

### **LANXESS study proves: Biocides in leather harmless to consumers**

- **No migration of biocide residues from leather detectable**
- **Leather contact safe for end users**

**Cologne, September 18, 2023** – Biocides required for the preservation of leather intermediates do not migrate out of the finished leather articles. This has now been proven in a study by the renowned FILK Institute in Freiberg, Germany. Thus, there is no risk for end consumers when wearing or getting in contact with leather products. To clarify this issue, specialty chemicals company LANXESS commissioned a study by the independent Institute for Material Testing.

The results of the migration study are critical for assessing the potential risks associated with biocide residues in leather articles. By measuring the amounts of biocide migrated, experts can assess the likelihood of human exposure and any associated risk.

In order to represent a wide range of applications, different types of leather were produced and tested: Automotive leather, shoe upper leather, garment leather and furniture leather. The samples were treated with the fungicides OPP, CMK, OIT and TCMTB, which are most commonly used in leather production. They prevent the growth of mold in leather intermediates and thereby inhibit the decomposition of the leather intermediates. The substances play an important role in the quality of the leather. All four fungicides achieved the expected results in all types of leather. Migration of biocide residues was not detectable.

#### **Biocides in the leather manufacturing process**

Leather production is a complex process that involves several steps to transform raw animal hides into high-quality leather. A crucial aspect of this is the use of biocides, which protect intermediate leather products from microbial growth and spoilage.

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Biocides such as PCMC (4-chloro-3-methylphenol), OPP (orthophenylphenol) (2-phenylphenol), OIT (octylisothiazolinone) and TCMTB (2-(thiocyanomethylthio)benzothiazole) are widely used in the leather tanning process. They prevent microbial attack, decay and spoilage in leather intermediates, including Wet Blue and Wet White. Their antimicrobial properties provide effective preservation of leather intermediates during production and storage.

Despite a thorough and state-of-the-art processing and treatment, finished leather products may contain biocide residues. This can raise concerns about potential risks to consumers who wear leather items such as shoes, bags and garments and thus have direct skin contact. "Our current migration study is therefore critical in providing insights into the migration of biocides from leather products. The study simulated the conditions to which leather products may be exposed during their life cycle," says Andreas Weckmann, Technical Application Manager Leather at LANXESS.

### **Satisfactory results**

The migration test investigated whether the four biocides migrated into a cotton fabric soaked with artificial sweat solution. All measured values were below the detection limit.

"The fact that there were no detectable biocide residues in the cotton fabrics soaked in sweat solution means an additional level of safety for the consumer. The results of the study prove that the unwanted biocide residues from the unavoidable preservation in the leather manufacturing process do not migrate out of the finished leather article," emphasizes Weckmann.

LANXESS is one of the leading manufacturers of biocides and biocide-containing formulations. The product portfolio includes the important preservatives OPP and PCMC. Both are known to be safe biocides and are therefore used for a wide range of applications. The phenolic active ingredients are degradable at low concentrations in biological wastewater treatment plants and in the aquatic environment.

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One of the most important LANXESS products for leather preservation is Preventol U-Tec G, which consists of more than 90 percent pure active ingredients and combines the strengths of phenolic biocides (PCMC and OPP) and the electrophilic-active OIT. It is applicable to all tanned hides, i.e. wet blue, chrome-free leather and vegetable tanned leather.

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### Image



The Material Protection Products business unit of LANXESS offers active ingredients, preservatives and disinfectants. They protect materials and substances from spoilage by microorganisms such as bacteria, yeasts, molds, viruses and algae. The effectiveness of the products is tested in the company's laboratories.

Photo: LANXESS

LANXESS is a leading specialty chemicals company with sales of EUR 8.1 billion in 2022. The company currently has about 13,100 employees in 32 countries. The core business of LANXESS is the development, manufacturing and marketing of chemical intermediates, additives and consumer protection products. LANXESS is listed in the leading sustainability indices Dow Jones Sustainability Index (DJSI World and Europe) and FTSE4Good.

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