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SubmitterType	BehalfOfAnOrganisation
OrganisationType	Company-Downstream user
OrganisationName	Rentokil Property Care
OrganisationCountry	United Kingdom
ProductType	PT08
GeneralComments	<p>May I start by giving my background in reference to my ability to reply to your invitation for comment on the use of Boron based wood preservatives. I joined the Rentokil Research Laboratories at Felcourt in June 1980, working in the timber laboratory. I worked my way up from Technician, through timber and pre-treatment technologist to QA manager and transferred to my present position as Technical Manager for our Property Care business, when our laboratories moved in 2008. I have therefore spent 40 years in this industry. During that time I worked on developing and testing new pre and post treatment formulations, preparing test blocks, field testing, operator/client exposure studies and collaborative work with the Building Research Establishment.</p>
AltIdentityAndProp	<p>During the 80's, many active ingredients were available for us to consider, but as you are only too aware, that list has reduced considerably to a point where choice is almost non-existent and should resistance emerge we may be left in a very vulnerable position. The pre-treatment market is large, but the post-treatment market is very small relative to the amount of money a manufacturer has to spend in regulatory costs. This has further depleted choice in recent years. The remaining actives are often oils that require co-solvents and surfactants which can increase risk. Compared to Borates (including Disodium tetraborate pentahydrate) which are both insecticides and fungicides, the alternatives mean we would need to apply more pesticide to a property, not less. The alternatives are themselves up for substitution. Permethrin is an aquatic pollutant, sensitiser, can cause paraesthesia and is toxic to cats. There is no loss of Borate over time as it has a very low vapour pressure and therefore no offgassing. It has very low mammalian toxicity.</p>
TechFeasibility	<p>I have covered most of this in section 1, but would add that losing Borates would then require the use of more chemicals to achieve the same aims. Borates dissolve in water without the need for multiple co-solvents, which have their own hazards. They are unique in being deeply diffusing in damp timbers and therefore work very well in the remedial timber treatment industry.</p>
EcoFeasibility	<p>As well as the H&amp;S/Risk advantages of using Boron based preservatives, there are obvious commercial advantages. Since</p>

the early 90's our vehicles have carried one RTU fluid and one RTU paste to cover all our treatment requirements. Since 1994 we have undertaken three major reviews of alternative treatment methods and our pesticide choice/market. They have all identified an ever reducing choice of actives and confirmed Borate based preservatives as the safest for both operator and client exposure when applied and used as directed.

These reviews have also identified that if we were to stop using Boron, we would need to replace 2(3) products with 3 fluids, 3 pastes and Sterilising fluid in order to comply with the ACOP and COSHH. This would also increase the amount of waste containers we produce three fold. In the current market we would struggle to find those replacements as I believe some do not exist as the manufacturers cannot support the formulations in such a small market. Many of the alternative actives are toxic at lower levels than Borates and have hazard classifications that mean use in the remedial market is difficult. Furthermore, we have always sought the simplest formulations, as some co-solvents have more concerning hazards and lower EH40 values than what we presently use. The increased costs of holding all these different products, the potential for mistakes, the increase in complexity and training, the extra product being transported and effectively the extra active being applied to properties, make the move from Boron very unattractive. There has also been an increasing prevalence of frame formulations as companies try to reduce costs, but this reduces both choice and competition.

The potential economic costs to the United Kingdom and indeed the preservation industry are high. The cost of preservatives, boron based or not, is likely to continue to rise as the market shrinks due to increasing cost and the cost of regulatory compliance increases. This is already being seen with Permethrin. Due to its unique Dual Use designation, low mammalian toxicity and lack of off-gassing, Boron continues to be a very attractive and efficient preservative. There would need to be an investment in alternatives, even if only the increased cost of transporting and stocking 7 products rather than 3 to achieve the same result. These costs would have to be passed on to the consumer.

Without the availability of suitable and safe timber preservatives many of the buildings we are presently able to save at an economic cost, would fall into disrepair. As stated above the alternative to treatment is replacement. In a serious infestation that would mean lifting all floor boards and deciding which structural timbers to replace. Most householders would find this to be an unnecessary expense, but one they would have to endure. For roofing timbers there would be a similar scenario of erecting scaffolding, removing tiles, felt etc. in order to replace the main structural timbers.

HazAndRisks

I have already outlined these above. But would say in summary that loosing Borates (including Disodium tetraborate

pentahydrate) which are naturally occurring insecticides and fungicides, potentially means the increased use of other pesticides that have more risk phrases attached to them and are themselves likely to be up for substitution. Many are potential endocrine disruptors.

#### Availability

No one can say how long any actives will be available commercially, due to regulatory pressure and cost. However, the loss of borates reduces further our choice and ability to formulate competitively.

#### AltSuitAvailConcl

As stated above, Borates (including Disodium tetraborate pentahydrate) can only be replaced by formulations having multiple actives and co-solvents/surfactants. None of these alternatives have low mammalian toxicity and the physical characteristics of borate formulations, including the ability to deeply diffuse into damp timber.

#### OtherComments

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In summary, although we appreciate Borates are categorised as Risk Category 2 for Reproductive Toxicity (may impair fertility, may cause harm to the unborn child), there are strong arguments as to why the physical make up of Borates make them far safer than other alternatives. Borates have low mammalian toxicity, are naturally occurring in the soil and we ingest 20-235mg Boric Acid as part of a balanced diet, through root vegetables, orange juice, coffee, wine and bread in particular. Borates are not mutagenic. There is no vapour pressure, so through PPE/RPE for our operatives and exclusion times for our clients, we can ensure contact with the product is as low as possible. Dermal absorption is low at less than 5% and if borates were to enter the human body they are not accumulated, but excreted in around 21hours. Studies in Turkey, China and the USA, have shown high natural levels in drinking water with no identified detriment to the local population.

Borates continue to be used in everyday products that we all come into contact with, such as fertilisers, washing powders, talc, baby creams and cosmetics. Some are even used in pharmaceutical products for treating illness in humans. During Rentokil's 26 years of continuous use of Borate preservatives on tens of thousands of contracts, I am not aware of any recorded cases of client or employee problems attributable to our boron preservatives.

Finally, outside of Europe, they continue to be freely used and supported by many of the National Regulatory Bodies. Where pre-treated timber is concerned, Borate based wood preservatives were pioneered in New Zealand in the 1940's and continue to be used without problems. Within Europe, Poland produced the CLH Report in 2013 and found in favour of the continued use of borates.

SubstanceName	Disodium tetraborate pentahydrate
CommentType	PublicComments
ECNumber	215-540-4
CASNumber	12179-04-3
CompetentAuthority	The Netherlands
CommentRegarding	8
IntendedUse	Disodium tetraborate pentahydrate 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. Products are applied by vacuum pressure, dipping, injection, spraying/deluge, or brushing