

Evaluation Report for Category B, Subcategory 2.1, 2.3, 2.4, 3.1 Application

Application Number: 2009-4950
Application: B.2.1 (Product Chemistry-Guarantee)
B.2.3 (Product Chemistry-Identity of Formulants)
B.2.4 (Product Chemistry-Proportion of Formulants)
B.3.1 (Product Labels-Application Rate Increase)
Product: Beetle Block-MCH
Registration Number: 29910
Active ingredients (a.i.): 3-methylcyclohex-2-en-1-one (CYE)
PMRA Document Number : 1966290

Purpose of Application

ChemTica Internacional has submitted an application to register a new commercial class end-use product, BeetleBlock-MCH (97.5% 3-methylcyclohex-2-en-1-one), a slow-release device containing the registered active ingredient MCH Technical (Registration number 28638, 98% 3-methyl-2-cyclohexen-1-one), for control of Douglas-fir beetle and spruce beetle.

Chemistry Assessment

Beetle Block-MCH is guaranteed to contain the active ingredient 3-Methylcyclohex-2-en-1-one at a nominal concentration of 97.5% and has a density of 0.962 g/cm³. The chemistry requirements for Beetle Block-MCH have been completed.

Health Assessments

Beetle Block-MCH, a MCH-containing anti-aggregation semiochemical, is similar to MCH Bubble Cap (Registration number 28637). The same use pattern is proposed for Beetle Block-MCH as that for MCH Bubble Cap except for differences in the rate and pattern of applications. Both products contain 400 mg of MCH per 2.2g dispenser. Accordingly, the most current toxicological review conducted for MCH Technical (PRD 2010-17, *3-Methyl-2-Cyclohexen-1-One (MCH Technical)*) and MCH Bubble Cap will remain applicable for Beetle Block-MCH.

MCH Technical is of slight acute toxicity by the oral route (LD₅₀ of 1000 to 2000 mg/kg bw in rats) and is of low acute toxicity by the inhalation route (LC₅₀ of 19.7 mg/L air in rats). It is also anticipated to be mildly irritating to the eyes. In addition, no endpoints of toxicological concern were identified with the formulants used in Beetle Block-MCH.

The precautionary labelling statements for Beetle Block-MCH are considered adequate as mitigation measures for addressing any human health risks resulting from potential occupational or bystander exposures to the product. In order to further minimize potential risks resulting from incidental exposure to children and companion animals (pets), the inclusion of a precautionary label is required for each dispenser.

Beetle Block-MCH is not intended for use on food crops or on plants intended for human consumption. In turn, no maximum residue limits (MRL) are necessary for the technical grade active ingredient, MCH.

Environmental Assessment

MCH (Registration number 28638) is an anti-aggregation pheromone for the Douglas-fir beetle (*Dendroctonus pseudotsugae*) and the spruce beetle (*Dendroctonus rufipennis*). Beetle Block-MCH capsules are attached to standing and fallen Douglas-fir and spruce trees and stumps, and stands containing Douglas-fir or spruce trees. MCH Technical is highly volatile and insoluble in water therefore, Henry's law constant cannot be calculated. The log K_{ow} indicates the MCH is unlikely to bioaccumulate under neutral conditions. MCH has no dissociable moieties.

Although MCH was considered toxic to birds, it is unlikely that the capsules will be tampered with by birds or other non-target organisms. The use of Beetle Block-MCH capsules is not expected to pose a risk to non-target organisms since it is naturally present as a pheromone at levels higher than the proposed release rate under operational conditions.

Value Assessment

Except for differences in the rate and pattern of application, the use pattern of Beetle Block-MCH is the same as the use pattern for MCH Bubble Cap (Registration number 28637), which was fully supported by the results of efficacy trials published in scientific journals. One additional efficacy trial, also published in a scientific journal, was submitted to confirm that the differences in the rate and pattern of application of Beetle Block-MCH do not adversely affect efficacy.

Conclusion

The PMRA has completed an assessment of all available information and is able to support the registration of BeetleBlock-MCH (97.5% 3-methylcyclohex-2-en-1-one).

References

A. Information submitted by the applicant:

PMRA Number	Reference
1831424	2004, Application to Register CTI-2003, DACO: 3.2.1,3.2.2,3.2.3,3.3.1 CBI
1831425	2009, 3.5.6 - 3.5.15 Chemistry - Storage Stability Data, DACO: 3.5.10,3.5.11,3.5.12,3.5.13,3.5.14,3.5.15,3.5.6,3.5.7,3.5.8,3.5.9 CBI

- 1831426 2009, 3-Methylcyclohex-2-en-1-one Dispenser Storage Stability and Corrosion Study, DACO: 3.4.1,3.5.10,3.5.14
- 1831421 Letter of confirmation of source of supply, DACO 0.8
- 1831427 Use description, DACO 5.2
- 1916651 Response to clarification e-mail of June 10, 2010, DACO 5.2, 1.1.1 – additional literature references were included
- 1937258 2010, Letter of Authorization, DACO 0.8.6
- 1946443 HPV chemical report, DACO 4.8
- 1946437 Copy of individual dispenser label, DACO 5.2
- 1831429 Ross, D.W., and K.F. Wallin. 2008. High release rate 3-methylcyclohex-2-en-1-one dispensers prevent Douglas-fir beetle (Coleoptera: Curculionidae) infestation of live Douglas-fir. Journal of Economic Entomology 101: 1826-1830. DACO: 10.2.3.4(D)

B. Additional Information Considered

PMRA Number	Reference
1946444	EPA Fact Sheet on MCH
1946445	JECFA review of MCH as a flavour agent

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