Proposed Registration Decision PRD2025-04

Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, Saccharomyces cerevisiae strain Y243, and Related End-Use Products

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For further information, please contact:

Publications
Pest Management Regulatory Agency
Health Canada
2 Constellation Drive
8th floor, A.L. 2608 A
Ottawa, Ontario K1A 0K9

Internet: canada.ca/pesticides
pmra.publications-arla@hc-sc.gc.ca

Information Service:
1-800-267-6315
pmra.info-arla@hc-sc.gc.ca

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Overview

Proposed Registration Decision for Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, and *Saccharomyces cerevisiae* strain Y243

Health Canada's Pest Management Regulatory Agency (PMRA), pursuant to subsection 28(1) of the *Pest Control Products Act*, is proposing registration for the sale and use of Rescue Egg Technical, Big Bag Indole Technical, Rescue Sucrose Technical, Rescue Trimethylamine Technical, Rescue Saccharomyces cerevisiae Technical, and related end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, containing the active ingredients putrescent whole egg solids, indole, sucrose, trimethylamine, and *Saccharomyces cerevisiae* strain Y243, to attract and trap flies in urban and rural residential and recreational areas.

Putrescent whole egg solids were first registered in Canada in 1983 for use as an animal repellent and a feeding deterrent on a variety of non-edible plants, trees and shrubs in nurseries, greenhouses, forestry plantations, and residential outdoor settings. All registered products containing putrescent whole egg solids were discontinued by the registrant in 2024.

An evaluation of available scientific information found that, under the approved conditions of use, the health and environmental risks and the value of the pest control products are acceptable.

This Overview describes the key points of the evaluation, while the Science evaluation Section provides detailed technical information on the human health, environmental and value assessments of putrescent whole egg solids, indole, sucrose, trimethylamine, *S. cerevisiae* strain Y243, and related fly trap end-use products.

What does Health Canada consider when making a registration decision?

The key objective of the *Pest Control Products Act* is to prevent unacceptable risks to individuals and the environment from the use of pest control products. Health or environmental risk is considered acceptable[1] if there is reasonable certainty that no harm to human health, future generations or the environment will result from use or exposure to the product under its proposed conditions of registration. The Act also requires that products have value[2] when used according to the label directions. Conditions of registration may include precautionary measures on the product label to further reduce risk.

To reach its decisions, Health Canada's PMRA applies modern, rigorous risk-assessment methods and policies. These methods consider the unique characteristics of sensitive subpopulations in humans (for example, children). They also consider the unique characteristics

[1] "Acceptable risks" as defined by subsection 2(2) of the *Pest Control Products Act.*

[2] "Value" as defined by subsection 2(1) of the *Pest Control Products Act*: "the product's actual or potential contribution to pest management, taking into account its conditions or proposed conditions of registration, and includes the product's (*a*) efficacy; (*b*) effect on host organisms in connection with which it is intended to be used; and (*c*) health, safety and environmental benefits and social and economic impact."

of organisms in the environment. These methods and policies also consider the nature of the effects observed and the uncertainties when predicting the impact of pesticides. For more information on how Health Canada's PMRA regulates pesticides, the assessment process and risk-reduction programs, please visit the Pesticides and Pest Management portion of Canada.ca.

Before making a final registration decision on putrescent whole egg solids, indole, sucrose, trimethylamine, *S. cerevisiae* strain Y243, and related fly trap end-use products, Health Canada's PMRA will consider any written comments received from the public in response to this consultation document.[3] Health Canada will then publish a Registration Decision[4] on putrescent whole egg solids, indole, sucrose, trimethylamine, *S. cerevisiae* strain Y243, and related fly trap end-use products, which will include the decision, the reasons for it, a summary of comments received on the proposed registration decision and Health Canada's response to these comments.

For more details on the information presented in this Overview, please refer to the Science evaluation Section of this consultation document.

What are Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, and *Saccharomyces cerevisiae* strain Y243?

Putrescent whole egg solids are a non-conventional product typically used as an animal repellent or a feeding deterrent to protect non-edible plants. In fly trapping products, putrescent whole egg solids are an attractant for pest fly ("filth fly") species, including house flies and blow flies. Putrescent whole egg solids begin to decompose on contact with water and release airborne compounds that attract filth flies for egg-laying and feeding.

Indole is a non-conventional organic compound formulated as a white-yellow crystalline solid with a fecal odour that is used to attract flies.

Trimethylamine is a non-conventional organic compound formulated as a colorless gas with a fishlike odour that is used to attract flies.

Saccharomyces cerevisiae strain Y243 (baker's yeast) is a non-conventional product used as a fermentation agent, which releases airborne compounds to attract flies. The strain of *S. cerevisiae* used to produce strain Y243 is marketed as baker's yeast and is the same strain used to produce the food grade edible ingredient.

Sucrose (also referred to as table sugar or cane sugar) is a non-conventional product that feeds the yeast when used in a fermentation reaction process to attract flies.

[3] "Consultation statement" as required by subsection 28(2) of the *Pest Control Products Act*.

[4] "Decision statement" as required by subsection 28(5) of the *Pest Control Products Act*.

Health considerations

Can approved uses of Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, and *Saccharomyces cerevisiae* strain Y243 affect human health?

Putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 are unlikely to affect human health when used according to label directions.

Potential exposure to putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 may occur when handling products, including the loading of reusable versions, or when standing close enough to inhale the fumes from the loaded traps, despite the unpleasant odour.

Toxicology studies in laboratory animals describe potential health effects from varying levels of exposure to a chemical and identify the dose where no effects are observed. When assessing health risks, two key factors are considered: the levels where no health effects occur and the levels to which people may be exposed. The levels used to assess risks are established to protect the most sensitive human population (for example, children and nursing mothers). As such, sex and gender are taken into account in the risk assessment. Only uses for which the exposure is well below levels that cause no effects in animal testing are considered acceptable for registration.

Putrescent whole egg solids are of low toxicity but are considered potential sensitizers, and are known allergens.

Sucrose and *S. cerevisiae* strain Y243 (baker's yeast) have an extensive history of safe food use. However, microbial pest control agents (MPCAs) such as yeast are considered to be potential eye irritants and all MPCAs are considered to be potential sensitizers.

Publicly available toxicology information was assessed for trimethylamine and indole.

Trimethylamine is of high acute toxicity by the oral route of exposure and is of low acute toxicity by the inhalation route of exposure. It is extremely irritating or corrosive to eyes and skin. Animals given repeated high doses of trimethylamine in the diet showed decreases in body weight gain and food consumption, and increased tissue damage in the gastrointestinal tract. In pregnant animals, exposure to trimethylamine by the oral route of exposure showed no evidence of sensitivity of the young. Trimethylamine is not mutagenic or genotoxic.

Indole is of moderate acute toxicity by the oral and dermal routes of exposure. It is irritating to the respiratory tract, corrosive to eyes, non-irritating to skin, and is not a skin sensitizer. Animals given repeated high doses of indole in the diet exhibited decreases in body weight gain. Indole is not mutagenic or genotoxic. The levels of indole in the proposed fly trap end-use products are similar to those produced naturally in the human body.

The end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, contain a mixture of putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243, which act as the insect attractant (bait). In laboratory animals, the fly

trap bait was considered to be of low acute toxicity by the oral route of exposure. Published scientific literature and publicly available information for the active ingredients was used to inform the toxicology profile of the bait. Consequently the fly trap bait is considered to be of low acute toxicity by the oral route of exposure, corrosive to eyes and skin, and a potential sensitizer. The end-use product labels also require an egg allergen warning statement.

Residues in food and drinking water

Dietary risks from food and drinking water are acceptable.

The end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, are not proposed for food or feed uses. Dietary exposure, including drinking water, is not expected from the proposed use of putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 combined as an insect attractant (bait). Consequently, health risks from dietary exposure are acceptable for all segments of the population, including infants, children, adults, and seniors.

Risks in residential and other non-occupational environments

Estimated risk for residential and other non-occupational exposure is acceptable.

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are domestic class products proposed for outdoor use as insect traps on residential properties, including farms, and in areas of high fly activity, such as garbage and compost piles. Fly Trap and Big Bag Fly Trap are disposable traps, while Reusable Fly Trap, Fly Trap MAX, and POP! Fly Trap are reusable. All five traps contain bait pouches dissolved in water and can be disposed of in the garbage. Reusable traps can be manually emptied and re-loaded with a new water-soluble bait pouch.

The product labels will include measures to reduce user and bystander (including children and companion animals) exposure such as instructions to wear waterproof gloves when handling (including loading and emptying) the reusable fly traps, to keep the end-use products out of reach of children, and to hang traps in inaccessible areas. Furthermore, the traps should only be used outdoors in well-ventilated areas.

Residential and non-occupational exposure to Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap is expected to be low when label directions are observed. Consequently, the health risk to residents and the general public is acceptable.

Occupational risks from handling Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap

An occupational risk assessment was not required for Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap.

Since Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are domestic class products, an occupational risk assessment was not required.

Environmental considerations

What happens when Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, and *Saccharomyces cerevisiae* strain Y243 are introduced into the environment?

When used according to label directions, environmental risks associated with putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 and their fly trap end-use products are acceptable.

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, all containing the attractants putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243, consist of a water-soluble pouch containing the attractants that is enclosed in a plastic bag or bottle. The traps are filled with water and hung outdoors near homes. The environmental releases from the traps are expected to be minimal. Therefore, the environmental risks associated with these fly trap products are acceptable when they are used according to label directions.

Value considerations

What is the value of Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap?

These five related fly trap products can be used to attract, trap, and subsequently reduce populations of filth fly species, which are potential disease vectors for humans and livestock.

The registration of Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap will provide Canadians with a non-conventional method of reducing filth flies in urban and rural residential and recreational areas compared to sprays or baits with conventional insecticides. Due to the non-conventional mode of action of these products, resistance is very unlikely to occur; therefore, these products may aid in reducing insecticide resistance in fly populations.

Measures to minimize risk

Labels of registered pesticide products include specific instructions for use. Directions include risk-reduction measures to protect human and environmental health. These directions must be followed by law.

The key risk-reduction measures being proposed on the labels of Rescue Egg Technical, Big Bag Indole Technical, Rescue Sucrose Technical, Rescue Trimethylamine Technical, Rescue Saccharomyces cerevisiae Technical, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap to address the potential risks identified in this assessment are as follows.

Key risk-reduction measures

Human health

The following hazard statements are required on the technical grade active ingredient labels:

- "POTENTIAL SENSITIZER" and "Warning, contains the allergen egg" on Rescue Egg Technical;
- "DANGER – CORROSIVE TO EYES" and "POISON" on Big Bag Indole Technical;
- "DANGER POISON" and "CORROSIVE TO EYES and SKIN" on Rescue Trimethylamine Technical; and
- "CAUTION - EYE IRRITANT" and "POTENTIAL SENSITIZER" on Rescue Saccharomyces cerevisiae Technical.

Additionally, standard hazard and precautionary statements are required on the technical grade active ingredient labels.

The following hazard statements are required on the end-use product labels: "DANGER - CORROSIVE TO EYES and SKIN", "POTENTIAL SENSITIZER", and "Warning, contains the allergen egg". Standard precautionary statements are also required on the end-use product labels to inform users that products are corrosive to the eyes and skin, to not apply if allergic to eggs, and to warn of the potential for sensitization and irritation to the respiratory tract.

Domestic users handling the reusable traps (Reusable Fly Trap, Fly Trap MAX, and POP! Fly Trap) will be required to wear waterproof gloves when handling (including loading and emptying) the fly traps.

Relevant standard label requirements apply to products with water-soluble packaging to mitigate user exposure.

To limit bystander exposure, the end-use product labels require the precautionary statements "Keep out of reach of children and pets" and "Only use traps outdoors in well-ventilated areas".

Environment

Label statements ensuring disposal in household garbage are required.

Next steps

Before making a final registration decision on putrescent whole egg solids, indole, sucrose, trimethylamine, *S. cerevisiae* strain Y243, and related end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, Health Canada's PMRA will consider any written comments received from the public in response to this consultation document up to 45 days from the date of publication (25 July, 2025) of this document. Please forward all comments to PMRA Publications, through the Public Engagement Portal (Public Engagement Forms – Consultation Comment).

Health Canada will then publish a Registration Decision, which will include its decision, the reasons for it, a summary of comments received on the proposed decision and Health Canada's response to these comments.

Other information

When Health Canada's PMRA makes its registration decision, it will publish a Registration Decision on putrescent whole egg solids, indole, sucrose, trimethylamine, *S. cerevisiae* strain Y243, and related fly trap end-use products (based on the Science evaluation Section of this consultation document). In addition, the test data referenced in this consultation document will be available for public inspection, upon application, in the PMRA's Reading Room. For more information or if you have questions, please contact the PMRA's Pest Management Information Service.

Science evaluation

Putrescent Whole Egg Solids, Indole, Sucrose, Trimethylamine, *Saccharomyces cerevisiae* strain Y243, and Related End-Use Products

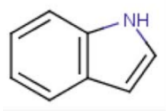
1.0 The Active Ingredients, Their Properties and Uses

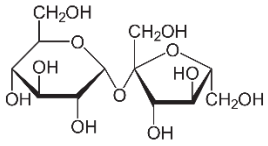
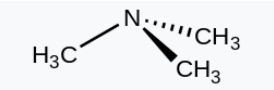
1.1 Identity of the Active Ingredients

Putrescent Whole Egg Solids:

Active substance	Putrescent whole egg solids
Function	Insecticide
Chemical name:	
1. International Union of Pure and Applied Chemistry (IUPAC)	Not applicable
2. Chemical Abstracts Service (CAS)	Not applicable
CAS number	51609-52-0
Molecular formula	Not applicable
Molecular weight	Not applicable
Structural formula	Not applicable
Purity of the active ingredient	100%

Indole:

Active substance	Indole
Function	Insecticide
Chemical name:	
1. IUPAC	1H-Indole
2. CAS	1H-indole
CAS number	120-72-9
Molecular formula	C_8H_7N
Molecular weight	117.15
Structural formula	

Purity of the active ingredient	100%
Sucrose:	
Active substance	Sucrose
Function	Insecticide
Chemical name:	
1. IUPAC	β-D-fructofuranosyl α-D-glucopyranoside
2. CAS	α-D-glucopyranoside, β-D-fructofuranosyl
CAS number	57-50-1
Molecular formula	$C_{12}H_{22}O_{11}$
Molecular weight	342.30
Structural formula	
Purity of the active ingredient	99.94%
Trimethylamine:	
Active substance	Trimethylamine
Function	Insecticide
Chemical name:	
1. IUPAC	*N,N*-dimethylmethanamine
2. CAS	Methanamine, N,N-dimethyl-
CAS number	75-50-3
Molecular formula	$(CH_3)_3N$
Molecular weight	59.11
Structural formula	
Purity of the active ingredient	100%

***Saccharomyces cerevisiae* strain Y243:**

Active microorganism	*Saccharomyces cerevisiae* strain Y243
Function	Biological Insecticide – for use in fly trap baits
Binomial name	*Saccharomyces cerevisiae* strain Y243
Taxonomic designation:	
Superkingdom	Eukaryota
Kingdom	Fungi
Subkingdom	Dikarya
Phylum	Ascomycota
Subphylum	Saccharomycotina
Class	Saccharomycetes
Order	Saccharomycetales
Family	Saccharomycetaceae
Genus	*Saccharomyces*
Species	*cerevisiae*
Strain	Y243
Patent status information	None
Minimum purity of active ingredient	Rescue Saccharomyces cerevisiae Technical: 100% (w/w); Reusable Fly Trap / Fly Trap / Fly Trap MAX / POP! Fly Trap / Big Bag Fly Trap: 6.55% (w/w)

1.2 Physical and Chemical Properties of the Active Ingredients and End-Use Products

Technical Product— Rescue Egg Technical

Property	Result
Colour and physical state	Light brown solid
Odour	Typical for dried eggs
Melting range	Not applicable
Boiling point or range	Not applicable
Density	0.45–0.48 g/cm^3
Vapour pressure at 20°C	Not applicable
Ultraviolet (UV)-visible spectrum	Not applicable

Property	Result
Solubility in water	Almost insoluble in water at room temperature
Solubility in organic solvents	Insoluble in petroleum distillate, isopropanol, and 1,1,1-trichloroethane
n-Octanol-water partition coefficient (K_{ow})	Not applicable
Dissociation constant (pK_a)	Not applicable
Stability (temperature, metal)	Stable in closed container; will rapidly decompose when exposed to air and moisture.

Technical Product— Big Bag Indole Technical

Property	Result
Colour and physical state	White solid
Odour	Unpleasant to floral odour, floral in higher dilution
Melting range	52.3–54.2°C
Boiling point	254°C
Density	1.22 g/cm^3
Vapour pressure at 25°C	3.4 Pa
UV-visible spectrum	No absorption expected at $\lambda > 300$ nm
Solubility in water	3.56 g/L at 25°C
Solubility in organic solvents	Soluble in hot alcohol, ether, benzene, toluene, fixed oils, propylene glycol, and ethanol; Insoluble in mineral oil and glycerol
K_{ow}	log K_{ow} = 2.14
pK_a	pK_a = 16.2
Stability (temperature, metal)	Stable for 12 months when stored in its original package, tightly sealed in a cool (46–90°F; 7.78–32.22°C) and dry location out of direct heat and light.

Technical Product— Rescue Sucrose Technical

Property	Result
Colour and physical state	White crystalline solid
Odour	Characteristic caramel
Melting point	185.5°C
Boiling point or range	Not applicable
Density	1.5805 g/cm^3
Vapour pressure at 25°C	4.71×10^{-14} Pa
UV-visible spectrum	Not applicable

Property	Result
Solubility in water	200 g/100 mL at 20°C
Solubility in organic solvents	Very soluble in methanol, slightly soluble in ethanol; Insoluble in ethyl ether
K_{ow}	log K_{ow} = -3.70
pK_a	pK_a = 12.6
Stability (temperature, metal)	Granulated sugar: stable with aluminum, stainless steel; Liquid sugar: stable to stainless steel, aluminum and good stability to bronze.

Technical Product— Rescue Trimethylamine Technical

Property	Result
Colour and physical state	Colourless gas at room temperature
Odour	Ammoniacal odour at higher concentration, fishy odour at low concentration
Melting point	-117.3°C
Boiling range	2.9–3.5°C
Density	0.63–0.67 g/mL at 20°C
Vapour pressure at 20°C	1.909×10^3 hPa
UV-visible spectrum	No absorption expected at $\lambda > 300$ nm
Solubility in water	Completely soluble in water
Solubility in organic solvents	Miscible in common organic solvents (alcohol, ether, benzene, toluene, xylene, ethylbenzene, and chloroform)
K_{ow}	log K_{ow} = 0.245
pK_a	pK_a = 9.81
Stability (temperature, metal)	Containers of trimethylamine should be stored separately from mercury, strong acids and oxidizing agents and halogenated compounds.

Technical Product— Rescue Saccharomyces cerevisiae Technical

Property	Result
Colour and physical state	Tan to pale beige; powder
Odour	Mild yeast odour
Bulk density	0.70 ± 0.02 g/cm^3
pH of 1% dispersion in water	6.4 ± 0.1 at 21°C
Stability (temperature, metal)	Stable
Water solubility	Negligible (dispersible)

End-use products— Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap – same formulation

Property	Result
Colour and physical state	Speckled light brown solid
Odour	Mildly unpleasant; rotting organic matter after addition of water
Formulation type	Granular
Label concentration	Putrescent Whole Egg Solids…50.57% Trimethylamine…0.92% Sucrose…21.28% Indole…0.06% *Saccharomyces cerevisiae* strain Y243…6.55%
Container material and description	Polyvinyl alcohol-based thermoplastic film; soluble in cold water
Density	0.73 g/cm^3 at 20°C
Viscosity	Not applicable
pH of 1% dispersion in water	6.5–7.5
Oxidizing or reducing action	The products contain no oxidizing or reducing agents
Storage stability	The products are found to be stable after 12 months of storage in the commercial containers at 20–40°C
Corrosion characteristics	The products are non-corrosive in their dry form in the water-soluble pouch but will be corrosive to metals once the water-soluble pouch is placed in water.
Explodability	Not applicable

1.3 Directions for use

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are each comprised of a physical trap body (bag-style or bottle-style) that contains a water-soluble pouch of the active ingredients (putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243). The attractant (active ingredient blend) is a wettable granule formulation packaged in a 35-gram or 70-gram size pouch. The attractant pouch will dissolve when water is added and will activate within two to five hours, creating an odour attractive to flies. The trap should be replaced when full, when contents dry out, or after 30 days – whichever comes first.

1.4 Mode of action

These five end-use products do not have an insecticidal mode of action (in other words, Insecticide Resistance Action Committee (IRAC)) because they are non-conventional attractants for trapping products. The active ingredients in these products, when combined and mixed with water, create a putrefaction-fermentation reaction as they decompose.

During decomposition, the active ingredients mix together and break down, releasing airborne compounds that filth flies smell and orient towards to lay their eggs and/or feed. The flies enter the one-way entrances and eventually perish in the liquid at the bottom of the trap.

2.0 Methods of analysis

2.1 Methods for analysis of the active ingredients

Analytical methods for the analysis of the active ingredients in the technical products were not required.

2.2 Method for formulation analysis

The enforcement analytical methods to determine the active ingredients were waived since the proposed products are complex mixtures of food-based ingredients and synthetic attractant compounds.

2.3 Methods for residue analysis

No methods were required to quantify residues of putrescent whole egg solids, indole, sucrose, and trimethylamine because there are no proposed food uses.

2.4 Methods for identification of the microorganism

Methodologies for detection, isolation, and enumeration of the active ingredient, *S. cerevisiae* strain Y243, were not required, as Rescue Saccharomyces cerevisiae Technical is equivalent to a food grade edible ingredient that complies with Food Chemicals Codex (FCC) specifications and is extensively used in various baking dry mixes.

2.5 Methods for establishment of purity of seed stock

Methods for the establishment of the purity, viability, and genetic stability of *S. cerevisiae* strain Y243, were not required, as Rescue Saccharomyces cerevisiae Technical is equivalent to a food grade edible ingredient.

2.6 Methods to define the content of the microorganism in the manufactured material used for the production of formulated products

Methods to quantify *S. cerevisiae* strain Y243 in the technical grade active ingredient, Rescue Saccharomyces cerevisiae Technical, were not required, as the guarantees for the yeast component in the technical grade active ingredient and end-use products are expressed as percentage weights (w/w).

2.7 Methods to determine and quantify residues (viable or non-viable) of the active microorganism and relevant metabolites

Methods to enumerate *S. cerevisiae* strain Y243 and to distinguish this MPCA from other strains of *S. cerevisiae* were not required, as Rescue Saccharomyces cerevisiae Technical is equivalent to a food grade edible ingredient.

2.8 Methods for determination of relevant impurities in the manufactured material

Methods to establish the absence of human pathogens and below-threshold levels of contaminating microorganisms were not required, as Rescue Saccharomyces cerevisiae Technical is equivalent to a food grade edible ingredient.

2.9 Methods to determine storage stability, shelf-life of the microorganism

Storage stability data were provided for the end-use products. Results support a storage period of one year at ambient temperatures (20–40°C). A storage period of one year at 4–40°C can be supported for Rescue Saccharomyces cerevisiae Technical, as yeast is commonly stored at lower temperatures.

3.0 Impact on human and animal health

3.1 Toxicology summary

A detailed review of toxicology information was conducted in support of the technical grade active ingredients, Rescue Egg Technical, Big Bag Indole Technical, Rescue Sucrose Technical, Rescue Trimethylamine Technical, and Rescue Saccharomyces cerevisiae Technical, and the end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap. The data package for the technical grade active ingredients and end-use products is considered acceptable (Appendix I, Tables 1–3) to assess the toxic effects that may result from exposure to putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 for use in the associated end-use products.

The toxicological database for each of the technical grade active ingredients and end-use products is complete and consists of: information supporting a long history of safe food use (for sucrose and yeast); published PMRA proposed and final re-evaluation decision documents (for putrescent whole egg solids; PACR2004-02, RRD2005-07, and PRVD2022-11); publicly available information, published and submitted in vivo studies, published in vitro toxicological studies, and foreign reviews (for indole and trimethylamine). All the data combined forms a weight of evidence that is considered sufficient to characterize the toxicity of the active ingredients for use in the associated fly trap end-use products.

3.1.1 Putrescent whole egg solids

As per the Proposed Re-evaluation Decision PRVD2022-11, *Putrescent Whole Egg Solids and its Associated End-use Products*, putrescent whole egg solids are of low toxicity and the end-use product labels require a hazard warning of "POTENTIAL SENSITIZER" on the principal display panel.

The putrescent whole egg solids in the technical grade active ingredient, Rescue Egg Technical, were determined to be feed grade. The technical grade active ingredient product label requires "POTENTIAL SENSITIZER" and an egg allergen warning statement.

3.1.2 Indole

Indole is considered to be of moderate acute toxicity by the oral and dermal routes of exposure. It is considered to be irritating to the respiratory tract, corrosive to eyes, non-irritating to skin, and not a skin sensitizer.

In a 21-day oral (dietary) study in male rats, there were treatment-related decreases in body weight gain at all tested doses. At ≥ 250 mg/kg bw/day, there was a concurrent reduction in mean food intake. The lowest observed adverse effect level (LOAEL) was 125 mg/kg bw/day.

Indole is used extensively in perfumes, cosmetics, and in food as a flavourant, and naturally occurs in a wide range of foods. Furthermore, indole is a natural breakdown product of tryptophan (an essential amino acid) in the body, at levels comparable to those in the proposed fly traps. Indole is not expected to be a developmental toxicant at the levels present in the proposed end-use products.

Indole was not mutagenic in reverse gene mutation assays in bacteria and was negative in in vitro mammalian cell gene mutation assays.

3.1.3 Sucrose

Sucrose (sugar) has an extensive history of safe food use and is ubiquitous as a sweetening agent in the Western diet.

3.1.4 Trimethylamine

Trimethylamine is considered to be of high acute toxicity by the oral route of exposure and of low acute toxicity by the inhalation route of exposure. It is considered to be corrosive to eyes and skin. A dermal sensitization study was not required, due to the corrosivity of trimethylamine.

Trimethylamine is naturally present in seafood and is used as a food flavourant.

In a non-guideline 90-day oral (dietary) toxicity study in male rats, there were treatment-related decreases in body weight gain at the LOAEL of 150 mg/kg bw/day and above. At the highest dose tested, 310 mg/kg bw/day, there was a marked reduction in seminal vesicle size, weight and secretory material, and in the prostate there was increased incidence of tubular collapse and a decrease in secretory material. The no observed adverse effect level (NOAEL) was 79 mg/kg bw/day.

The European Chemicals Agency (ECHA) database contains a detailed summary of a combined repeated-dose reproductive developmental screening study, which fully complies with Organization for Economic Co-operation and Development Test Guideline 422 (OECD TG 422). In orally (gavage) dosed rats, the parental LOAEL for trimethylamine was 200 mg/kg bw/day based on mortalities, gastrointestinal lesions (ulcers, stomach inflammation), and decreased body weight gain and food consumption (males). The parental NOAEL was 40 mg/kg bw/day. The reproductive and developmental NOAEL was 200 mg/kg bw/day, the highest dose tested. There was no evidence of sensitivity of the young.

Trimethylamine was not mutagenic in reverse gene mutation assays in bacteria and was negative in in vitro mammalian cell gene mutation assays.

3.1.5 Saccharomyces cerevisiae strain Y243

Rescue Saccharomyces cerevisiae Technical (*S. cerevisiae* strain Y243) is equivalent to a food grade edible ingredient that complies with FCC specifications and is extensively used in various baking dry mixes. This food grade edible ingredient is considered to be of low toxicity by oral, inhalation, and dermal routes of exposure but it may cause irritation to the nose, throat, lungs, and skin. In the absence of a primary eye irritation study, all MPCAs are considered to be potential eye irritants. Furthermore, all microorganisms are recognized as being able to produce substances that can elicit positive hypersensitivity reactions in people upon repeated exposure. Consequently, this MPCA is considered to be a potential sensitizer.

3.1.6 Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap

An acute oral toxicity study was conducted with a bait formulation that contained the same five active ingredients proposed for registration. Except for the percentage of sucrose and yeast being less than or equal to the amount of active ingredient in the proposed end-use products, all other active ingredients were present in the test material at greater percentages. The test material was considered acceptable to determine the acute oral toxicology classification of the end-use products. Consequently, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are considered to be of low acute toxicity by the oral route of exposure. In the absence of end-use product-specific irritation data, the end-use products are considered to be corrosive to eyes and skin. They will be labelled as potential sensitizers due to the presence of putrescent whole egg solids and *S.* cerevisiae strain Y243.

3.2 Occupational, residential, and bystander exposure and risk assessment

3.2.1 Use description

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, Big Bag Fly Trap are proposed for use as domestic insecticides to attract and trap filth flies. A maximum of four traps are permitted on residential properties and can be rebaited or replaced up to six times per year. In areas of very high fly concentrations (for example, on farms, large outdoor livestock, and companion animal housing areas), a maximum of 120 traps per hectare are permitted and can be rebaited or replaced up to ten times per year.

Each trap consists of a water-soluble pouch, filled with 35 g or 70 g of dry fly attractant (bait) mixture inside a catching chamber consisting of a heavy duty disposable bag (Fly Trap and Big Bag Fly Trap) or a reusable bottle (Reusable Fly Trap, Fly Trap MAX, and POP! Fly Trap). Water is added up to a fill line and the traps are hung away from human activities, in areas of high fly traffic such as near garbage and compost piles. The water-soluble pouch dissolves over a period of 20 to 30 minutes, which initiates fermentation and putrefaction processes. Within two to five hours, the traps begin to release aromas of food and detritus that attract flies. The traps are designed such that flies can enter but cannot exit. Full disposable traps or the contents of reusable traps are emptied into the garbage. Traps are replaced when full, when the liquid contents dry out, or after 30 days. When full of flies, reusable traps are expected to contain very little or no liquid. After emptying, reusable traps require re-loading with a new refill bait pouch and water.

3.2.2 Occupational exposure and risk assessment

There is no potential for occupational exposure since Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are domestic class products.

3.2.3 Residential and bystander exposure and risk

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are proposed for domestic use only. When the traps are used according to label directions, exposure to residential users is characterized as short-term in duration. User exposure will occur primarily by the dermal route of exposure with limited potential for inhalation exposure. Given the very low exposure anticipated from the use of the end-use products, a qualitative exposure assessment was considered appropriate.

Due to the closed design of the disposable traps, Fly Trap and Big Bag Fly Trap, the residential user is never in direct contact with the bait ingredients.

The reusable traps, Reusable Fly Trap, Fly Trap MAX, and POP! Fly Trap, require emptying and re-loading with a new refill bait pouch. To protect residential users from exposure to reusable traps, users are required to wear waterproof gloves during handling (including loading and emptying).

Furthermore, standard label statements detailing the safe handling of water-soluble packages are required on products with water-soluble packaging to mitigate user exposure to the package contents. Precautionary statements on the end-use product labels aimed at mitigating exposure are adequate to protect individuals from risk due to user exposure. Overall, health risks to residential users are acceptable when the precautionary statements on the labels are followed.

Exposure to bystanders, individuals in residential areas, and companion animals will be mitigated by the inclusion of the precautionary label statements that traps are to be hung in well-ventilated areas and kept out of the reach of children and pets. Additionally, bystander exposure is expected to be low because there is no direct contact with the bait ingredients due to the closed design of the traps and, once attractant odours are released, the strong unpleasant odours are expected to act as a deterrent from being in close proximity to the traps. Consequently, the health risks to bystanders, individuals in residential areas, and companion animals from the use of Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are acceptable.

3.3 Dietary exposure and risk assessment

3.3.1 Food

Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are not proposed for food or feed use. Consequently, dietary exposure to putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 from the proposed use is not of concern and a dietary risk assessment was not required.

3.3.2 Drinking water

Based on the proposed use pattern (see Section 3.2.1), exposure from drinking water is not expected. The labels have the necessary mitigative measures to prevent contamination of drinking water from the proposed use of putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243. Consequently, health risks from residues of putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 in drinking water are acceptable.

3.3.3 Acute and chronic dietary risks for sensitive subpopulations

As noted above, when the end-use products are used as directed on the label, the health risk is acceptable for the general population, including infants and children.

3.4 Aggregate exposure and risk

Aggregate exposure is the total exposure to a single pesticide that may occur from food, drinking water, residential, and other non-occupational sources, and from all known or plausible exposure routes (oral, dermal, and inhalation).

In an aggregate risk assessment, the combined potential risk associated with food, drinking water, and various residential exposure pathways is assessed. A major consideration is the likelihood of co-occurrence of exposures. Additionally, only exposures from routes that share common toxicological endpoints can be aggregated.

The end-use products are limited to use as domestic class products, are not proposed for food use, and will not be applied near, or to, drinking water. Furthermore, non-occupational exposure will be low when Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap are used as directed on the label. When the end-use products are used as labelled, there is reasonable certainty that no harm will result from aggregate exposure of residues of putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243. This includes all anticipated dietary (food and drinking water) exposures and all other non-occupational (dermal and inhalation) exposures for which there is reliable information.

3.5 Cumulative assessment

The *Pest Control Products Act* requires that the PMRA consider the cumulative non-occupational exposure to pesticides with a common mechanism of toxicity, based on the likelihood that people may be exposed to more than one of these pesticides at the same time. Accordingly, assessments of potential common mechanisms of toxicity with other pesticides were undertaken for putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243.

Under the proposed conditions of use, there is no anticipated dietary exposure. Furthermore, non-occupational exposure will be low when the fly traps (Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap) are used as directed on the labels.

Pest control products containing putrescent whole egg solids were previously registered for use in Canada. Due to the design of the fly traps, the total exposure to putrescent whole egg solids is not likely to increase when the traps are used as intended. While constituents of putrescent whole egg solids may share structural similarities to components of other fatty acid-based active ingredients, the potential risks from cumulative exposure to putrescent whole egg solids and other fatty acid-based pest control products are acceptable given the inherent low toxicity profile of putrescent whole egg solids.

Sucrose and *S. cerevisiae* strain Y243 (baker's yeast) have an extensive history of safe food use. For the current evaluation, the PMRA did not identify information indicating that sucrose or *S. cerevisiae* strain Y243 share a common mechanism of toxicity with registered pest control products that are not sucrose- or yeast-based. Therefore a cumulative risk assessment was not required for sucrose or *S. cerevisiae* strain Y243.

Trimethylamine and indole are FCC-compliant active ingredients that have a non-toxic pesticidal mode of action as fly attractants. These substances are consumed as food flavourants, are naturally produced in the body, and are readily excreted. For the current evaluation, the PMRA did not identify information indicating that trimethylamine or indole share a common mechanism of toxicity with other registered pest control products. Therefore, a cumulative risk assessment was not required for trimethylamine or indole.

3.6 Maximum residue limits

The specification of maximum residue limits for putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 was not required for the proposed non-food use of the end-use products.

3.7 Health incident reports

As of 12 March 2025, two domestic animal incidents involving a U.S. product containing z-9-tricosene, indole, putrescent whole egg solids, and trimethylamine had been submitted to the PMRA. In both incidents, dogs were reported to have accidentally ingested a product or licked a site treated with a product containing z-9-tricosene, indole, putrescent whole egg solids, and trimethylamine. The more serious effects reported in one U.S. incident included rectal haemorrhage and death.

Overall, given the limited number of incidents involving the active ingredients putrescent whole egg solids, indole, sucrose trimethylamine, or yeast, no health concerns could be identified following this incident review.

4.0 Impact on the environment

4.1 Fate and behaviour in the environment

Putrescent whole egg solids, indole, sucrose, and trimethylamine are naturally derived or naturally occurring substances. In general, they are expected to dissipate rapidly in the environment, especially through biodegradation. Further detail on the expected behavior of each active ingredient in the environment is provided below.

For MPCAs such as *S. cerevisiae* strain Y243, environmental fate data (Tier II/III) are not normally required at Tier I and are only triggered if significant toxicological effects in non-target organisms are noted in Tier 1 testing.

4.1.1 Putrescent whole egg solids

The environmental fate of putrescent whole egg solids is described in PRVD2022-11, *Putrescent Whole Egg Solids and its Associated End-use Products*. In brief, putrescent whole egg solids are a biological substance with a non-toxic mode of action and are expected to biodegrade quickly in the environment.

4.1.2 Indole

Indole is an aromatic compound that occurs naturally in some plants and in coal tar. It has a fecal odour at high concentrations and is an odorous component of sewage and animal wastes. It has a floral odour at low concentrations and is thus used as a flavour and fragrance enhancer. As a result of this commercial use and its use as a chemical intermediate, it can also be released to the environment through industrial waste streams. When released to the air, indole will exist mainly in the vapour phase and is predicted to degrade rapidly via reaction with hydroxyl and nitrate

radicals and ozone. Indole is expected to be slightly volatile from moist soil or water surfaces and may volatilize from dry soil. Indole is very soluble in water and has moderate potential for mobility in soil. It is expected to biodegrade quickly in both soil and water. Indole has low potential for bioaccumulation in aquatic organisms. A list of physical-chemical properties for indole is in Appendix I, Table 4.

4.1.3 Sucrose

Sucrose occurs naturally in all foods that contain carbohydrates, such as fruits, vegetables, grains, and dairy. Sucrose is extremely soluble in water and is non-volatile**.** Sucrose is non-persistent in the environment as it is naturally digested by a wide variety of organisms, especially bacteria. In soil, uptake and digestion by bacteria dominate over other transport or transformation pathways such as sorption, plant uptake, and leaching. Sucrose has low potential for bioaccumulation in aquatic organisms. A list of physical-chemical properties for sucrose is in Appendix I, Table 5.

4.1.4 Trimethylamine

Trimethylamine is a gas that is widely distributed in the environment because of its formation from the decay of organic matter in vegetation, fish, sewage, and animal waste. In the air, it is expected to exist entirely as a gas and is predicted to quickly degrade by reaction with hydroxyl radicals. If released from soil, trimethylamine may volatilize from dry soil but not from wet soil since it will be present primarily as a cation (in other words, with a positive charge). The cation has potential for high mobility but also strong sorption to organic carbon and clay components in soil. Biotransformation results in rapid dissipation in soil and water. Trimethylamine has a low potential for bioaccumulation in aquatic organisms. A list of physical-chemical properties for trimethylamine is in Appendix I, Table 6.

4.1.5 Saccharomyces cerevisiae strain Y243

Saccharomyces cerevisiae is a species of single-celled fungal microorganisms that occurs worldwide. In nature, *S. cerevisiae* is most commonly found on ripened fruit. This species is often referred to baker's yeast or brewer's yeast due to its ability to quickly ferment various carbohydrates. The source of strain Y243 is food grade and it is marketed as baker's yeast.

4.2 Environmental risk characterization

Environmental exposure to putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243, as well as any of their transformation products, is expected to be minimal considering the structure and design of the end-use products, their localized use, and certain characteristics of the active ingredients. All of the end-use products are plastic traps that are intended for outdoor use at homes near areas where flies are a nuisance. In each trap, the active ingredients are in a water-soluble pouch that is enclosed in a plastic bottle or plastic bag. Water is added to the trap before it is hung outdoors. Flies are attracted to the trap by the volatile release of certain active ingredients from the solution inside the containers. The active ingredients are all non-persistent naturally occurring compounds and have a non-toxic mode of action when used at a low concentration as attractants. Given the limited potential for

environmental exposure, risks to non-target organisms are expected to be minimal. The risks associated with the end-use products are acceptable when the products are used according to label directions.

4.2.1 Incident reports

As of 12 March 2025, no environmental incident reports involving putrescent egg solids, indole, sucrose, trimethylamine, or *S. cerevisiae* had been submitted to the PMRA.

5.0 Value

The applicant claimed that the traps with the attractant catch filth fly species. Two published scientific articles were submitted to support the efficacy of the attractant ingredients individually and in combination in the field. Three field trials were conducted to provide support for the product claims: two trials tested the Big Bag Fly Trap with the attractant as intended and the third field trial testing the efficacy of the bottle-style and bag-style trap designs using the attractant as intended. Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap provide a non-conventional method of reducing filth flies in urban and rural residential and recreational areas with reduced reliance on conventional alternatives, no opportunity for insecticide resistance to develop, and minimal to no handling of the active ingredients by end users. The reviewed value information provided by the applicant, including the published literature and field study evaluations on the attractant efficacy and trap design, support the claim of attracting and capturing flies in residential areas, with a re-application interval of when the trap contents dry out, when the trap is full, or after 30 days.

6.0 Pest control product policy considerations

6.1 Toxic Substances Management Policy considerations

The Toxic Substances Management Policy (TSMP) is a federal government policy developed to provide direction on the management of substances of concern that are released into the environment. The TSMP calls for the virtual elimination of Track 1 substances, in other words, those that meet all four criteria outlined in the policy: persistent (in air, soil, water and/or sediment), bio-accumulative, primarily a result of human activity and toxic as defined by the *Canadian Environmental Protection Act*. The *Pest Control Products Act* requires that the TSMP be given effect in evaluating the risks of a product.

During the review process, putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243 were assessed in accordance with the PMRA Regulatory Directive DIR99-03[5] and evaluated against the Track 1 criteria. Health Canada has reached the conclusion that putrescent whole egg solids, indole, sucrose, and trimethylamine do not meet all of the TSMP Track 1 criteria, and they are not expected to form any transformation products that meet all of the TSMP Track 1 criteria. *Saccharomyces cerevisiae* strain Y243 does not meet the TSMP

[5] DIR99-03, *The Pest Management Regulatory Agency's Strategy for Implementing the Toxic Substances Management Policy*

Track 1 criteria because the active ingredient is a biological organism and hence is not subject to the criteria used to define persistence, bioaccumulation, and toxicity properties of chemical control products.

6.2 Formulants and contaminants of health or environmental concern

During the review process, contaminants in the active ingredients as well as formulants and contaminants in the end-use products are compared against Parts 1 and 3 of the *List of Pest Control Product Formulants and Contaminants of Health or Environmental Concern*.[6] The list is used as described in the PMRA Science Policy Note SPN2020-01[7] and is based on existing policies and regulations, including the *Toxic Substance Management Policy* and *Formulants Policy*,[8] and taking into consideration the *Ozone-depleting Substances and Halocarbon Alternatives Regulations* under the *Canadian Environmental Protection Act, 1999*, *(*substances designated under the *Montreal Protocol).*

The PMRA has reached the conclusion that the technical grade active ingredients, Rescue Sucrose Technical, Rescue Trimethylamine Technical, Big Bag Indole Technical, and Rescue Saccharomyces cerevisiae Technical, do not contain any formulants or contaminants identified in the *List of Pest Control Product Formulants and Contaminants of Health or Environmental Concern*. The technical grade active ingredient, Rescue Egg Technical, and the end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, contain the allergen, egg, which is on the *List of Pest Control Product Formulants of Health or Environmental Concern that are Allergens Known to Cause Anaphylactic-type Reactions.*

The use of formulants in registered pest control products is assessed on an ongoing basis through the PMRA formulant initiatives and Regulatory Directive DIR2006-02.

7.0 Proposed regulatory decision

Health Canada's PMRA, pursuant to subsection 28(1) of the *Pest Control Products Act*, is proposing registration for the sale and use of Rescue Egg Technical, Big Bag Indole Technical, Rescue Sucrose Technical, Rescue Trimethylamine Technical, Rescue Saccharomyces cerevisiae Technical, and related end-use products, Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap, containing the active ingredients putrescent whole egg solids, indole, sucrose, trimethylamine, and *S. cerevisiae* strain Y243, to attract and trap flies.

An evaluation of available scientific information found that, under the approved conditions of use, the health and environmental risks and the value of the pest control products are acceptable.

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6 SI/2005-114, last amended on June 24, 2020. See Justice Laws website, Consolidated Regulations, *List of Pest Control Product Formulants and Contaminants of Health or Environmental Concern.*

7 PMRA's Science Policy Note SPN2020-01, *Policy on the List of Pest Control Product Formulants and Contaminants of Health or Environmental Concern* under paragraph 43(5)(b) of the Pest Control Products Act

8 DIR2006-02*, Formulants Policy and Implementation Guidance Document*

List of abbreviations

♂	male
λ	wavelength of absorption
λ_{max}	wavelength of maximum absorption
±	plus-or-minus
↑	increased
↓	decreased
=	equal to
>	greater than
<	lesser than
≥	greater than, or equal to
≤	lesser than, or equal to
%	percent
#	number
°C	degree Celsius
°F	degree Fahrenheit
atm	atmosphere
bw	body weight
CAS	Chemical Abstracts Service
cm^3	cubic centimetre
DIR	Regulatory Directive
FCC	Food Chemicals Codex
g	gram
ha	hectare
Hg	mercury
hPa	hectopascal
IRAC	Insecticide Resistance Action Committee
IUPAC	International Union of Pure and Applied Chemistry
kg	kilogram
K_{oc}	organic carbon normalized adsorption coefficient
K_{ow}	*n*–octanol-water partition coefficient
L	litre
LC_{50}	lethal concentration 50%
LD_{50}	lethal dose 50%
LOAEL	lowest observed adverse effect level
m^3	cubic metre
mg	milligram
mm	millimetre
MPCA	microbial pest control agent
nm	nanometre
NOAEL	no observed adverse effect level
OECD	Organisation for Economic Co-operation and Development
OECD TG	OECD Test Guideline
Pa	pascal
PACR	Proposed Acceptability for Continuing Registration
pK_a	dissociation constant

PMRA	Pest Management Regulatory Agency
PRVD	Proposed Re-evaluation Decision Document
RVD	Re-evaluation Decision Document
SI	Statutory Instrument
SPN	Science Policy Note
TSMP	Toxic Substances Management Policy
U.S.	United States
UV	ultraviolet
w/w	weight for weight

Appendix I Tables and figures

Table 1 Toxicity profile of indole

Effects are known or assumed to occur in both sexes unless otherwise noted.

Study type/Animal/PMRA No.	Study results
Short-term toxicity studies	
21-Day Oral Toxicity (diet) Holtzman rats (♂) PMRA No. 3688173	NOAEL < 125 mg/kg bw/day ≥ 125 mg/kg bw/day: ↓ body weight gain ≥ 250 mg/kg bw /day: ↓ food consumption
Genotoxicity studies	
Bacterial Reverse Mutation Assay *Salmonella* Typhimurium (TA100) PMRA No. 3454724	Negative (-) metabolic activation
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98, TA100, TA1535, TA1538) PMRA No. 3647765	Negative (±) metabolic activation
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98, TA100) PMRA No. 3454719	Negative (-) metabolic activation
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98, TA100, TA1535, TA1537) PMRA No. 3647766	Negative (±) metabolic activation Tested up to a limit concentration
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98, TA100), *Escherichia coli* WP2 uvrA/pKM101 PMRA No. 3647769	Negative (±) metabolic activation
Forward Mutation Assay *S.* Typhimurium (TM677) PMRA No. 3454723	Negative (+) metabolic activation
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98) PMRA No. 3647770	Negative (±) metabolic activation Tested up to a limit concentration

Table 2 Toxicity profile of trimethylamine

Effects are known or assumed to occur in both sexes unless otherwise noted.

Study type/Animal/PMRA No.	Study results
Acute toxicity studies	
Acute Inhalation Toxicity (nose-only) Sprague-Dawley rats (♂) PMRA No. 3422544	LC_{50} = 8.6 mg/L Low acute toxicity
Short-term toxicity studies	
90-Day Oral Toxicity (diet) Sprague-Dawley rats (♂) PMRA No. 3646261	NOAEL = 79 mg/kg bw/day ≥ 150 mg/kg bw/day: ↓ body weight gain 310 mg/kg bw/day: ↓ seminal vesicle size, weight, secretory material, ↑ prostate tubular collapse, ↓ prostate secretory material
Genotoxicity studies	
Bacterial Reverse Mutation Assay *S.* Typhimurium (TA98, TA100, TA1535, TA1537) PMRA No. 3422547 and 3656068	Negative (±) metabolic activation

Table 3 Toxicity profile of Reusable Fly Trap, Fly Trap, Fly Trap MAX, POP! Fly Trap, and Big Bag Fly Trap

Effects are known or assumed to occur in both sexes unless otherwise noted.

Study type/Animal/PMRA No.	Study results
Acute toxicity studies	
Acute Oral Toxicity Sprague-Dawley Rat PMRA No. 3266120	LD_{50} > 5000 mg/kg bw Low toxicity

Table 4 Indole: Physical and chemical properties relevant to the environment

Property	Value	Comments	PMRA No.
Vapour pressure at 25°C	0.03 mm Hg 0.0122 mm Hg	Intermediately volatile from dry soil. Atmospheric fraction exists mainly in the vapour phase.	3295534 3295536
Gas-phase half-life in air	< 1 minute–6 hours	For reaction with hydroxyl radicals, nitrate radicals, and ozone	3597648
Water solubility at 25°C	3.56 g/L	Very soluble in water.	3295536
Henry's Law Constant at 25°C	5.3×10^{-7} atm·m^3/mole	Slightly volatile from moist soil and water surfaces.	3597648
Dissociation constant in water (pK_a)	16.2	Unionized at typical environmental pH of 5 to 9.	3295536
UV/visible absorption (λ_{max})	-	No absorption expected at $\lambda > 300$ nm. Low potential for direct photolysis.	3295537
log K_{ow}	2.14	Based on K_{ow}, predicted bioconcentration factor = 25. Low potential for bioaccumulation in aquatic organisms.	3295536 3597648
Adsorption coefficient (K_{oc})	187, 350	Moderate mobility in soil.	3597648

Table 5 Sucrose: Physical and chemical properties relevant to the environment

Property	Value	Comments	PMRA No.
Vapour pressure at 25°C	3.53×10^{-16} mm Hg	Non-volatile from dry soil.	3612989
Gas-phase half-life in air	-	Not relevant: unlikely to be found in air.	-
Water solubility at 20°C	2000 g/L	Very soluble in water.	3612989
Henry's Law Constant at 25°C	4.47×10^{-22} atm·m^3/mole	Non-volatile from moist soil and water surfaces.	3421267
Dissociation constant in water (pK_a)	12.62	Unionized at typical environmental pH of 5 to 9.	3722231

Property	Value	Comments	PMRA No.
UV/visible absorption (λ_{max})	-	No absorption expected at $\lambda > 300$ nm. Low potential for direct photolysis.	3421269
log K_{ow}	-3.70	Low potential for bioaccumulation in aquatic organisms.	3612989
Adsorption coefficient (K_{oc})	-	Likely highly mobile in soil.	-

Table 6 Trimethylamine: Physical and chemical properties relevant to the environment

Property	Value	Comments	PMRA No.
Vapour pressure at 20°C	1430 mm Hg	Volatile from dry soil. Atmospheric fraction exists solely in the vapour phase.	3422543
Gas-phase half-life in air	6 hours–76 days	For reaction with hydroxyl and nitrate radicals, respectively.	3597652
Water solubility	-	Completely soluble in water.	3422543
Henry's law constant	-	Not relevant: minimal volatilization from moist soil and water surfaces is expected since the chemical will be present mostly in cationic form (as per pK_a, below).	3597652
Dissociation constant in water (pK_a)	9.81	Mostly in cationic form at typical environmental pH of 5 to 9.	3422543
UV/visible absorption (λ_{max})	-	No absorption expected at l > 300 nm. Low potential for direct photolysis.	3422542
log K_{ow}	0.245	For neutral species; likely lower for cation prevalent at pH 5 to 9. Low potential for bioaccumulation in aquatic organisms.	3422543
Adsorption coefficient (K_{oc})	7	Estimate for neutral form that implies very high mobility in soil. However, chemical is present mostly in cationic form at environmentally relevant pH. The cation may sorb more strongly to organic carbon and clay in soil.	3597652

References

A. List of studies/Information submitted by registrant

1.0 Chemistry

PMRA Document Number	Reference
3266074	2021, Part 2 Chemistry-Big Bag Dried Egg Technical-27august2021, DACO: 2.1,2.11,2.11.1,2.11.2,2.11.4,2.12.1,2.13.1,2.13.2,2.13.3,2.13.4, 2.14.1,2.14.10,2.14.11,2.14.12,2.14.13,2.14.14,2.14.15,2.14.2,2.14.3, 2.14.4,2.14.5,2.14.6,2.14.7,2.14.8,2.14.9,830.7000 CBI
3266075	2019, Egg-0108 IsoNova Spray-Dried Granulated Inedible Egg Product, DACO: 2.11.1 CBI
3266076	2021, Egg-Flow Chart IsoNova Verona 0108-10 August 2021, DACO: 2.11.3 CBI
3266078	2008, Dried Whole Egg Solids: Microbiological Analysis, DACO: 2.13.4 CBI
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2.0 Human and animal health

PMRA Document Number	Reference

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3.0 Environment

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4.0 Value

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B. Additional information considered

i) Published information

1.0 Chemistry

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3.0 Environment

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