

1

Evaluation Report for Category B, Subcategory B.1.2 Application

Application Number: 2014-2526
Application: New Source of Technical Grade Active Ingredient by a New Registrant
Product: Sharda Lambda-Cyhalothrin Technical Insecticide
Registration Number: 31859
Active ingredients (a.i.): lambda-cyhalothrin
PMRA Document Number : 2530045

Background

The source of lambda-cyhalothrin used to determine chemical equivalence was Registration Number 24567.

Purpose of Application

The purpose of this application was to register a new source of the active ingredient, lambda-cyhalothrin, by a different Registrant.

Chemistry Assessment

Common Name: Lambda-Cyhalothrin
IUPAC* Chemical Name: *rac-(R)*-cyano(3-phenoxyphenyl)methyl (1*S*,3*S*)-3-[(1*Z*)-2-chloro-3,3,3-trifluoroprop-1-en-1-yl]-2,2-dimethylcyclopropane-1-carboxylate
OR
(R)- α -cyano-3-phenoxybenzyl (1*S*)-*cis*-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate
and
(S)- α -cyano-3-phenoxybenzyl (1*R*)-*cis*-3-[(*Z*)-2-chloro-3,3,3-trifluoropropenyl]-2,2-dimethylcyclopropanecarboxylate
CAS† Chemical Name: (*R*)-cyano(3-phenoxyphenyl)methyl (1*S*,3*S*)-*rel*-3-[(1*Z*)-2-chloro-3,3,3-trifluoro-1-propen-1-yl]-2,2-dimethylcyclopropanecarboxylate

* International Union of Pure and Applied Chemistry

† Chemical Abstracts Service

Sharda Lambda-Cyhalothrin Technical Insecticide has the following

properties:

Property	Result
Colour and physical state	Signal white solid
Nominal concentration	95.27%
Odour	Odourless
Density	1.284-1.304 g/mL
Vapour pressure	4.61 x 10 ⁻³ Pa at 50°C 2.12 x 10 ⁻³ Pa at 40°C 4.38 x 10 ⁻⁴ Pa at 20°C
Solubility in water at 25°C	3.87 x 10 ⁻⁴ mg/L in deionized water
n-Octanol/water partition coefficient at 20°C	Isomer I : Kow = 9.45E+05 and Log Kow = 5.98 Isomer II : Kow = 1.23E+06 and Log Kow = 6.09

Health and Environmental Assessments

As the new source of lambda-cyhalothrin is chemically equivalent to the registered source, the health and environmental risk profiles are expected to be similar to that of the product used to determine chemical equivalence. No additional assessments were required.

Value Assessment

A value assessment is not required for technical grade active ingredient products.

Conclusion

The PMRA has completed an evaluation of the subject application and has determined that it can support the registration of Sharda Lambda-Cyhalothrin Technical Insecticide.

References

- 2440792 2010, Analytical method validation for the active ingredient lambda-cyhalothrin in both technical and formulated products, DACO: 2.13.1
- 2440794 2009, Dissociation Constant Letter, DACO: 2.14.10
- 2440795 2008, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Active Ingredient Content, DACO: 2.12.1 CBI
- 2440796 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Melting Point, DACO: 2.14.4
- 2440797 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Density, DACO: 2.14.6

- 2440798 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Vapour Pressure, DACO: 2.14.9
- 2440799 2008, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Appearance, DACO: 2.14.1,2.14.2,2.14.3
- 2440800 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Solubility in Water, DACO: 2.14.7
- 2440801 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Solubility in 6 organic solvents, DACO: 2.14.8
- 2440802 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Partition Coefficient, DACO: 2.14.11
- 2440803 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Hydrolysis Rate, DACO: 2.16
- 2440804 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - pH of a Dilution, DACO: 2.14.15,830.7000
- 2440805 2008, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Auto-flammability of solids, DACO: 2.16
- 2440806 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Direct Phototransformation, DACO: 2.16
- 2440807 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Stability in Air, DACO: 2.16
- 2440808 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Oxidising Properties, DACO: 2.16
- 2440809 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Explosive Properties, DACO: 2.16
- 2440810 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Surface Tension, DACO: 2.16
- 2440811 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Accelerated Storage Stability, DACO: 2.14.14,2.16
- 2440812 2009, Determination of Physical and Chemical Properties of LAMBDA-CYHALOTHRIN Technical - Flammability of Solids, DACO: 2.16,2.4,2.5,2.6,2.7,2.8,2.9
- 2440813 2008, Purity Profile for 5 Batches of Lambda Cyhalothrin Technical, DACO: 2.13.1,2.13.2, 2.13.3,2.13.4 CBI
- 2440814 2009, Purity Profile for 5 Batches of Lambda Cyhalothrin Technical - Determination of the [CBI Removed] content, DACO: 2.13.2,2.13.3,2.13.4 CBI
- 2440825 2014, Manufacturing Method for Lambda Cyhalothrin Technical, DACO: 2.11.1,2.11.2, 2.11.3,2.11.4 CBI
- 2440826 2014, Applicant's Name and Office Address, Formulating Plant and address, Trade Name, UV/Visible Absorption Spectra and Stability (Temperature, Metals) for Sharda Lambda-Cyhalothrin Technical Insecticide, DACO: 2.1,2.14.12,2.14.13,2.2,2.3
- 2440827 2014, Applicant's Name and Office Address, Formulating Plant and address, Trade Name, UV/Visible Absorption Spectra and Stability (Temperature, Metals) for Sharda Lambda-Cyhalothrin Technical Insecticide, DACO: 2.1,2.14.12,2.14.13,2.2,2.3 CBI
- 2492542 2015, Enlarged and identified peaks in Chromatograms for "Purity Profile for 5 Batches of Lambda Cyhalothrin technical", DACO: 2.13.3,2.13.4 CBI
- 2492543 2014, LAMBDA-CYHALOTHRYN MANUFACTURE PROCESS DESCRIPTION, DACO: 2.11.1,2.11.2,2.11.3,2.11.4 CBI
- 2492544 2014, Certificate of Analysis for [CBI Removed], DACO: 2.11.2 CBI

- 2492545 2015, Clarification Response for Sharda Lambda Cyhalothrin Technical, Submission 2014-2526, DACO: 2.11.1,2.11.2,2.11.3,2.11.4
- 2502968 2015, Dates of Manufacture of Sharda Lambda Cyhalothrin Technical Insecticide, DACO: 2.13.3 CBI
- 2502970 2015, Manufacturing Process for Sharda Lambda-Cyhalothrin Technical Insecticide, DACO: 2.11.1,2.11.2,2.11.3,2.11.4 CBI
- 2502971 2015, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502972 2015, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502973 2008, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502974 2011, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502975 1993, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502976 2015, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502977 1986, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502978 2015, MSDS [CBI Removed], DACO: 2.11.2 CBI
- 2502979 1996, MSDS [CBI Removed],, DACO: 2.11.2 CBI
- 2505864 2015, Revised LAMBDA-CYHALOTHRYN MANUFACTURE PROCESS DESCRIPTION, DACO: 2.11.1,2.11.2,2.11.3,2.11.4 CBI
- 2505865 2015, Clarification Response for Sharda Lambda Cyhalothrin Technical Submission # 2014-2526, DACO: 2.11.2,2.11.3 CBI
- 2505866 2013, MSDS [CBI Removed], DACO: 2.11.2 CBI

ISSN: 1911-8082

**8 Her Majesty the Queen in Right of Canada, represented by the Minister of Public Works and Government Services
Canada 2016**

All rights reserved. No part of this information (publication or product) may be reproduced or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise, or stored in a retrieval system, without prior written permission of the Minister of Public Works and Government Services Canada, Ottawa, Ontario K1A 0S5.