

Public consultation on potential candidates for substitution: Didecylmethylpoly(oxyethyl)ammonium propionate

Objection regarding technical feasibility

The responsible competent authority proposed to classify didecylmethylpoly(oxyethyl)-ammonium propionate as persistent and toxic, and the active substance is thus considered as a potential candidate for substitution.

This active substance is of the utmost importance for our company as didecylmethylpoly(oxyethyl)ammonium propionate has been used **successfully** in different wood preservative formulations now **for more than 18 years**. In this respect, the following **scientific, economic, but also technical aspects** clearly speak against its substitution:

1. In the field of research and development of wood preservatives, it became necessary at the latest when the BPD came into force for those responsible to take a closer look at the physical/chemical properties of substances used in wood preservative formulations and to identify the possible risks to human health and the environment and to exclude them. It has been state-of-the-art practice in our company to take these aspects into account in the development and production of wood preservatives for decades. Thus, it can be claimed with pride that not only is detailed knowledge available with regard to the relevant properties of the active substances used by us, but also progress has been made by following intensively the reviews of current legislation. On the basis of all information available to us, the classification of the active substance **didecylmethylpoly(oxyethyl)ammonium propionate** is from our point of view neither justifiable **as persistent nor as toxic** and we demand a transparent explanation for the present assessment. This concerns inter alia the classification as toxic, since the interpretation of the limit for *Daphnia magna* seems to be incorrect.
2. The development of a wood preservative for use in later stage protection of wood in use class 4 requires at least 5 to 6 years, due to the studies required to demonstrate efficacy according to EN 599. As basic formulation activities have to be completed prior to such tests, and in most cases initial findings on the effectiveness of these formulations should also be available, additional time will still be necessary – all in all an **8-10 year development period for one preservative formulation** can therefore be expected. Thus, a substitution would have serious financial and economic consequences especially for mid-sized companies, so that the practical experience required by the market of at least 15 years in the areas of wine and fruit growing and/or 20 years for telegraph poles is actually hardly covered at all.
3. From a technical standpoint, didecylmethylpoly(oxyethyl)ammonium propionate has a special significance amongst active substances, because this represents almost the only organic active ingredient with **insecticidal, termiticidal and fungicidal efficacy for multiple applications in all use classes 1, 2, 3 and 4** at the same time.
4. In addition, didecylmethylpoly(oxyethyl)ammonium propionate is absolutely unique, if the system-related positive characteristics of this quaternary ammonium compound are considered in relation to the lack of **corrosion** due to the anion (as propionate) (e.g. in case of steel plant parts, such as storage tanks, emersion devices, pressure impregnation systems), which manifests itself not only in the laboratory tests carried

out according to the norm. It is rather a matter that over a period of nearly 20 year's use of didecylmethylpoly(oxyethyl)ammonium propionate in our wood protection products, only positive experiences can be reported especially in the dipping process and especially in the vacuum-pressure impregnation process areas. This also applies, of course, to connectors such as metal fittings, nail plates, nails, screws, fittings, or similar, which are essential for the installation of wooden elements.

5. Not only for the afore-mentioned reasons have preservative formulations containing didecylmethylpoly(oxyethyl)ammonium propionate been used for years to impregnate poles in the area of energy supply or telecommunications. These protection systems **successfully replaced the toxicologically critical chromate-containing wood preservatives (CCA, CKB and CC)**. Since 1996, we are also able to provide positive experiences on the impregnation of poles for transmission lines.
6. In addition, there are only a **few real alternatives** to achieve successful wood protection in the area of **wine and fruit growing**, which emerge from many years of practical experience with wood preservatives based on didecylmethylpoly(oxyethyl)-ammonium propionate. Last but not least, in 2011 an application for funding a research project received a positive vote by the Board of Trustees of the German Federal Foundation for the Environment. Didecylmethylpoly(oxyethyl)ammonium propionate will play an important role in this research project, which received a grant worth €450,000.
7. In particular, the active substance as a co-biocide in copper-based wood preservatives will play a particular role, especially in use class 4. Its proven **effectiveness against copper-tolerant fungi** is crucial, whereby data from our company may in this respect be requested by all means. Furthermore, it should be noted that copper as a basic biocide for protecting wood in contact with the soil is irreplaceable, and only a limited number of actives can be used as co-biocides due to the technical restraints in formulation, such as stability of the active substance in the presence of copper. Additionally based on the perfect combination of copper and didecylmethylpoly(oxyethyl)ammonium propionate a well-balanced efficacy against a broad range of wood rotting fungi could be achieved and the retention of a wood preservatives/total amounts of actives could be minimized.
8. Above all, especially in the areas of application mentioned above, such as for the protection of posts or telegraph poles, only a few possibilities exist to select appropriate biocides due to the currently existing and prevailing conditions. This is due to the small number of available existing biocides which have an **increasing tendency to become resistant** towards fungi which destroy wood. This can only be counteracted in the long term by maintaining the variety of available biocides.
9. Due to the cationic nature of the active substance, a strong affinity exists to the wood matrix, which explains the **immobility of the substance** after its penetration into the wood. This property has a positive effect at an extremely low release of the active substance into the environment and thus explains the long and previously described efficacy of corresponding products. Due to the low environmental relevance, the concurrent small-scale application of didecylmethylpoly(oxyethyl)ammonium propionate-based wood preservatives with simultaneous release of the substance into the soil, there should be practically no impact or only a negligible one from a scientific point of view on the environment. For example, a **semi-field study** following NT Build 509 was carried out using a didecylmethylpoly(oxyethyl)ammonium propionate-based typical wood preservative with the result: **no unacceptable risk** for the environment.

This aspect raises a serious and generally existing problem in the PBT assessment and associated consequences: on the one hand, consideration of the level of persistence in the evaluation of the active ingredient may already be responsible for the admission as a candidate for substitution. On the other hand, data relevant for preservative formulations will not be taken into account at this point, although these could possibly lead to a different conclusion. The question about a possible substitute should be solely be made in combination with subsequent product assessments.

We did not expect any inclusion of the active substance as a candidate for substitution due to the afore-mentioned facts and were not informed in advance, despite close cooperation with the applicant. Since the applicant was also surprised, the surmise seems to be that the exchange of information between CA and the applicant did not comply with the prescribed rules and regulations. For this reason, we request that possible errors in the process are additionally taken into account. Regardless of this, it must be emphasized again that for the above-mentioned reasons and the existing benefits **from the technical and scientific point of view, didecylmethylpoly(oxyethyl)ammonium propionate does not seem to be replaceable .**