

News Release

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Certification of the recyclability of multilayer films containing polyamide expanded

- **New studies prove recycling compatibility for broad portfolio of polyethylene/polyamide structures**
- **Adhesive-laminated polyamide multilayer films also tested and certified as compatible in the polyethylene film recycling stream**
- **Important fundament for fact-based development of European “Design for Recycling” guidelines**

Following the studies already conducted in 2021 on the recyclability of coextruded polyethylene/polyamide (PE/PA) multilayer films, the independent institute cyclo-HTP GmbH has completed further extensive investigations into the recyclability of multilayer films containing polyamide 6 (PA6) and ethyl vinyl alcohol (EVOH) copolymer. The subjects of the studies commissioned by BASF SE are coextruded PE/PA6/EVOH high-barrier films as well as and laminated PA6/PE films in household packaging waste. It has now been demonstrated that these two film types are also compatible for recycling in the polyethylene film stream.

“The results show that PE film waste streams containing PA can be processed without significant adjustments to the recycling process. The certification confirms the standard market practice of PA-containing film waste already being recycled by film manufacturers today,” says Dr. Matthias Zorn, Senior Manager Market Development Polyamides for extrusion applications at BASF.”

The compatibilizer, which is incorporated additionally into laminated structures to enable distribution of the PA component in the PE matrix, plays an important role. In coextruded structures, the already present tie layer used to bond PA and PE in the film becomes an effective compatibilizer during the recycling process. “If additional functionalized polyethylene (PE-g-MAH) is also added as a compatibilizer during primary film production, the polyamide is even recognized as a valuable material in the polyethylene recyclate by cyclos-HTP,” says Zorn.

The study on adhesive-laminated PE/PA films, which was set up in cooperation with SÜDPACK, a leading manufacturer of high-performance films, clearly shows how these films, which were previously considered non-recyclable, can also be made recycling compatible. In this project, a laminating adhesive from Henkel was used. Based on the new studies, a broad portfolio of PA-containing packaging can now be certified as recycling compatible.

Due to their unique property profile, polyamides reduce the amount of material used in packaging applications and therefore help to reduce packaging waste. They also improve the mechanical, thermal and processing properties of the packaging. While PE/PA/EVOH films are used in many cheese and sausage packagings requiring a high oxygen barrier, laminated structures are mainly found in printed film packaging in this segment.

Last year, the German minimum standard for determining the recyclability of packaging subject to system participation pursuant to Section 21 (3) VerpackG already recognized the recyclability of coextruded PE/PA films. The certification is another important fundament for a fact-based classification of polyamides in packaging. The results are made available both to the CEN standardization group, which is developing a “Design for Recycling” guideline at European level, and to the Central Agency Packaging Register, which sets the German minimum standard for assessing recyclability every year.

Further information can be found on our website [Mechanical Recycling \(basf.com\)](https://www.basf.com/en/mechanical-recycling)

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