

Country	Denmark
SubmitterType	BehalfOfAnOrganisation
OrganisationType	Company-Importer
OrganisationCountry	Sweden
DontDiscloseNameIfPublished	Yes
ProductType	PT08

## GeneralComments

**AltIdentityAndProp** offer a similar fungicidal spectrum to disodium tetraborate pentahydrate. The addition of either permethrin or cypermethrin, would be necessary to incorporate the insecticidal properties of disodium tetraborate pentahydrate.

**TechFeasibility** 2. Technical feasibility  
A number of products have been approved under BPR containing alternatives to disodium tetraborate pentahydrate. These products contain multiple active substances in order to achieve the same spectrum of efficacy as disodium tetraborate pentahydrate. Formulating with multiple active substances brings additional complexities that are not present when working with a single active. The changes in the availability of co-formulants would be detrimental to these products as they have limited water solubility, whilst disodium tetraborate pentahydrate formulations are simple by comparison.

**EcoFeasibility** 3. Economic feasibility  
INDIRECT COSTS:  
Indirect costs are hard to quantify, but would include:  
Loss of historic timbers - the unique ability of borates to penetrate deeply into timber allows timbers in historic buildings to be retained which would otherwise have to be cut out and replaced. This would not only cost more money, but would result in a loss of historic Authenticity.

**HazAndRisks** 4. Hazard and risks of the alternative  
Fungicidal Alternatives -  
Propiconazole is a reproductive toxin 1B, an acute toxin if swallowed, a skin sensitizer and is under assessment as an endocrine disruptor. It is also toxic to aquatic life with long lasting effects. It is under assessment to be a candidate for substitution.  
Tebuconazole is a reproductive toxin 2, an acute toxin if swallowed and is toxic to aquatic life with long lasting effects. It is under assessment to be a candidate for substitution.  
IPBC is a skin sensitizer, an acute toxin if inhaled or swallowed, causes eye damage and damage to the larynx. It is under assessment as an endocrine disruptor. IPBC is also toxic to aquatic life with long lasting effects. It is under assessment to be a candidate for substitution.  
Insecticidal Alternatives -  
Permethrin is a skin sensitizer and an acute toxin if inhaled or swallowed. It is also toxic to aquatic life with long lasting effects.

Cypermethrin is toxic if swallowed, or inhaled, may cause damage to organs through prolonged or repeated exposure, is harmful in contact with skin and may cause respiratory irritation. It is very toxic to aquatic life with long lasting effects. It is under assessment to be a candidate for substitution.

By comparison disodium tetraborate pentahydrate is considered a reproductive toxin 1B.

Availability

5. Availability

The alternatives are currently available, but future availability cannot be relied upon due to the possibility that the regulatory issues outlined in section 4 may cause manufacturers to withdraw from the market.

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. Conclusion on suitability and availability of the alternative Products containing alternative active substances to sodium tetraborate are currently on the market. However, the process of switching to these products would constitute enormous investment from a SME.

OtherComments

7. Other comments

An essential property of boron is that wood-degrading fungi do not build up resistance to boron.

Boric acid / Disodium tetraborate dehydrate diffuse, which means that they penetrate the wood and reach moist wood where wood-degrading fungi are found.

Since boron is an element, it does not degrade in nature.

Heartwood diffusion, only preservative that penetrates heartwood.

Treatment of refractory species such as spruce.

Low cost and low mammalian toxicity and no risk in normal handling and use.

Also good in end of life planning as it is an essential micronutrient used in agriculture, e.g. you can chip it and use for mulch or add to crops. Or burn for energy recovery or make biochar.

There are no other active ingredients that have these properties

SubstanceName

Boric acid

ECNumber

233-139-2

CASNumber

10043-35-3

CompetentAuthority

The Netherlands

CommentRegarding

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IntendedUse

Boric acid acts a fungicide and insecticide; and is used for industrial, professional, and non-professional users as a preventive and curative wood preservative for wood and construction timbers in Use Classes 1, 2, 3 and 4a according to CEN 335-1 standard. Products are applied by vacuum pressure, dipping, injection, spraying/deluge, or brushing