

Evaluation Report for Category B, Subcategory 2.1, 2.3, 2.4, 3.1, 3.11, 3.12, 3.4 Application

Application Number: 2008-3898
Application: New product chemistry: guarantee, identity of formulants, proportion of formulants
New product label: new pests, new site or host, application method
Product: Bora-Care Termiticide and Insecticide Concentrate
Registration Number: 30157
Active ingredient (a.i.): Boron, present as disodium octaborate tetrahydrate
PMRA Document Number: 2180009

Purpose of Application

The purpose of this application was to register a new end-use product for use as a remedial wood preservative in and around residential, commercial, and agricultural buildings for prevention and control of subterranean termites, Formosan termites, drywood termites, carpenter ants and listed wood destroying beetles.

Chemistry Assessment

Bora-Care Termiticide and Insecticide Concentrate is formulated as a solution containing boron, present as disodium octaborate tetrahydrate at a nominal concentration of 8.4%. This end-use product has a density of 1.31 g/mL and a pH of 5.37. The chemistry requirements for Bora-Care Termiticide and Insecticide Concentrate are complete.

Health Assessment

Bora-Care Termiticide and Insecticide Concentrate was found to be of low acute toxicity by the oral route in rats ($LD_{50} > 5000$ mg/kg bw), by the dermal route in rabbits ($LD_{50} > 2000$ mg/kg bw), and by the inhalation route in rats ($LC_{50} > 5.06$ mg/L). Bora-Care Termiticide and Insecticide Concentrate was found to be minimally irritating to the eye and non-irritating to the skin of rabbits, and was not a dermal sensitizer in guinea pigs.

A risk assessment for commercial workers applying Bora-Care Termiticide and Insecticide Concentrate was conducted. Risks for workers using a low-pressure handwand, foam or mister application are not expected to be of concern when the label statements are followed. Risks for workers using a paintbrush or roller were found to be similar to existing uses of other remedial wood preservatives containing boron. Post-application exposure is not of concern.

Environmental Assessment

Boron present as disodium octaborate tetrahydrate is considered to be toxic to aquatic organisms, birds, small wild mammals and certain beneficial insects. Precautionary measures, as specified on the label, are required to minimize exposure of non-target aquatic and terrestrial organisms.

Value Assessment

In support of this application, a total of 20 field and laboratory efficacy trials were reviewed.

Based on these studies, control of subterranean termites application rates of 2:1 and 5:1 water:Bora-Care solution (2.8% and 1.4% boron) is supported. The data demonstrated that application rates between 2:1 and 5:1 water:Bora-Care can be effective both at controlling active termite infestations and as a preventative treatment. Studies demonstrated that applications of Bora-Care Termiticide and Insecticide Concentrate will prevent tubing construction, and will cause mortality of termites that feed on Bora-Care Termiticide and Insecticide Concentrate treated wood. A 10-year efficacy study on preventative treatments using Bora-Care Termiticide and Insecticide Concentrate demonstrated long-term protection for termite attack with Bora-Care Termiticide and Insecticide Concentrate when it was applied according to application directions.

Termites listed on the Bora-Care Termiticide and Insecticide Concentrate label include: Subterranean Termites (*Reticulitermes*, *Heterotermes*); Formosan termites (*Copotermes*); Drywood Termites (*Kaloterms*, *Incisitermes*); and Dampwood Termites (*Zootermopsis*, *Neotermes*) While Formosan termites and drywood termites are not established in Canada, there is a strong possibility of these pests being introduced (e.g., via shipments of building materials) and requiring remedial treatment. Data on these pests demonstrated that Bora-Care Termiticide and Insecticide Concentrate is efficacious against these species of termites. While *Heterotermes*, the Australian subterranean termite, is not present in Canada, control of this pest could be extrapolated from data on *Reticulatermes*. Extrapolation for the control claim of dampwood termites based on the reviewed data was acceptable. Given the destructive nature of termites, and especially Formosan termites, it is prudent to allow the addition of termite pests not present in Canada on remedial termite product labels so that if these pests are introduced they may be controlled before they become established.

A variety of different application rates (2:1, 3:1, and 5:1 water:Bora-Care) and application methods (spray, injection, brush, roller, foam, and misting) are on the Bora-Care Termiticide and Insecticide Concentrate label. Generally, higher application rates (2:1) are for larger dimension lumber and logs or remedial treatment (given the larger cross-section of wood into which the disodium octaborate tetrahydrate must diffuse). For subterranean and Formosan termites, the rate of 2:1 is for remedial and preventative treatments and for foaming and misting applications (for wall voids). For drywood termites, the application rate for remedial treatment is the same, with a 5:1 for remedial treatments. The rates for subterranean and Formosan termites are supported by the data. The remedial treatment rates for drywood termites are supported by the data, and the preventative application rate is also supported.

While data were not submitted for powderpost beetles, old house borers, longhorn beetles, and carpenter ants, and ambrosia beetles, boron (present as disodium octaborate tetrahydrate) (~~DOT~~) is expected to provide acceptable control of these pests at the rates on the Bora-Care Termiticide and Insecticide Concentrate label. For the non-termite minor pests, remedial application rates are 2:1, and the proposed preventative application rate is 5:1.

The supported application rates and control claims for Bora-Care Termiticide and Insecticide Concentrate are subterranean termites, Formosan termites, drywood termites, powderpost beetles, old house borers, longhorn beetles, ambrosia beetles, and carpenter ants, with application rates of 2:1, 3:1, and 5:1 water:Bora-Care, applied by brushing, rolling, injection, foaming, and misting.

Conclusion

The PMRA conducted an evaluation of the subject application and determined that the use of the product in accordance with the label has value and will not pose unacceptable health or environmental risk.

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