissemination of small particles (under 30 µm) that will remain airborne sufficiently long to make contact with flying target species. This type of treatment involves a very low dosage of insecticide as it is not intended to leave a residual deposit.

4.4 It is the airlines' responsibility to ensure the aerosol products used meet all aviation and aircraft manufacturers technical and safety requirements, the WHO and ICAO (International Civil Aviation Organization) guidelines, as well as complying with the Pesticide Ordinance (Cap. 133) of the Laws of Hong Kong.

## **5. Certification and Approval Process**

Airlines should provide PHO with certificates of treatment conducted and/or other necessary documents and items as set out in the guidelines of PHO.

## **6. Residual Disinsection**

The internal surfaces of the aircraft (both cabin and hold) are treated with the residual insecticide recommended by WHO. It kills arthropod pests which land on or have contact with treated surfaces. Aircraft so treated must be issued with a Certificate of Residual Disinsection in accordance with guidelines set out by the PHO.

### **6.1 Residual Disinsection Procedures**

6.1.1 A 2% emulsion of permethrin as recommended by the WHO should be used for residual spraying.

6.1.2 The application rate is 0.2g of permethrin per square meter. To achieve this, the 2% emulsion of permethrin needs to be sprayed at a rate of 10 ml per square meter.

6.1.3 For complete coverage of all the surface areas as required, adequate quantity of the insecticide is needed. Examples of approximate quantity of the insecticide to be needed for treatment of interior surfaces of both cabin and cargo compartments of different types of aircraft have been given as follows:

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<sup>4</sup> *Aircraft Disinsection Insecticides. Geneva, World Health Organization, 2013.*

<u>Aircraft type</u>	<u>Approximate quantity of the insecticide to be needed<sup>5</sup></u>
B747	25 litres
B767	11 litres
DC10	16 litres
B737	7 litres

6.1.4 Suggested means of application is by compression sprayer that has a constant flow valve and flat fan nozzle according to WHO specifications<sup>6</sup>. Aerosols can be used to spray electrically sensitive areas.

6.1.5 Turn off the air conditioning system including any pre-conditioned air from a ground support unit. Recirculation fans may be left on if essential to the operation of the aircraft, but set to the lowest rate.

6.1.6 Prepare the aircraft by opening, clearing and cleaning all lockers, cupboards, storage units etc. and drawing all curtains and window blinds. Remove carpet covers if present. Spray all internal surfaces including ceiling, walls, lockers curtains, toilets and wall areas behind curtains, except food preparation area<sup>7</sup>. Spray both sides of doors and locker lids. At the need of the operation respray the carpets.

6.1.7 Do not remove permanently stored items such as loudhailers, first aid kits, oxygen bottles, fire extinguishers etc. Avoid spraying windows, instrumental panels, control panels and removable components such as food trolleys.

6.1.8 After treatment is completed, air-conditioning packs should be run for at least one hour to clear the air of volatile components of the spray before the crew and passengers embark.

6.1.9 Touch-up treatment should be performed if treated areas were to be cleaned or refurbished between successive treatments.

6.1.10 For hold disinsection, the same application rate of 2% permethrin as cabin should be applied to compartment walls, ceiling and floors of holds. Pay special attention to sidewall and floor cavities. The areas should be free from pallets, containers and any rubbish when spraying.

<sup>5</sup> Annex 3 of Report of the Informal Consultation on aircraft disinsection WHO/PCS 95.51, 1995

<sup>6</sup> Equipment for vector control specification guidelines. Geneva, World Health Organization, 2010.

<sup>7</sup> Aircraft disinsection insecticides. Geneva, World Health Organization, 2013.

## **6.2 Certification**

Airlines should provide PHO with certificates of the latest residual disinsection and other necessary documents as set out in the guidelines of PHO

## **7. Pre-flight and Top of Descent Disinsection**

The pre-flight spraying allows overhead lockers and toilets to be opened and properly sprayed with minimum inconvenience to passengers. A subsequent in-flight spraying of non-residual aerosol is carried out as the aircraft starts its descent to the destination airport. Preflight spray is to be carried out at the last port before departure for Hong Kong International Airport.

### **7.1 Pre-flight Disinsection Procedures**

#### Cabin Pre-flight Disinsection

7.1.1 A pre-flight spray must be applied to the flight deck, all toilet areas, food preparation areas, lockers and crew rest areas after catering has been loaded and prior to boarding of crew and passenger, except approval has been granted for the residual treatment of these areas.

7.1.2 Pre-flight spraying is to be carried out at the last port before departure for Hong Kong International Airport.

7.1.3 Spraying should be conducted using aerosol can of the 2% permethrin as recommended by the WHO. Spraying should be carried out with a rate of 35 g of formulation per 100 m<sup>3</sup> (10 g per 1000 ft<sup>3</sup>).

7.1.4 The aircraft should be fully catered with service door closed and overhead and sidewalk lockers opened during spraying. One main entry door per level may remain open to facilitate operational requirements.

7.1.5 For a period of 5 minutes after and during the disinsection, the air-conditioning of the aircraft should be switched off. Recirculation fans may be left on at the lowest flow rate if essential to the operation of the aircraft.

7.1.6 Personnel conducting the spraying should move slowly along the aisle while spraying, with a pace of not more than one step or one row of seats per second. The spray should be directed towards the open overhead lockers and ceiling.

7.1.7 Lockers and toilets should be sprayed for 3 seconds each and crew rest

areas and flight deck for 5 seconds each.

#### Hold Pre-flight Disinsection

7.1.8 All aircraft, except those which have been residually treated, are required to conduct hold preflight disinsection prior to departure at the last overseas port before landing the Hong Kong International Airport. Any aircraft arriving Hong Kong International Airport that has not performed hold disinsection is required to conduct on-arrival hold disinsection before unloading of cargo subject to the inspection by an officer from the PHO.

7.1.9 Preflight hold disinsection should be performed in conjunction with a cabin preflight disinsection.

7.1.10 Spraying should be conducted using one-shot aerosol can(s) of 2% permethrin and 2% d-phenothrin as active ingredients as recommended by the WHO.

7.1.11 The treatment should be conducted at the last overseas airport after all cargo has been loaded and just prior to hold door closure.

7.1.12 Inform crew before the conduction of hold disinsection as the aerosol may set off smoke alarm.

7.1.13 For a period of 5 minutes after and during the disinsection, the air-conditioning of the aircraft should be switched off. Recirculation fans may be left on at the lowest flow rate if essential to the operation of the aircraft.

7.1.14 Close the cargo door and leave an opening just enough to place can(s) in a secure upright position and activate the lock down nozzle(s).

7.1.15 Immediately close the cargo door after confirmation of the proper functioning of the aerosol can(s). The above step should be repeated if the hold door is to be reopened (except for the purpose of loading animals) after the hold disinsection prior to take-off or if the can(s) malfunctions.

7.1.16 The exhausted can(s) can be left in the lower hold during the flight or retrieved after 7 minutes immediately after preflight hold disinsection by opening the hold door to the minimum opening for retrieval of the exhausted can(s). The hold door should be closed immediately after the retrieval to avoid pest from entering the

hold.

7.1.17 If small animals are to be carried in the lower hold, disinsection should be carried out prior to the loading of animals, but after all other cargo has been loaded. Preflight hold disinsection procedure should follow steps 7.1.9 to 7.1.17. Animals can be loaded after 7 minutes from activation of the aerosol can(s). The hold door should be closed immediately after loading of animals to avoid reinvasion of pest.

7.1.18 Preflight disinsection of freighter aircraft should follow steps 7.1.9 to 7.1.17. Follow steps 7.1.10 to 7.1.13 if cargo hold is located on the main deck. Discharge the aerosols by walking away from spray and vacate the area on completion of spraying. Place the aerosol cans evenly throughout the aircraft if access is restricted by cargo. Allow 7 minutes after the aerosol treatment before re-entering for final departure preparations.

## **7.2 Top of Descent Disinsection Procedures**

### Cabin Top of Descent Disinsection

7.2.1 The top of descent treatment is conducted immediately prior to the aircraft starts its descent to the Hong Kong International Airport.

7.2.2 An in-flight announcement must be made prior to the disinsection to inform passengers. The script and information to be included in the announcement is attached in Annex II.

7.2.3 Conduct spraying with aerosol can with 2% d-phenothrin as active ingredient as recommended by the WHO. Spraying should be carried out with a rate of 35 g of formulation per 100 m<sup>3</sup> (10 g per 1000 ft<sup>3</sup>).

7.2.4 Air conditioning system should be set to normal flow and the recirculation fans on during treatment.

7.2.5 Overhead and sidewall lockers are to be remain closed during treatment.

7.2.6 Spraying is to be applied towards the walls and ceiling, along the aisle at a pace of not more than one step or one row of seats per second.

## **8. Blocks away Disinsection**

The blocks away disinsection takes place after passengers have boarded, the doors have been closed and prior to take-off. The treatment should be conducted at the last port before departure for Hong Kong International Airport. All possible insect harbourages in the aircraft should be treated. Hold and flight decks are sprayed before departure prior to boarding of crew.

### **8.1 Blocks away Disinsection Procedures**

8.1.1 The blocks away treatment should be conducted after embarkation but before take-off when the doors have been closed.

8.1.2 An announcement should be made to aware the passengers of the treatment. The script and information to be included in the announcement is attached in Annex III.

8.1.3 Conduct spraying with aerosol can with 2% d-phenothrin as active ingredient as recommended by the WHO. Spraying should be carried out with a rate of 35 g of formulation per 100 m<sup>3</sup> (10 g per 1000 ft<sup>3</sup>).

8.1.4 Air conditioning system should be turned off and the recirculation fans may be left on at the lowest flow rate if essential to the operation of the aircraft.

8.1.5 Overhead and sidewall lockers, toilets, food preparation areas should also be treated during spraying. Spraying should be applied towards the walls and ceiling, along the aisle at a pace of not more than one step or one row of seats per second.

8.1.6 Holds and flight deck are sprayed prior to departure. The flight deck should also be treated before boarding of the crew. The hold blocks away disinsection resembles the hold preflight disinsection. Follow steps 7.1.8 to 7.1.18 for hold blocks away disinsection.

## **9. On-arrival Disinsection**

The treatment ensures any arthropod pest entered the cabin or hold would be killed. Any relevant aircraft arriving Hong Kong International Airport that has not been disinsected in accordance with the previous methods outlined in this guidelines must be disinsected on its arrival by the cabin crew subject to the inspection of a health official from the PHO.

Passengers seeking an exemption on medical grounds will have the opportunity to discuss and seek special arrangement prior to on arrival treatment. The PHO can be approached for more information.

## **9.1 On-arrival Disinsection Procedures**

### Cabin On-arrival Disinsection

9.1.1 All exterior doors and windows must remain closed and only be opened with directions from an officer of the PHO.

9.1.2 An announcement should be made to aware the passengers of the treatment. The script and information to be included in the announcement is attached in Annex IV. (to be provided by PHO)

9.1.3 Passengers seeking an exemption on medical grounds will have the opportunity to discuss and seek special arrangement prior to on arrival treatment with officer of the PHO.

9.1.4 Conduct spraying with aerosol can with 2% d-phenothrin as active ingredient as recommended by the WHO. Spraying should be carried out with a rate of 35 g of formulation per 100 m<sup>3</sup> (10 g per 1000 ft<sup>3</sup>).

9.1.5 Air conditioning system should be turned off and the recirculation fans may be left on at the lowest flow rate if essential to the operation of the aircraft.

9.1.6 Overhead and sidewall lockers, toilets and food preparation areas should also be treated during spraying.

9.1.7 Personnel conducting the spraying should move slowly along the aisle while spraying, with a pace of not more than one step or one row of seats per second. The spray should be directed into the open lockers.

9.1.8 Lockers and toilets should be sprayed for 3 seconds each and crew areas and flight deck for 5 seconds each.

9.1.9 Upon completion of the treatment, allow 5 minutes for saturation of the aerosol particles before resuming the air conditioning system to maximize airflow. All passengers should remain seated until clearance is given by officer of the PHO for passenger disembarkation.

### Hold On-arrival Disinsection

9.1.10 All hold doors must remain closed and only be opened with directions from an officer of the PHO.

9.1.11 Spraying should be conducted using one-shot aerosol can(s) of 2% permethrin and 2% d-phenothrin as active ingredients as recommended by the WHO.

9.1.12 Inform crew before the conduction of hold disinsection as the aerosol may set off smoke alarm.

9.1.13 For a period of 5 minutes after and during the disinsection, the air-conditioning of the aircraft should be switched off. Recirculation fans may be left on at the lowest flow rate if essential to the operation of the aircraft.

9.1.14 Open the hold door(s) and leave an opening just enough to place can(s) in a secure upright position and activate the lock down nozzle(s).

9.1.15 Immediately close the hold door(s) after confirmation of the proper functioning of the aerosol can(s). The above step should be repeated if the can(s) malfunctions.

9.1.16 Allow 7 minutes for saturation before opening the hold door to retrieve the exhausted can(s).

9.1.17 On arrival hold disinsection of freighter aircraft should follow steps 9.1.10 to 9.1.16. Follow steps 9.1.11 to 9.1.13 if cargo hold is located on the main deck. Place the aerosol cans evenly throughout the aircraft if access is restricted by cargo. Allow 7 minutes after the aerosol treatment before re-entering.

9.1.18 Upon completion of the treatment with satisfaction, unloading of cargo may proceed.

## **10. Recommendations on how to select pest control contractor for aircraft disinsection service**

Currently, there is no statutory regulatory system on pest control services providers in Hong Kong. The quality of services provided by these companies varies. As the aircraft disinsection is the first line of defense in the prevention of introduction of disease carrying arthropod vectors from other areas/countries into Hong Kong, it is important that the disinsection services delivered by these companies could achieve the anticipated effect.

When selecting pest control services providers to carry out the aircraft disinsection, the following factors are suggested for consideration:

1. Select a reputable company.
2. Company, preferably, specialized in providing pest control services and with previous experience in aircraft disinsection to the satisfaction of their clients.
3. Company which has employed personnel with specialized knowledge and technical skill in pest control.
4. Company which can provide information on their staffing proposal, detailed work plan, the precautionary and safety measures, and auditing mechanism.

When sourcing the pest control services providers, the requirement in the technical knowledge and skill of their employed personnel should be stated clearly. The following special terms on the technical requirement are suggested to be included.

### Employment of staff and Manner of Superintendence

- a. The contractor should provide the details of all its employees, which shall include the names of such persons, their grades, posts, sex, ages, identity card numbers, training records, and photographs. In case there is any change of any of its employees, the contractor shall submit revised details of all its employees.
- b. The contractor shall provide sufficient suitably trained, experienced and competent managerial and site supervisory staff for the maintenance and execution of the services.
- c. The contractor should nominate a Contract Manager in charge of the aircraft disinsection service and should have the full authority to make all necessary

decisions regarding the provision of the services and to receive all instructions/requests. The nomination should set out name, qualification and experience of the nominated Contract Manager.

- d. The Contractor Manager and other supervisory staff should possess at least a fixed number of years of experience (e.g. 5 years for Contract Manager and 2 years for supervisors) of direct supervisory experience in field staff management and pest control and possess the ability to deal with hazards and problems likely to be encountered as well as ways and means to prevent accidents.
- e. The Contract Manager should have attended and passed the test of a relevant and formal pest control courses of a fixed number of teaching hours (e.g. 40 hours) organized by the, e.g. the University Grants Committee or funded institutes or equivalent as recognized by the airlines representative. Supervisors should also have attended and passed the test of similar formal courses of less hours of teaching (e.g. 20 hours).
- f. The Contract Manager should also be the holder of a certificate, diploma, or degree in management studies issued by a relevant academic /educational / professional institution recognized by the airline representative.
- g. The airline representative may request the contractor to submit the syllabus of pest control course attended by the Contract Manager and supervisors for inspection before the commencement of the contract period to assess if the course is relevant.
- h. For general pest control worker, they should be physically capable of executing and maintaining the services properly and timely. They must have attended and completed a training programme on aircraft disinsection provided/arranged by the contractor. The contractor should be able to provide details of the course, including the date of the course, syllabus and teaching materials for inspection of airline representative. The contractor shall also keep clear training records of all workers and submit such records for airline representative inspection.
- i. The airline representative may also consider the need of requesting the contractor to nominate a Contract Advisor who shall have the capability to advise the contractor on technical matters relating to the aircraft disinsection services including but not limited to the use of pesticides, equipment and materials and preparation of training materials and to conduct training programmes for pest control workers. As such, the Contract Advisor should possess a bachelor degree or above in biology with subjects taken in, for examples, pest control, invertebrates, ecology, animal diversity, animal

physiology, biochemistry, etc.

Use of Pesticides, Equipment and Tools

- a. For the purpose of the contract, the contractor should only use those pesticides recommended by the World Health Organization for the aircraft disinsection. The contractor has to ensure that the aerosol products used meet all aviation and aircraft manufacturers technical and safety requirement, the WHO and ICAO (International Civil Aviation Organization) guidelines and only use those pesticides with particular active ingredients and formulation registered with the Agricultural, Fisheries and Conservation Department (AFCD) under the Pesticide Ordinance (Cap. 133). For more information on pesticide control in Hong Kong, please visit AFCD's website at:  
[http://www.afcd.gov.hk/english/quarantine/qua\\_pesticide/qua\\_pes\\_pes/qua\\_pes\\_pes\\_prc.html](http://www.afcd.gov.hk/english/quarantine/qua_pesticide/qua_pes_pes/qua_pes_pes_prc.html)
- b. The contractor shall submit the manufacturers' technical information, material safety data sheets, recommended concentration/dosage and any other information of the pesticides intended to be used or committed to be used for the services for airline's endorsement.
- c. For the purpose of the contract, use public health grade pesticides targeting at public health pests only. No pesticides which are manufactured for agricultural or horticultural purpose shall be used for the services.
- d. Allow only personnel who are fully trained and thoroughly conversant with and competent in the proper use and safe application of pesticides to handle and apply the pesticides in the performance of the services.
- e. Take all necessary precautionary measures to protect the pesticides used for disinsection from access by human beings and non-targeted species, pets, animals.
- f. All operators of equipment and tools shall be fully trained and thoroughly competent in the safe and proper use and operation of all equipment and tools and all associated equipment used in the execution of the services.
- g. Equipment and tools used for the purpose of the services should not cause any damage whatsoever to the aircraft.
- h. The contractor shall ensure the application of pesticides according to the guidelines provided by the Government authority.

**Pest Control Advisory Section of Food and Environmental Hygiene Department**  
**Port Health Office of Department of Health**  
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**Item 1: Permethrin ( Emulsifiable Concentrate)**

(a)	Composition and Physical Properties	<p>(i) Emulsifiable concentrate containing 5 to 10% Permethrin (with 25:75 cis:trans ratio) as the active ingredient and shall not be mixed with other pesticide.</p> <p>(ii) The emulsifiable concentrate should be suitable for dilution with water.</p> <p>(ii) The Permethrin content shall be declared (g/kg) and, when determined, the average measured content shall not differ from <math>\pm 15\%</math> of the declared content of the declared content.</p> <p>(iii) The Permethrin isomer ratio shall be declared and, when determined, the average measured ratio for 25:75 cis:trans permethrin shall be in the range 22.5-27.5 : 77.5-72.5.</p> <p>(iv) The material shall comply with the requirements of WHO specifications and evaluations for pesticides used in public health WHO specification 331/EC (September 2011). The WHO's link for the specifications is:  <a href="http://www.who.int/whopes/quality/Permethrin_25_75_specs_eval_WHO_Sep_2011.pdf?ua=1">http://www.who.int/whopes/quality/Permethrin_25_75_specs_eval_WHO_Sep_2011.pdf?ua=1</a></p>
(b)	Killing Effect	100% killing effect on cockroach within 24 hours at recommended application concentration.
(c)	Packing	Preferably in 1 litre per bottle.
(d)	Other requirements	<p>(i) The containers of the pesticide should have a suitable label with the following information:</p> <ul style="list-style-type: none"> <li>● AFCD registration number</li> <li>● directions for use</li> <li>● precaution and safety information</li> <li>● warning statement and</li> <li>● storage and disposal instructions</li> <li>● first aid treatment</li> <li>● supplier contact information</li> </ul> <p>(ii) The supplier should provide a suitable MSDS for the pesticide.</p>

### **Item 2: 2% Permethrin Aerosol**

(a)	Composition and Physical Properties	(i) An aerosol insecticide containing 2% permethrin as the only active ingredient with non-flammable, non-CFC propellant. (ii) The Permethrin isomer shall be of 25:75 cis:trans ratio. (iii) Suitable for disinsection inside aircraft.
(b)	Packing	Preferably in 250 to 500 ml litre per bottle.
(b)	Other requirements	(i) The containers of the pesticide should have a suitable label with the following information: <ul style="list-style-type: none"><li>● AFCD registration number</li><li>● directions for use</li><li>● precaution and safety information</li><li>● warning statement and</li><li>● storage and disposal instructions</li><li>● first aid treatment</li><li>● supplier contact information</li></ul> (ii) The supplier should provide a suitable MSDS for the pesticide.

### **Item 3: 2% d-phenothrin Aerosol**

(a)	Composition and Physical Properties	(i) An aerosol insecticide containing 2% d-phenothrin as the only active ingredient with non-flammable, non-CFC propellant. (ii) The trans-isomer content of the d-phenothrin shall not less than not less than 75% and not more than 85%. (iii) Suitable for disinsection inside aircraft.
(b)	Packing	Preferably in 250 to 500 ml litre per bottle.
(c)	Other requirements	(i) The containers of the pesticide should have a suitable label with the following information: <ul style="list-style-type: none"><li>● AFCD registration number</li><li>● directions for use</li><li>● precaution and safety information</li><li>● warning statement and</li><li>● storage and disposal instructions</li><li>● first aid treatment</li><li>● supplier contact information</li></ul> (ii) The supplier should provide a suitable MSDS for the pesticide.

**The script and information to be included in the announcement for Top of descent Disinsection**

In preparation for the top-of-descent disinsection, an in-flight announcement must be made by the crew to inform passengers of the upcoming disinsection.

**Script:**

“Ladies and gentlemen, to conform with health requirements, the aircraft cabin will now be sprayed. This procedure, recommended for this purpose by the World Health Organization, is necessary to avoid the introduction of harmful mosquitos into Hong Kong. Please remain seated and keep the aisles clear while the aircraft is being sprayed. Thank you.”

**The script and information to be included in the announcement for Blocks away Disinsection**

In preparation for the blocks away disinsection, an in-flight announcement must be made by the crew to inform passengers of the upcoming disinsection.

**Script:**

“Ladies and gentlemen, to conform with health requirements, the aircraft cabin will now be sprayed. This procedure, recommended for this purpose by the World Health Organization, is necessary to avoid the introduction of harmful mosquitos into Hong Kong. Please remain seated and keep the aisles clear while the aircraft is being sprayed. Thank you.”

**The script and information to be included in the announcement for On-arrival Disinsection**

In preparation for the on-arrival disinsection, an in-flight announcement must be made by the crew to inform passengers of the upcoming disinsection.

**Script:**

“Ladies and gentlemen, to conform with health requirements, the aircraft cabin will now be sprayed. This procedure is necessary to avoid the introduction of harmful mosquitos into Hong Kong. Please remain seated and keep the aisles clear while the aircraft is being sprayed. Thank you.”

**Exemptions:**

If a passenger has identified themselves as having a serious medical condition which may be affected by the on-arrival treatment (which can be verbal or written), they can disembark from the aircraft. However, ALL their personal belongings must remain on board the aircraft. Once the aircraft has undergone on-arrival disinsection treatment and all other passengers have disembarked, the exempted passenger may then retrieve their belongings from the aircraft to completely disembark.