

News Release



BASF offers packaging industry innovative barrier solutions against mineral oil residues

■ **Solutions for every type of packaging and manufacturing process**

Ludwigshafen, Germany – May 3, 2010 – BASF offers the packaging industry a variety of barrier solutions that demonstrate a high effectiveness in preventing mineral oil residues from migrating from cardboard food packaging into food. This has been confirmed through a series of studies conducted by the official Food Safety Authority of the Canton of Zurich on the BASF products Ultramid[®], Eptal[®] A 816, Ecovio[®] FS Paper and specially developed dispersions. Four different solutions are available for coating every type of food packaging, including paper, cardboard and film. In 2010, a study by Zurich Food Safety Authority scientists using a dedicated measuring method had detected alarming levels of mineral oil residues from cardboard packaging in food. The same method was used in the testing of the BASF products.

Cardboard packaging is usually made of recycled paper that contains mineral oil residues from printing inks. At temperatures as low as room temperature, these residues evaporate and are deposited on dried foods packaged in the box, including pasta, semolina, rice, and breakfast cereals. Most of the plastic linings in the bag-in-box systems in use today do not provide sufficient protection.

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Analyses by the official Food Safety Authority of the Canton of Zurich from 2010 have shown that the evaporated mineral oils consist of about 80% paraffin and naphthene hydrocarbons and 15% to 20% aromatic hydrocarbons. Animal studies carried out by various organizations over the last years show that paraffin and naphthene hydrocarbons are highly likely to damage the liver, lymph nodes and heart valves, and the Joint FAO (Food and Agriculture Organization of the United Nations) / WHO (World Health Organization) Expert Committee on Food Additives (JECFA) has implicated aromatic hydrocarbons in causing cancer.

Four barrier solutions for virtually every type of packaging

“During the tests, cardboard, paper and films were coated with materials from BASF and the results show that the migration of mineral oil residues was considerably decelerated. The time measured were far beyond the sell-by dates of the food products normally packaged in such materials,” said Heiko Diehl, member of BASF’s Packaging Network Team. The company offers the packaging industry raw materials for barrier coatings for almost all types of packaging and conventional production processes.

Ultramid®, the BASF polyamide, has been used to date for applications including oxygen-barrier, robust multilayer packaging systems to keep meat and cheese fresh. It is suitable for use as a barrier coating both for cardboard packaging and as an inner packaging component in bag-in-box systems. The water-based dispersion **Epotal® A 816** is also suitable for film coating and hence for use as a barrier layer in bag-in-box systems.

Specially developed water-based **acrylate dispersions** are also available for paper and cardboard coatings. A variety of paper and cardboard grades coated with these products on a lab and pilot plant scale have exhibited very good barrier properties against mineral oils. The new dispersions are also effective barriers against native fats and oils and flavorings. Preparations for industrial-scale product testing are ongoing. Developed for compatibility with the cardboard

production process, these products are designed to provide easily implementable solutions with established technologies.

Ecovio® FS Paper is a biodegradable plastic suitable for manufacturing coatings both for cardboard and biodegradable film packaging systems. Ecovio FS Paper complies with European standard EN 13432 for compostible packaging, offering an alternative disposal pathway for certified paper and cardboard packaging in addition to recycling.

Newspapers as primary source of mineral oil in recycled paper

The Swiss scientists identified solvent-based ink components used in offset printing as the main source of mineral oils. A smaller percentage comes from the printing inks used to print on food packaging. Most of the mineral oils are from newsprint, which is one of the main components used to manufacture recycled cardboard packaging.

BASF already offers the printing industry mineral oil-free water-based binders under the **Joncryl®** brand name which are suitable for flexo printing on packaging, among other applications. The Joncryl® brand also includes binders for wet flexo newspaper printing, a technology already used to print mineral oil-free national dailies in the UK and Italy.

About BASF

BASF is the world's leading chemical company: The Chemical Company. Its portfolio ranges from chemicals, plastics, performance products and agricultural products to oil and gas. As a reliable partner BASF creates chemistry to help its customers in virtually all industries to be more successful. With its high-value products and intelligent solutions, BASF plays an important role in finding answers to global challenges such as climate protection, energy efficiency, nutrition and mobility. BASF posted sales of about €63.9 billion in 2010 and had approximately 109,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at www.basf.com or in its Social Media Newsroom at newsroom.basf.com.