

Mineral Oil Barriers for Packaging Qualities

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Mineral Oils, or MOH (for Mineral Oil Hydrocarbons), either as aliphatic hydrocarbons (MOSH) or as aromatic hydrocarbons (MOAH) are undesired contaminants, which can be found in our daily foodstuff.

The origin of MOH can be manifold – penetration of printing ink or incomplete combustion processes are only some to be mentioned. By consuming approximately 95 mn Barrels/d (15 bn l/d) of crude oil, the ubiquitous presence of MOH becomes obvious. But where does the contamination of MOH in paper and board products come from? Mainly from mineral-oil based printing inks on recycled newspaper but also from other materials used in the production process – starting from defoamers in the wet-end process or coating color components to glues used in converting.

The German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV – called BMEL today) urged the food packaging producers to act appropriately to reduce levels of mineral oil in foodstuffs. An appropriate first measure would be the omission of mineral oil-containing printing inks for paper and board packaging.

But is this sufficient? No – neither the ban of mineral oil containing printing inks, nor the use of virgin fibers will lead to a satisfactory solution of this real threat!

Furthermore this would not solve the dilemma for the producers of food packaging grades based on recycled fibers. Finally, the so-called cross contamination has to be considered too, e.g. in secondary packaging materials used for transport or storage purposes at retailers.

The only promising solution is to use packaging materials with a functional barrier. If our industry is not able to offer products that are meeting the market's requirements, volumes will be lost to polymer-based packaging solutions.

A brief look back into history of MOH in packaging grades and an evaluation of the actual and expected legislation will be shown in this paper before presenting the solution offered by Omya. This will give a sound basis for discussing the threats and options for the fiber-based packaging industry.