



Evaluation Report for Category B, Subcategory B.2.1, B.2.3, B.2.4, B.2.5, B.3.4, B.3.12 Application

Application Number: 2015-0751
Application: New/Changes End-use Product - Product Chemistry: Guarantee, Identity and Proportion of Formulants, Formulation Type; New/Changes to Product Labels - Application Method, New Site or Host
Product: Genics CuB
Registration Number: #####
Active ingredients (a.i.): Boric acid, Disodium octaborate tetrahydrate, and Copper (present as copper hydroxide)
PMRA Document Number: 3496455

Purpose of Application

The purpose of this application was to register Genics CuB, a new wood preservative product. Genics CuB was proposed for use on all cellulosic materials including wood, plywood, particle board, paper, oriented strand board, wood composite and foam materials, by brush, roller, spray, injection or dip applications.

Chemistry Assessment

Genics CuB is formulated as a solution containing copper at 0.99% present as copper hydroxide, disodium octaborate tetrahydrate at 9.1%, and boric acid at 0.89%. This end-use product has a density of 1.236 g/mL and pH of 7.0. The required chemistry data for Genics CuB have been provided, reviewed and found to be acceptable.

Health Assessments

Acute hazard assessment of the end-use product

The proposed product is expected to be moderately acutely toxic via the oral route to humans based on historical records of fatalities in humans showing increased sensitivity to boron compounds when compared to rodents. The proposed product is expected to be of low toxicity via the dermal and inhalation routes. It is expected to be minimally irritating to the eyes and skin; and it is not expected to be a potential dermal sensitizer.

Occupational/residential exposure and risk assessment

Genics CuB, for the proposed use on all cellulosic material (including wood, plywood, particle board, paper, oriented strand board, cardboard, wood composite and foam materials) as a ready-to-use material preservative, represents an expansion of the use pattern for

disodium octaborate tetrahydrate, boric acid and copper, present as copper hydroxide. With the data provided by the applicant, occupational and residential exposure could only be assessed for the following uses: treatment using handheld equipment (brush, roller and spray), spray-box treatment and dip tank treatment of dimensional lumber.

For boric acid and disodium octaborate tetrahydrate, a benchmark dose level of 2.90 mg elemental boron/kg bw/day, based on the results of two 90-day dog studies, was deemed appropriate. This point of departure was also deemed appropriate for assessing risks from short-term exposure via all routes, as well as long-term exposure via the dermal and inhalation routes. A target margin of exposure of 300 was selected, which included a 3-fold database uncertainty factor to account for the fact that histological changes in testes are likely to occur at a dose below those at which changes in testicular weight are noted (PRVD2012-03 and RVD2016-01, *Boric Acid and its Salts (Boron)*).

A quantitative chemical handler risk assessment for elemental boron was conducted for workers using handheld equipment (using unit exposure values from the Pesticide Handlers Exposure Database) and for workers involved in spray-box and dip tank treatments (using surrogate exposure data from the Phase IV passive dosimetry study conducted by the Sapstain Industry Group). In addition, a quantitative postapplication risk assessment for boron was conducted for workers handling treated wood, as well as the general public that may come into contact with treated wood, using the provided transferrable residue study conducted on dimensional lumber and postapplication exposure algorithms for wood preservatives (Section 10) from the US EPA Residential SOP (2012). Health risks of concern were identified for chemical handlers, workers handling treated wood, and the general public contacting treated wood. No additional mitigation measures are available that can be applied to lower the exposure. As a result of the boron risk assessment, the proposed uses of Genics CuB cannot be supported.

For copper, no toxicological reference values for copper were established since systemic toxicity following exposure to copper is not expected (PRVD2009-04 and RVD2010-05, *Copper Pesticides*). As a result, quantitative occupational, residential or postapplication risk assessments were not required for copper for this application.

Dietary exposure and risk assessment

A dietary exposure assessment was not required for this application.

Environmental Assessment

No additional environmental risk is expected when Genics CuB is used in accordance with the proposed label, which includes statements to mitigate risks to the environment.

Value Assessment

Use history information and laboratory studies conducted to determine efficacy were considered. Genics CuB has acceptable value as a surface applied wood preservative at the application rate range of 1 L / 5-10 m².

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided and cannot support the registration of Genics CuB. This application is now closed.

References

PMRA Document Number	Reference
2505792	2015, Product Chemistry Submission to Canada's PMRA, DACO: 3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.4.1 CBI
2505793	2014, Physical State and Formulation Type, DACO: 3.5.2,3.5.4 CBI
2505794	2013, Genics CuB Product Chemistry Submission to Canada's PMRA, DACO: 3.5.11, 3.5.12, 3.5.13, 3.5.15, 3.5.5, 3.5.8 CBI
2609374	2016, Confirmation of Actives Sources, DACO: 3.2.1 CBI
2609375	2015, Viscosity of Genics Cobra Pastes, DACO: 3.5.9 CBI
2609376	1998, Method 6020A, DACO: 3.4.1 CBI
2609377	2016, Waivers/rationales for Physical/Chemical properties, DACO: 3.5.10, 3.5.11, 3.5.12, 3.5.13, 3.5.15, 3.5.8 CBI
2618306	2016, Corrosion Characteristics of Genics CuB - Effect on Tensile Properties of High Density Polyethylene (HDPE) Test Coupons, DACO: 3.5.14 CBI
2618307	2016, Determinations of pH, Density and Storage stability (Accelerated) of Genics CuB Solutions, DACO: 3.5.10, 3.5.6, 3.5.7 CBI
2585192	2001, An Eight-Week Mould Resistance Test of OSB Treated with Genics Copper/Borate Formulation, DACO: 10.2.3.3 (E)
2585193	2001, Durability of OSB Incorporating a Copper/Borate Formulation in a Laboratory Soil Jar Decay Test, DACO: 10.2.3.2(G)
2585195	2004, Efficacy and Diffusibility of Copper Borate, DACO: 10.2.3.3(E)
2505799	2006, Acute Oral toxicity Study (UDP) in Rats, DACO: 4.6.1
2505800	2006, Acute Dermal Toxicity in Rats, DACO: 4.6.2
2505801	2006, Acute Inhalation Toxicity Study in Rats, DACO: 4.6.3
2505802	2006, Acute Eye Irritation Study in Rabbits, DACO: 4.6.4
2505803	2006, Acute Dermal Irritation Study in Rabbits, DACO: 4.6.5
2505804	2006, Skin Sensitization Study in Guinea Pigs, DACO: 4.6.6
2505805	2013, Genics CuB Exposure (Occupational and/or Bystander)
2629217	2016, Estimation of Worker Exposure to Borates and Copper with Regard to Use of Genics CuB in Spray Box Treatment of Wood, DACO: 5.3, 5.4, 5.5
2629219	2016, Estimation of Worker Exposure to Borates and Copper with Regard to Use of Genics CuB in Dip Treatment of Wood, DACO: 5.3, 5.4, 5.5
2629220	2016, use/description, DACO: 5.2
3266723	2021, Wipe study to define dislodgeable residues on lumber treated with a copper borate solution, DACO: 5.6, 5.7, 5.9
3372835	2022, DACO 5.9, DACO: 5.9 CBI
3408104	2022, DACO 5.6, 5.7 or 5.9, DACO: 5.9
3442782	2023, Rpt-14327-DW_GenicsWipeTest_2021_Revised, DACO: 5.9

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