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ProductType PT08

GeneralComments RETENTION OF BORIC ACID AND DISODIUM TETRABORATE
PENTAHYDRATE AS ACTIVE INGREDIENTS UNDER BPR ARTICLE 95

Boron-based wood preservatives are used mainly, although not exclusively, for the remedial treatment of in-situ timbers in domestic and commercial buildings. They can take the form of water soluble powders, solid rods, liquids or gels. The base borates can be solubilized in low toxicity liquids such as polyethylene glycol, monopropylene glycol, glycerol and/or water, to create liquids, gels and pastes.

Boron-based wood preservatives are extremely versatile in use and formulation and are the only actives which are both fungicidal and insecticidal, negating the need for other actives to be included (although they are occasionally supported by BKC in timber treatments). The formulated products are, to a large degree used only by professional applicators, using regular PPE in UC 1&2 situations. There is therefore little or no risk to the applicator or the occupier of the treated property (Assessment report Directive 98/8/EC February 2009 for Disodium octaborate tetrahydrate– Netherlands).

Boron-based preservatives, when formulated as liquids (MPG and water combinations) or as gels (glycerol and MPG combinations) are highly effective at penetrating large dimensional or embedded timbers (where only a single face may be exposed). They are also able to penetrate damp timbers (Remedial timber treatment with Borates – Lloyd, Schoeman, Stanley 1999), such as those in flood damaged property (an increasing problem over recent years) or where water ingress has led to fungal attack. This ability allows for the quick treatment of susceptible timber, long before decay fungi can take hold. Most conventional wood preservatives can only be used on dry timber, as moisture forms a barrier to penetration.

Whereas relatively high wood moisture content can actually increase the depth of penetration of boron-based wood preservatives through diffusion, and the ability to formulate products with a high concentration of borates means that, even when spread through large sectional timber, loadings are still sufficient to protect against insect and fungal attack. Boron-based wood treatments are inorganic and do not degrade. The result is that, unless physically removed, the effectiveness of treatment does not decline over time. There is also no evidence of decay fungi or wood boring insects developing resistance to boron-based treatments.

Boron-based actives are inorganic and as such do not off-gas, making them a suitable treatment in properties where occupants

may suffer from chemical sensitivity. Unlike most of their counterparts, borates are not classified as skin sensitizers, skin or eye irritants or endocrine disruptors. They are not classified as genotoxic or carcinogenic. Borates will also, to some degree, reduce the combustibility of timber.

Although there is no evidence of borates having an effect on human reproduction, they are classified as reprotoxicants. The original dossiers prepared by The Netherlands under Directive 98/8/EC show that ingestion is the primary route of exposure. In the field of professional use, this would need to be a deliberate act. With treated timber, The Netherlands Rapporteur concluded that, for professionals and non-professionals, cutting and sanding of treated timber (single and repeated daily), children playing on treated structures or chewing treated wood chippings can be excluded as routes of exposure (as were combined dermal and respiratory exposure through brushing and spraying for non-professionals). Boron-based biocides may only account for up to one third of the total biocides used in remedial timber treatment. However their particular mode of action, their diffusion properties and their ability to be used in situations where other products are not as effective makes them an invaluable asset.

Withdrawing borates would have a socio-economic impact and affect SME and micro manufacturers disproportionately. Currently there is a trend for large manufacturers of active ingredients to produce frame formulations, obtain approval for these and then license them to companies, large and small. This gives larger manufacturers, who have the ability to purchase large volumes of actives, at discounted rates, a commercial advantage over small manufacturers, who have to purchase lower volumes at premium rates. It also leads to reduced choice for users and consumers and a possible monopoly position for the manufacturers of the actives. Lack of alternative, competitive products, allows both manufacturers and distributors to hold a monopoly position and, because there is no competition, dictate price.

There is also concern in industry, from both users and manufacturers, that, if the current trend continues, any further reduction of suitable available active ingredients, will lead to an inability to produce effective treatments, at a time when timber construction, through CLT and MMC is on the increase.

Evidence of the use of borates dates back, at least, to the 1st century AD. Sodium Borate was used as a flux by Roman goldsmiths and the Emperor Tiberius was presented with, probably the first, borosilicate glass in 37A.D. Its use as a biocide can be traced back to at least 1917 and contemporary studies on thousands of borate workers shows no evidence of adverse reproductive effects. Borates are added to fertilizers to allow crops to be grown in boron deficient soils and they are a ubiquitous micronutrient essential to life. We ask that ECHA take a holistic approach to this dual purpose biocide. Compared to other worldwide uses, the remedial use of borates accounts for an infinitesimally small addition, but they have, over the last century, proved invaluable.

SubstanceName Disodium tetraborate pentahydrate

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