

FirstName	Hannu
FamilyName	Boren
Country	Finland
SubmitterType	BehalfOfAnOrganisation
OrganisationType	Company-Downstream user
OrganisationName	livari Mononen Group
OrganisationCountry	Finland
ProductType	PT08
GeneralComments	<p>livari Mononen Group is the leading treated wood producer in Europe based in Joensuu, Finland and we export creosoted wood all over the world. We have impregnation plants at UK, Finland and Norway with more than 200 employees. We manufacture treated poles and timber products for various applications, where high product safety and durability are absolutely essential, like electricity and telecommunications networks, railways, bridges, piers, jetties, framings, fencings, pathways etc..</p> <p>Full support to renewal of authorisation of the boric and disodium tetraborate pentahydrate active substances (PT8 Wood preservative)</p> <p>First of all, the wood shall be the first choice of constructions material at any structure. Wood preservatives extend service life of wooden structures and give opportunities to use wood in harsh conditions. Several life cycle studies prove the long-term benefits for the environment when using treated wood vs. alternative materials. Especially, carbon stored into wood products is one of the best methods to mitigate global warming. Service life of preservative treated wood is longer keeping carbon stored over extended periods of time.</p> <p>As we operate in global markets, we must be able to deliver treated wood products to countries with differing requirements from those of the EU. Therefore, the manufacturing of the products in the EU and their export outside the EU must be ensured in all situations – even if the use of certain impregnated products was banned in the EU. Economic interests of any single Member State must not be taken into consideration in the decision making related to the approval of wood preservatives. The decisions must be based on the interest of the whole industry in the EU.</p>
AltIdentityAndProp	<p>No approved active substances listed in PT 8 (wood preservatives) that fulfil the unique dual efficacy (insecticidal and fungicidal efficacy) of borates, including boric acid. Borates act simultaneously on fungi and insects and are, because of their dual and high efficacy, exceptional.</p> <p>No potential alternative active ingredients, which fulfil the properties of borates, namely: low environmental toxicity, low toxicity to mammals, low vapor pressure, unique efficacy</p>

spectrum, anti-corrosion properties, buffer properties, penetration properties. Together with copper excellent wood preservative.

There is no non-chemical alternatives in applications, where high product safety and durability are absolutely essential, like electricity and telecommunications networks, railways, bridges, piers, jetties, framings, fencings, pathways etc..

## TechFeasibility

Boron containing actives, such as boric acid and disodium tetraborate are unique in their penetration properties. In aqueous solution they can penetrate deep into the wood structure and confer resistance to biological attack, not only on the surface of the treated wood, but also in deeper regions. This so-called penetration process of the preservative / active is of importance for all relevant wood preservation segments and applications such as anti-sapstain treatment, dipping treatment (UC 1 and UC 2) as well as for vacuum-pressure treatment applications (UC 3 and UC 4).

Borates show strong metal corrosion inhibition, buffering actions and stabilization properties within technical formulations reducing the acute risk for workers and by-standers. Because of their low vapour pressure - neither Boric acid nor Disodium tetraborate evaporate into the atmosphere - a respiratory uptake of these biocides from treated wood is impossible. Therefore, boron based active ingredients are the preferred active ingredients within buildings under roof.

Boron-based active ingredients have flame retardant and metal corrosion-inhibiting properties which provide an additional value in treated wood. Reduction of metal-corrosion is important when metal fasteners are used in wood construction.

## EcoFeasibility

We expect that developing new wood preservatives with actives other than boric acid will eventually result in higher prices of the preservatives and therefore impact our business. In the end the consumers will have to pay higher prices for the protected wood.

## HazAndRisks

We are not able to correctly judge the hazards and risks of alternative wood preservatives, since these depend on the other actives used and on the resulting retentions, which might be higher in newly developed wood preservatives.

Borates have low toxicity to mammals and the lowest environmental toxicity in comparison to all other approved active biocidal substances in PT8.

Borates are the active substances with the lowest long-term toxicity despite the reprotoxic effects. The potential health risk of humans exposed to known wood preservatives containing several active substances is therefore in no case triggered by the

boron compound but by the other active substances of the product. This means that non-prolongation of the approval of boron compounds would probably lead to new products with higher health risks because the boron compound must be replaced in most cases by active substances with higher toxicity. Therefore, non-prolongation of the approval of boron compounds would be in contrast to a key element of the BPR i.e. to ensure a high level of protection for humans and the environment and an adequate chemical diversity of the active substances to minimize the occurrence of resistances in the target organisms.

Boron is a ubiquitous element in nature and is one of seven elements which are essential to plant growth and classified as 'micro-nutrients'. No significant impact to the environment is expected from this class of substances if leachates of treated wood are considered about the complete life-time cycle of treated wood.

Availability

Availability of various wood preservatives is important to keep up competition and cost levels reasonable.

AltSuitAvailConcl

There are not exactly matching alternatives on the market. To achieve protection of wood against fungi and insects, at least two to four of these biocides need to be combined, at least one fungicide and one insecticide.

Boron has a unique mode of action and in solution forms complexes with various substances, resulting in an inhibition of metabolic functions. This type of mode of action is unique amongst the registered active biocidal substances in PT 8. No formation of resistance is possible due to this special mode of action. Because of the mode of action, boron containing actives have a broad efficacy spectrum against various basidiomycetes belonging to the group of the brown rot and white rot fungi. Boric acid is therefore used as a co-biocide against copper-tolerant fungi (brown rot) in UC (Use classes) 3 and UC 4 conditions.

Conclusion

Boric acid and disodium tetraborate pentahydrate acting as a fungicide and insecticide in wood preservation, play an important role to prevent and cure wood and construction timbers. In addition, we would like to emphasize that despite the hazard classification of these borates as Repr. 1B, their uses are safe for the general public and for workers. We support that boric acid and disodium tetraborate pentahydrate can be used for the design of wood preservatives together with copper and other co-biocides in future, especially because life cycle studies prove the long-term benefits for the environment when using treated wood vs. alternative materials time and time again.

SubstanceName	Boric acid
CommentType	PublicComments
ECNumber	233-139-2
CASNumber	10043-35-3
CompetentAuthority	The Netherlands
CommentRegarding IntendedUse	8 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