



TRANSPARENT SHIELD

Barrier films can protect food from mineral oils.



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Chief of Multinational Sales at BIAXPLEN:

At the Interpack packaging fair that took place in May in Düsseldorf, where BIAXPLEN was one of the exhibitors, many stands of feedstock and BOPP producers featured information on barriers against mineral oils. “Seeing how BOPP is the go-to packaging material for many foodstuffs, the market puts the onus to provide the solutions primarily on BOPP producers. This is a formidable task, and we have our entire R&D function working on it. SIBUR takes its social responsibility seriously, so we spare no effort to bring both our current and future product range in compliance with all packaging safety requirements”.

Food safety depends on a variety of factors, such as the feedstock quality, processing, conditions of storage and transportation, and, finally, packaging. Some yet uncorroborated research identifies mineral oil in cardboard packaging as a possible risk factor. While scientists and officials are sorting out the issue, new grades of polymer films that create a barrier in the way of harmful substances will help stay on the safe side.

Mineral oils are mixtures of hydrocarbons that have a wide range of applications, forming a component of virtually everything, from motor oils to cosmetics. However, the World Health Organisation (WHO) has deemed ingesting these compounds harmful to human health.

It had long been accepted that there was only a small number of ways that mineral oil could migrate into foodstuffs, for example, through contaminants from harvesting machinery. However, in spring 2011, several British papers published articles on the threat posed by typical cardboard packaging. The authors cited the findings of a group of Swiss scientists headed by Dr Koni Grob. Upon testing products from supermarkets, the researchers found that recycled cardboard packaging produced mineral oils. They come from the printing ink in magazines and newspapers used to make the cardboard.

The publications received a lukewarm official response: Britain's Food Standards Agency was quoted as saying that Dr Grob's findings were "interesting", but took no regulatory action. The issue resurfaced in summer 2016, when ARD, a German TV broadcaster, aired a report on packaging safety as part of their investigative journalism series, citing research by the European Food Safety Authority (EFSA). Almost simultaneously, independent non-profit organisation Foodwatch published a petition against mineral oils, urging the government to take action. So far, there have been no measures taken, but in early 2017, the European Commission did resolve that the member states of the EU should monitor the migration of mineral oils into foodstuffs for the next two years.

In addition, European societies for the protection of consumer rights and retail networks have started requesting more tests of various product groups, as well as exploring the methods of keeping mineral oils out of products. Research shows that the longer a product stays in a package (during storage, for example), the more mineral oil may migrate into it. The risk is higher for products that have larger surface area per unit of volume, such as rice, flour, chips, etc.

At the same time, the Swiss Packaging Institute (Schweizerisches Verpackungsinstitut) reports that additional packaging made of aluminium, polyethylene terephthalate and polyamide protects products from harmful substances. Biaxially-oriented polypropylene (BOPP) films also have good protective properties. Over the last years, several types of food-grade BOPP that counteract mineral oils have been introduced to the market. They can be used as part of two and three-layer packaging, and are also compatible with metal coating.



The researchers found out that recycled cardboard packaging produces mineral oil vapours.

In Russia, requirements to the food product and packaging quality are set by technical regulations. Neither the existing technical regulations of the Customs Union On Safety of Packaging (TR TC 005/2011), nor similar EU regulations contain any provisions on mineral oil content. Based on the findings of European researchers, the situation requires further investigation.



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BIAXPLEN (part of SIBUR) is currently collaborating with NIOST (SIBUR's scientific centre for chemical technologies) on identifying mineral oils in its products and the feedstock used to manufacture BOPP films, and it is also making sure to get ready for the possible demand for mineral oil resistant solutions.



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