

GUIDEBOOK TO THE REGISTRATION OF PUBLIC HEALTH PESTICIDES AND REPELLENTS AGAINST VECTORS

SECTION ONE: INTRODUCTION

1.1 Control of Vectors and Pesticides Act (CVPA)

All public health pesticide products and repellents intended for use against the five vectors (i.e. mosquitoes, flies, rodents, cockroaches and rat fleas) in Singapore are required to be registered with the National Environment Agency (NEA). It is an offence under the Act for any person to advertise, sell or supply vector pesticides and repellents which are not registered. The maximum fine for an offence is \$20,000 and/or 3 months' jail for the first conviction, and \$50,000 and/or 6 months' jail for subsequent convictions.

The two main objectives of this registration are to ensure that pesticides and repellents products sold in Singapore:-

- (a) do not pose undue hazards to the public and the environment; and**
- (b) are properly labelled and contain the declared amount of active ingredient(s).**

1.2 Types of Pesticides and Repellents Controlled

"Pesticide" refers to any substance or mixture or preparation of substances which contains one or more synthetic active ingredients and which is used for vector control. These pesticides include those which can be used by households directly (i.e. for general use), and those which should only be handled by licensed pest control operators (i.e. for restricted use) because of their high toxicity or concentration, thus requiring further mixing/dilution, or specialised equipment for dispensing.

Pesticides (i.e. organophosphorous group, organochlorine group and carbamate group) controlled under the Environmental Protection and Management Act administered by the Pollution Control Department (National Environment Agency) will require the Hazardous Substances Licence/ Permit. In addition, they are required to be registered as long as they are used against the five vectors stated above.

"Vector repellent" refers to any substance or mixture or preparation of such substances which contains one or more active ingredients and which is used or intended to be used for repelling vectors.

No registration will be required for:-

- (a) Fumigants controlled under the Hydrogen Cyanide (Fumigation) Act, even though these fumigants are used for vector (rodent) control;
- (b) Pesticides/repellents imported solely for re-export purpose;
- (c) Pesticides solely for agricultural¹ and/ or for gardening use;
- (d) Pesticides that are targeted at pests other than the five mentioned vectors (i.e. mosquitoes, flies, rodents, cockroaches and rat fleas).
- (e) Repellents of non-chemical properties (e.g. light, ultra-sound); and
- (f) Repellents containing active ingredients of plant/natural origins (ie. essential oil, neem, citronella).

¹ Please seek advice from AVA (Agri-Food & Veterinary Authority of Singapore) on the registration of agricultural pesticides.

1.3 Product Register

The list of public health pesticides and repellents registered with NEA may be downloaded from <http://www.nea.gov.sg/public-health/vector-control/registration-of-control-of-public-health-pesticides-and-repellents-against-vectors>.

SECTION TWO: APPLICATION OF REGISTRATION

2.1 The Applicant

Any person who advertises, sells and/ or supplies any public health pesticides locally, and is registered under the Business Registration Act/Accounting and Corporate Regulatory Authority (ACRA) to carry out business in Singapore, or in the case of a company, incorporated under the Companies Act, may apply for the registration.

2.2 How to Apply

Application forms (together with the registration guidelines) are obtainable from the following address:-

Central Licensing Unit
National Environment Agency
40 Scotts Road, Annex Block #04-00
Singapore 228231

Each application form is for the registration of **one** pesticide/vector repellent product only. Completed application forms must be submitted to the above-mentioned address together with all the relevant documents stated in Paragraph 2.4.

The flow chart in Annex 1 shows how applications are processed by the Department. The processing time takes about 2 weeks.

2.3 Application Form

The application form for registration may be downloaded from <http://www.nea.gov.sg/services-forms/licences-permits-building-plan-clearances>.

Applicants are requested to fill in the necessary details completely before submission. Incomplete application forms will be returned without consideration.

2.4 Documents Required For Registration

For the registration of a pesticide/vector repellent, the following documents are required:-

- (a) A copy of the Computer Information Business Profile from the Accounting and Corporate Regulatory Authority (ACRA) of Singapore in **full**;
- (b) A copy of the applicant's NRIC/ work permit/ employment pass/ PR status/re-entry permit;
- (c) A copy of the proposed label of the product (please refer to Section 3.3);
- (d) Full and detailed technical reports, including the following:
 1. The respective Material Safety Data Sheet (MSDS) of the product or the technical active ingredient (AI). Please see Annex 3 for the Guidelines for Information to be disclosed in Material Safety Data Sheet. In addition, for all MSDS to be accepted for the registration of the product of concern by the company, a letter of permission from the company (that produces the MSDS) must be submitted.

2. Methods of chemical analysis of the product (i.e. method for the extraction of the AI from the product).
 3. The respective toxicity studies of the product and the AI. These studies should identify the laboratory in which the study was carried out and bear the signature of the author of the report. Should the full toxicity study be unavailable, calculated values of the oral and dermal LD₅₀ of the product may be accepted. For this purpose, please refer to "The WHO Recommended Classification of Pesticides By Hazard and Guidelines to Classification 2009". Nevertheless, the parameters (substituted into the formula) must be justified with supporting documents [the MSDS of the **active ingredient(s)**].
 4. Bioefficacy reports of the product on each respective target pest(s). These reports should identify the laboratory in which the study was carried out and bear the signature of the author of the report. The AI concentrations tested in the bioefficacy studies should be equivalent to (or lower than) the application rate recommended on the label.
 5. Other related data / information (if any) pertaining to the active ingredients and to the product;
- (e) Approval from the other relevant authorities (if any). For pesticides/vector repellents listed under Part II of the Schedule in the Environmental Protection and Management Act, a copy of the Hazardous Substances Licence/Permit issued by the Pollution Control Department (National Environment Agency) must accompany the application.

Failure to submit credible, valid and relevant documents will result in the denial of registration. It is therefore crucial that all attachments submitted must bear the source and origin from where the documents are obtained. Documents, especially technical reports (e.g. MSDS and efficacy report of the product), that are self-generated or extracted from technical bulletins or from the internet, will not be accepted.

If the product is repackaged by the registrant, the registrant will be considered the product's manufacturer (for registration purposes), i.e. the Application Form (Part IV) and the product label ("Manufactured by") should state the registrant's particulars. However, the relevant technical documents submitted (e.g. MSDS) should originate from the original manufacturer of the product.

2.5 Fee

A non-refundable registration fee of S\$160 per pesticide/repellent product should be paid once the registration is approved. Cheques should be crossed and made payable to "National Environment Agency".

SECTION THREE: CRITERIA FOR APPROVAL OF REGISTRATION

3.1 Introduction

Pesticide/repellent products are categorised into two groups (i.e. "For General Use" and For Restricted Use). "For General Use" pesticides/repellents are those products which can be **used by householders directly**, usually without the need for further dilution or mixing. In this respect, the formulated product itself (based on the "WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2009") should be '**Unlikely to present acute hazard in normal use**'.

"For Restricted Use" pesticides/repellents refer to those products which **should only be used by pest control operators** because of their high toxicity or concentration, thus requiring further mixing/dilution, specialised equipment for dispensing, or have serious effects on human health. All rodenticide products are also classified under "For Restricted Use".

Generally, a pesticide/repellent product will be registered if:-

- (i) it contains permitted active ingredients; and
- (ii) its label conforms to the prescribed requirements.

Every individual product supplied, imported or manufactured by a supplier, importer or manufacturer for sale in local market will be issued a certificate of registration of pesticide/vector repellent with a unique registration number upon successful application.

3.2 Active Ingredients

Table 1 show the list of active ingredients (A.I.) permitted in “General Use” and “Restricted Use” products, highlighted with “✓”. This list is to be used as a guide and is subjected to review as new active ingredients come into the market.

Table 1: Permitted Active Ingredients.

Active Ingredient	Permitted in Products for	
	General Use	Restricted Use
D-allethrin	✓	✓
Azamethiphos	✓	✓
<i>Bacillus thuringiensis var. israelensis</i>	✓	✓
Bendiocarb		✓
Bioallethrin	✓	✓
S-bioallethrin	✓	✓
Bioresmethrin	✓	✓
Borax	✓	✓
Brodifacoum		✓
Bromadiolone		✓
Carbaryl		✓
Chlorpyrifos	✓	✓
Coumatetralyl		✓
Cyfluthrin	✓	✓
Beta-cyfluthrin	✓	✓
Lambda-cyhalothrin	✓	✓
Cypermethrin	✓	✓
Alpha-cypermethrin	✓	✓
Cyphenothrin	✓	✓
Cyromazine		✓
Deltamethrin	✓	✓
Dichlorvos	✓	✓
Diethyl toluamide	✓	✓
Difenacoum		✓
Dimethoate		✓
Dimethyl phthalate	✓	✓
Diphacinone		✓
Dipropyl isocinchomerate (MGK326)	✓	✓
Esbiol	✓	✓
Esbiothrin	✓	✓
Esfenvalerate	✓	✓
Ethyl butylacetylaminopropionate (EBA)	✓	✓
Ethyl hexanediol	✓	✓
Etofenprox	✓	✓
Fenitrothion	✓	✓

Active Ingredient	Permitted in Products for	
	General Use	Restricted Use
Fenthion		✓
Fenvalerate		✓
Fipronil	✓	✓
Flufenoxuron	✓	✓
Hexaflumuron		✓
Hydramethylnon	✓	✓
Hydroprene		✓
Hydroxyethyl isobutyl piperidine carboxylate	✓	✓
Imidacloprid	✓	✓
Imiprothrin	✓	✓
Malathion		✓
Methoprene		✓
Metofluthrin	✓	✓
D-Phenothrin	✓	✓
Permethrin	✓	✓
Phoxim		✓
Pirimiphos methyl		✓
Picaridin	✓	✓
Prallethrin	✓	✓
Propoxur	✓	✓
Pyrethrins	✓	✓
Pyrethrum	✓	✓
Pyriproxifen		✓
Temephos	✓	✓
Tetramethrin	✓	✓
D-tetramethrin	✓	✓
Thiamethoxam	✓	✓
D-transallethrin	✓	✓
Transfluthrin	✓	✓
Warfarin		✓

3.3 Product Label

3.3.1 Information Required to Appear on the Product Label

A label must be printed on or affixed to every container or package of the product. It must be in English and preferably one other official language of Singapore. The information required on a product label are listed below:-

- (a) Product/Trade/Brand Name;
- (b) Composition (% w/w) of the product content (name and percentage of active ingredients, percentage of inert ingredients);
- (c) Type of formulation (e.g. aerosol, bait, mat, coil);
- (d) WHO hazard classification (as stated in "The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2009");
- (e) Hazard warning statement or symbol (Please refer to Annex 2);
- (f) Statement of classification (i.e. "For General Use" or "For Restricted Use");
- (g) Net weight or volume of product;
- (h) Targeted pest(s);
- (i) Date of manufacture;
- (j) Date of expiry;
- (k) Toxicological effect(s) on non-target organism(s) (e.g. fish, birds);
- (l) Safety precaution(s);
- (m) Directions for use;
- (n) Storage and disposal information;
- (o) Practical treatment statement(s);
- (p) Guide to Doctor in case of poisoning;
- (q) Names and addresses of manufacturer and importer;
- (r) USEPA registration number (if any);
- (s) NEA registration mark (comprising a registration number and logo, please refer to Annex 4 for details); and
- (t) such other information as the Director-General Public Health may require.

Applicants are advised **not** to proceed with the printing of the final labels until the product label has been approved.

3.3.2 Construction of Label

Product containers and packages come in different shapes and sizes. Under normal circumstances, the label must contain all the required information [see 3.3.1(a) to (s)].

However, if there is space constraint, the following would be the essential information required to appear conspicuously on the package/container:

- (a) Brand Name
- (b) NEA registration mark (comprising a registration number and logo, please refer to Annex 4 for details)
- (c) Composition of ingredients
- (d) Type of formulation
- (e) WHO hazard classification
- (f) Hazard warning statement or symbol
- (g) Classified use
- (h) Net weight or volume of the product
- (i) Target pests
- (j) Date of manufacture
- (k) Date of expiry

The **remaining** information can appear in a separate leaflet/brochure enclosed or attached to the package.

Figures 1 to 3 are some examples of how a good label should be constructed.

Figure 1: Sample of Label Without Separate Leaflet For "General Use" Product

SIDE PANEL	MAIN PANEL	SIDE PANEL
<p>TARGET PESTS</p> <p>A fast acting, non-staining insect killer effective against flying and crawling insects, such as cockroaches, fleas, mites and mosquitoes.</p> <p>TOXICOLOGY EFFECT(S) ON NON-TARGET ORGANISMS Product is toxic to fish / birds / pets.</p> <p>SAFETY PRECAUTIONS</p> <p>AVOID CONTACT WITH SKIN & EYES. AVOID INHALATION OF SPRAY MIST. DO NOT SPRAY DIRECTLY ON HUMANS, FOOD, OR FOOD UTENSILS. CONTAINER IS PRESSURISED. DO NOT PUNCTURE / THROW INTO FIRE. DO NOT EXPOSE TO TEMPERATURE ABOVE 65°C (150°F). DO NOT SPRAY ON PLASTICS.</p> <p>PRACTICAL TREATMENT</p> <p>IF SWALLOWED - Induce vomiting by giving a tablespoon of salt in a glass of warm water. Repeat until vomitus is clear. Call a physician immediately. IF INHALED - Remove to fresh air. Call a physician immediately. IF IN EYES - Flush eyes with plenty of water for at least 15 minutes. Call a physician immediately. IF ON SKIN - In case of contact, remove contaminated clothing & immediately wash skin with soap & water.</p> <p>MEDICAL TREATMENT</p> <p>TREATMENT ACCORDING TO SYMPTOMS. IN CASE OF EMERGENCY, PLEASE CALL TELEPHONE NO. XXXXXXX</p>	<p>FOR GENERAL USE</p> <p>SINNEA-X-XXX/XXX/XXXX</p>  <p>XXX</p> <p>OIL-BASED AEROSOL</p> <p>KEEP OUT OF REACH OF CHILDREN</p> <p>CAUTION</p> <p>Unlikely to Present Acute Hazard in Normal Use</p> <p>ACTIVE INGREDIENTS : XXXXXXXXX X.XX% w/w XXXXXXXXX X.XX% w/w</p> <p>INERT INGREDIENTS : X.XX% w/w</p> <p>NET CONTENTS XXX ml</p>	<p>DIRECTIONS FOR USE</p> <p>Close all doors & windows. Press button & spray upwards throughout the room for 5-10 seconds. Leave doors & windows closed for 10 minutes. For individual insects, spray directly.</p> <p>STORAGE & DISPOSAL</p> <p>STORAGE - Do not store next to food or other articles intended for consumption by humans or animals.</p> <p>DISPOSAL - Do not reuse container. Do not litter.</p> <p>IMPORTED BY XXXXXXXXXXXXX XXXXXXXXXXXXX XXXXXXXXXXXXX XXXXXXXXXXXXX TEL NO : XXXXXXX FAX NO : XXXXXXX</p> <p>MANUFACTURED BY XXXXXXXXXXXXX XXXXXXXXXXXXX XXXXXXXXXXXXX XXXXXXXXXXXXX</p> <p>EPA REGISTRATION NO. XXX - XX</p> <p>DATE OF MFG XX - XX - XXXX</p> <p>DATE OF EXPIRY XX - XX - XXXX</p>

SIDE PANEL

MAIN PANEL

SIDE PANEL

PRECAUTIONARY STATEMENTS
WARNING
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
 DO NOT BREATHE SPRAY MIST. DO NOT GET IN EYES. AVOID CONTACT WITH SKIN. FOR EMERGENCY ASSISTANCE, PLEASE CALL XXXXXXXX.

PHYSICAL OR CHEMICAL HAZARDS
 WARNING - Flammable! KEEP AWAY FROM HEAT OR OPEN FLAME.

ENVIRONMENT HAZARDS
 KEEP OUT of any body of water. DO NOT APPLY where runoff is likely to occur. DO NOT CONTAMINATE WATER by cleaning of equipment or disposal of wastes.

FOR RESTRICTED USE 
SINNEA-X-XXX/XXX/XXXX

XXX

EMULSIFIABLE CONCENTRATE

ACTIVE INGREDIENT : XXXXXXXXX % w/w

INERT INGREDIENTS : XX.XX% w/w

WARNING



KEEP OUT OF REACH OF CHILDREN
WHO CLASS II
Moderately Hazardous

IMPORTED BY XXXXXXXXXX
 XXXXXXXXXX
 TEL NO : XXXXXXXX
 FAX NO : XXXXXXXX

MANUFACTURED BY : XXXXXXXXXX
 XXXXXXXXXX

EPA REGISTRATION NO. XX - XXXX

DATE OF MFG : XX - XX - XXXX
DATE OF EXPIRY : XX - XX - XXXX

DIRECTIONS FOR RESTRICTED USE

LAWN INSECT CONTROL: TO CONTROL INSECTS LISTED BELOW, apply RECOMMENDED RATES. For Fleas, Ticks and Mites, which are commonly found near the house and may enter the house, spray a 5 ft. band of soil around the house, as well as the house foundation wall to a height of 2-3 ft. Repeat application if necessary.

INSECTS	RATE/ 100 m ²	water	REMARKS
FLIES	XX m ³	XX L	Mow grass & water well before treatment but delay application until grass is dry. Do not water again until necessary.
FLEAS	XX m ³	XX L	Do not apply to animals.
ROACHES	XX m ³	XX L	Make a 0.2% finished spray. Make spot applications as a coarse spray where insects hide. Apply monthly.

STORAGE & DISPOSAL

STORAGE - Do not store next to food or other articles intended for consumption by humans or animals.
DISPOSAL - Do not reuse container. Contact licensed industrial waste collector for proper disposal.

TOXICOLOGICAL EFFECT(S) ON NON-TARGET ORGANISMS

This product is toxic to fish / birds / bees.

PRACTICAL TREATMENT

IF SWALLOWED - Induce vomiting by giving a tablespoon of salt in a glass of warm water. Repeat until vomitus is clear. Call a physician immediately.

IF INHALED - Remove to fresh air. Call a physician immediately.

IF IN EYES - Flush eyes with plenty of water for at least 15 minutes. Call a physician immediately.

IF ON SKIN - In case of contact, remove contaminated clothing & immediately wash skin with soap & water.

MEDICAL TREATMENT

TO PHYSICIAN : XXX is a reversible cholinesterase inhibitor. Do not use oximes such as 2-PAM. Give Atropine 2 mg. Intravenously or subcutaneously. If in eye instill one drop of Homatrophine.

Figure 3: Sample of Label With Separate Leaflet

MAIN LABEL

FOR GENERAL USE
SINNEA-X-XXX/XXX/XXXX 

XXX XXg

INSECTICIDE IMPREGNATED CHALK

This product contains :
 XXXXXXXX X.XX% w/w XXXXXXXX X.XX% w/w

<p>EFFECTIVE AGAINST cockroaches and ants. The toxicity of this product to non-target organisms has not been determined.</p>	<p>KEEP OUT OF REACH OF CHILDREN CAUTION Unlikely to Present Acute Hazard in Normal Use</p>
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IMPORTED BY: XXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXX	DATE OF MFG XX-XX-XX DATE OF EXP XX-XX-XX
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DIRECTIONS FOR USE
 Use it at night, when most insects are likely to appear. Draw parallel lines 2 to 3 cm apart, across the normal path of insects or around their hiding places. For effective control, store the chalk at cool, dry places.

FRONT (separate leaflet)

FOR GENERAL USE
SINNEA-X-XXX/XXX/XXXX 

XXX
 INSECTICIDE IMPREGNATED CHALK
 XXg

ACTIVE INGREDIENTS: XXXXX X.XX% w/w
 XXXX X.XX% w/w

INERT INGREDIENTS: .XX% w/w

KEEP OUT OF REACH OF CHILDREN

CAUTION

Unlikely to Present Acute Hazard in Normal Use

EFFECTIVE AGAINST cockroaches & ants. The toxicity of this product to non-target organisms has not been determined.

SAFETY PRECAUTIONS
 Avoid all contact by mouth. Keep away from food & drinks. Do not apply to clothing / fabric / bedding. Keep children / pets away from treated area.

BACK (separate leaflet)

PRACTICAL TREATMENT
 IF SWALLOWED - Induce vomiting by giving a tablespoon of salt in a glass of warm water. Repeat until vomitus is clear. Call a physician immediately.
 IF IN EYES - Flush eyes with plenty of water for at least 15 minutes. Call a physician immediately.
 IF ON SKIN - In case of contact, remove contaminated clothing & immediately wash skin with soap & water.

STORAGE AND DISPOSAL
 STORAGE - Do not store next to food or other articles intended for consumption by humans or animals.
 DISPOSAL - Do not reuse container. Do not litter.

IMPORTED BY:
 XXXXXXXXXXXXXXXX
 XXXXXXXXXXXXXXXX
 TEL. NO. XXXXXXXX
 FAX NO. XXXXXXXX

MANUFACTURED BY:
 XXXXXXXXXXXXXXXX
 XXXXXXXXXXXXXXXX

DATE OF MANUFACTURE: XX - XX - XXXX

DATE OF EXPIRY: XX - XX - XXXX

EPA REGISTRATION NO.
 XX - XXXX

(SEE OVERLEAF)

3.4 Evaluation of Label

Upon submission of the draft label for a product together with the application, the label will be evaluated for compliance with the labeling requirements. Applicants will be informed of any change to the label if needed. Once the final label is approved, the registrant must print the approved label and the registration mark onto the product container and package before the product may be displayed for sale in the local market.

3.5 Unsuccessful Application

When an application for an existing product is not approved, the importer/trader is given **seven days** to ensure that the product is no longer displayed and sold in the market. Importer will be given up to **one month** to show proof that the stocks have been retrieved and disposed of, either destroyed in Singapore or re-exported.

SECTION FOUR: SAMPLING PROCEDURE

NEA will check and monitor the registered products from time to time to ensure that they still comply with the required standards. In this respect, arrangement will be made with the registrant to sample the products onsite. The registrant will also be required to submit, at his own expense, the sealed samples to an accredited laboratory for the purpose of analysis. The report of analysis (either original or certified true copy) should be submitted to the Department thereafter.

SECTION FIVE: CANCELLATION OF REGISTRATION AND REMOVAL OF REGISTRATION MARKS

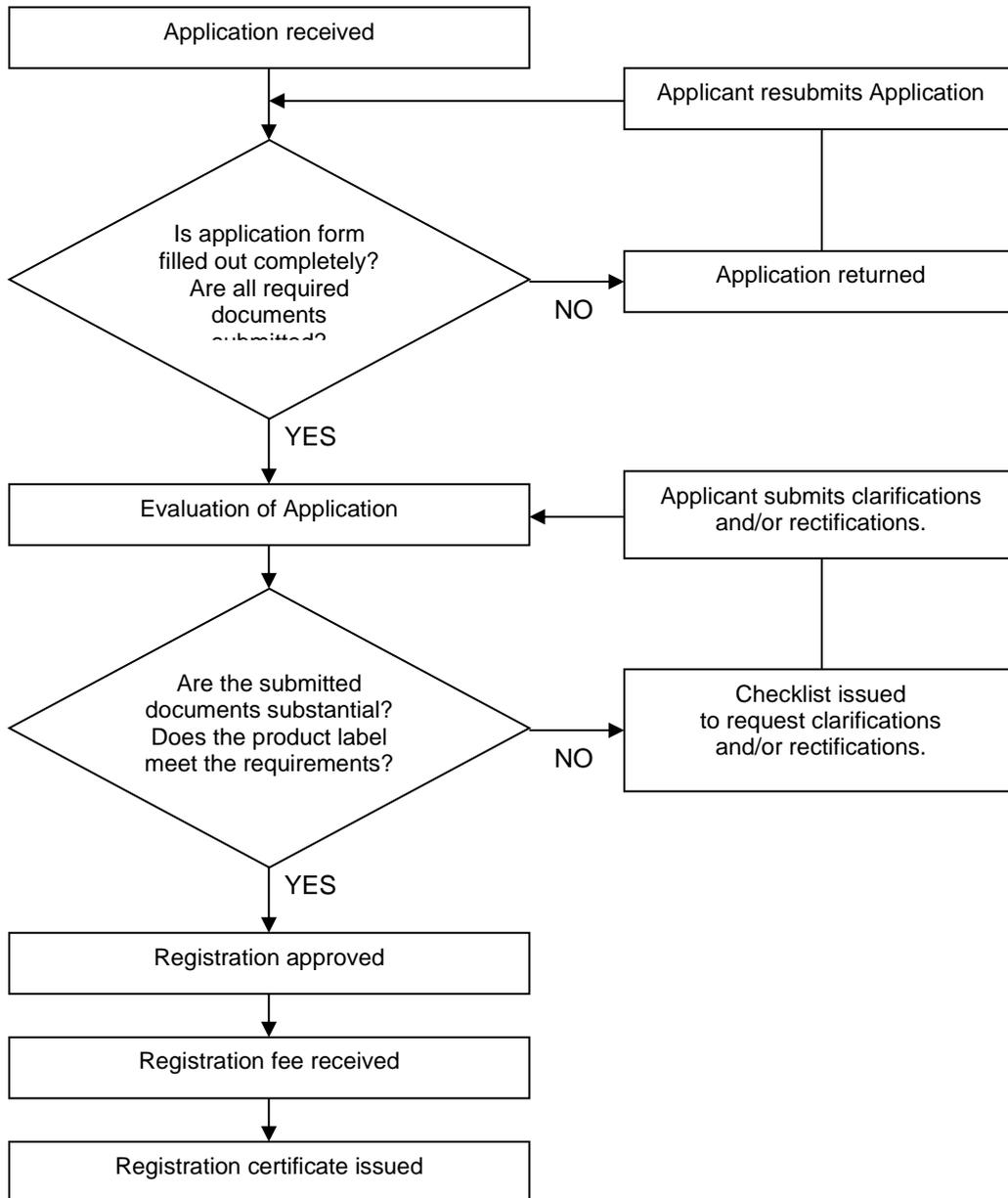
Under section 11 of the Act, a registration will be cancelled if a registered pesticide/repellent:

- (a) is subsequently found to be hazardous;
- (b) is not being prepared in accordance with the particulars registered in respect of the product;
- (c) no longer conforms to prescribed standards;
- (d) is no longer available for purchase in Singapore;
- (e) has been registered upon false information provided by the registrant;
- (f) the registrant of which has failed to comply with any of the conditions subject to which the product has been registered; or he has intervened or failed to comply with the provisions of the Act or regulations;
- (g) container or package or the label printed/affixed thereto does not comply with the prescribed requirements; and
- (h) is being advertised in a manner that is false, misleading or deceptive.

Upon the cancellation of the registration of a product, the Director General of Public Health may require the registrant to remove, cancel or obliterate the registration mark from every container and package of the product. The registrant may also be required to recall all stocks and to cease the sale, supply or distribution of the product.

Written appeals to the Chief Executive Officer (CEO) can be made within 14 days of the date of receipt of the notice informing of conditions imposed on registration or refusal or cancellation of the registration.

REGISTRATION OF PUBLIC HEALTH PESTICIDES AND REPELLENTS
AGAINST VECTORS



WHO HAZARD CLASSIFICATION - ACUTE LD50 VALUES OF FORMULATED PRODUCTS

Classification and Signal Wording	Pictorial Reference for Each Class	Acute LD ₅₀ for rat (mg/kg body weight)	
		ORAL	DERMAL
Extremely Hazardous CLASS Ia "DANGER – POISON"		< 5	< 50
Highly Hazardous CLASS Ib "DANGER – POISON"		5-50	50-200
Moderately Hazardous CLASS II "WARNING"		50-2000	200-2000
Slightly Hazardous CLASS III "CAUTION"		Over 2000	Over 2000
UNLIKELY TO PRESENT ACUTE HAZARD IN NORMAL USE "CAUTION"		5000 or higher	

**Guidelines for information to be disclosed in Material Safety Data Sheet
(MSDS)**

(Abridged version omitting items not required for NEA registration. Full version is available as template at <http://www.msdssearch.com/backgroundn.htm>)

Section 1: Product and company identification

Product name:
Synonyms:
Product codes:
Product use:
Chemical name:
Chemical family:
Chemical formula:
Manufacturer:
Division:
Address:
Prepared by:
Emergency phone:
Other calls:
Fax phone:

Section 2: Composition / Information on ingredients

Ingredient: cas no, % w/w, % vol

Section 3: Hazards identification

Emergency overview:
Routes of entry:
Acute health hazards:
Chronic health hazards:
Potential health effects
 eyes:
 skin:
 ingestion:
 inhalation:
Medical conditions generally aggravated by exposure:
Carcinogenicity:

Section 4: First aid measures

Eyes:
Skin:
Ingestion:
Inhalation:
Notes to physicians or first aid providers:

Section 5: Fire-fighting measures

Section 6: Accidental release measures

Section 7: Handling and storage

Handling and storage:
Other precautions:

Section 8: Exposure controls / Personal protection

Engineering controls:
Ventilation:
Respiratory protection:
Eye protection:
Skin protection:
Work hygienic practices:
Other protective clothing or equipment:
Exposure guidelines:

Section 9: Physical and chemical properties

Section 10: Stability and reactivity

Stability:
Conditions to avoid (stability):
Incompatibility (material to avoid):

Section 11: Toxicological information

Toxicological information

Section 12: Ecological information

Ecological information

Section 13: Disposal considerations

Waste disposal method:

Section 14: Transport information

Section 15: Regulatory information

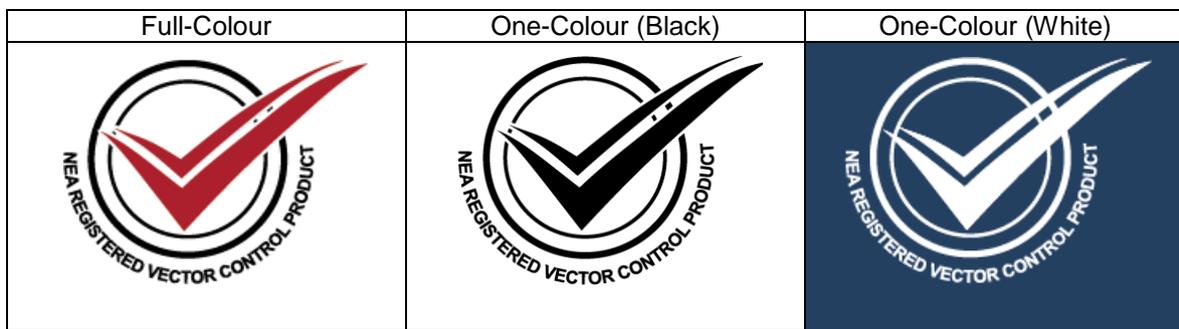
Section 16: Other information

NEA Registration Mark

With effect from 1 July 2015, pesticides and repellents that have been successfully registered will be issued a registration mark, comprising two elements:

- (a) a unique registration number in the form of '**SINNEA-X-XXX/XXX/XXXX**'; and
- (b) a registration logo.

The registration logo is made up of a double-tick atop two rings of varying thickness, and the words, "NEA Registered Vector Control Product". It is available in three colour choices:



Applicants may refer to the registration mark usage guidelines for more details:
www.nea.gov.sg/docs/default-source/public-health/vector-control/registration-mark-usage-guidelines.pdf?sfvrsn=6.