BIOCIDES AND THEIR USE IN COATINGS

The global market size of biocides reached 9.4 billion USD in 2016. The major fields of use for biocides include drinking water purification, disinfection of foodstuffs and food contact surfaces, personal and public healthcare, wood protection, and paint production.

Biocides are used in coatings mainly for two purposes: (a) increasing the shelf life, (b) prevention of the growth of microbes, mold and algae in applied paint film. On the other hand, the major product groups are waterborne architectural paints, antifouling marine paints, and wood coatings for exterior use. Biocide use in coatings increased in the second half of 20th century, as a consequence of the increase in waterborne coatings. **Paint-related consumption constitutes less than 10% of the total biocide use.**

The potential effects of biocides on human health and environment require the launch of biocides to market and their use to be under control.

The related legislation in Turkey, "Directive on Biocidal Products" is in compliance with EU directive 98/8/EC implemented in 2009. Directive has been amended on Mars 12th 2014 to revise the annexed lists of substances, and to update some of the implementation dates. The decisions about in-can preservatives are fully enforced. Applications about the candidate substances to be used as film and wood preservatives are required to be completed until the beginning of 2018, and all authorization processes are to be completed until the beginning of 2019.

Among a number of The water solubility of the biocides and their potential for "leaching" from the surface of the paint film are among the active considerations in affirming "safe use" of biocides in coatings. Thus, safe use of biocides is kept in the agenda of International Paint and Printing Ink Council, IPPIC.

On the other hand, end-of life management for the painted articles and leftover paint is also highly influential on potential risks biocides may impose on public and environment related health issues.

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