

Case Study

ADDWORKS® PKG 906 CIRCLE



Polymer stabilizer solution for enhanced recyclability – how Clariant helped a producer of packaging films to turn his manufacturing waste into value

OBJECTIVES

Reintroducing high amounts of post manufacturing waste into the manufacturing process has always been recognized as an important factor for lowering the costs and increasing the efficiency of plastics production.

While helping a global producer of plastic films to optimize the antistatic properties of a manufacturing process for flexible packaging, experts from Clariant's BU Additives noticed the high amounts of plastic scrap generated during production. Aware of the negative impact this had both on the cost-effectiveness and the sustainability of the operations, they used the AddWorks® polymer stabilizer solution to solve this issue.

CUSTOMER NEEDS

- Reuse post manufacturing waste/off-spec material
- Avoid inferior film quality
- Avoid line speed reduction
- Raw material saving

SOLUTION

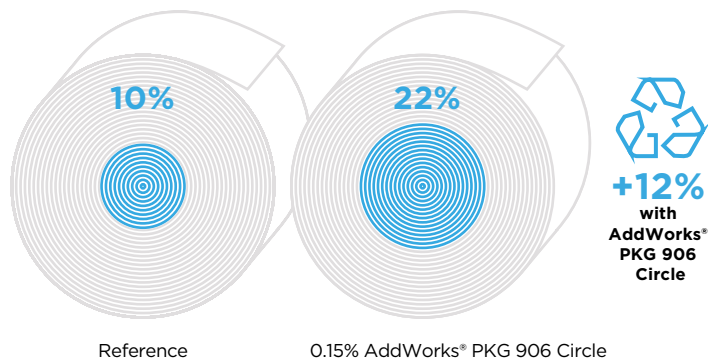
The newly developed AddWorks® PKG 906 Circle is a proprietary polymer stabilizer that makes it possible to significantly increase the recycled content of polyolefin films. It allows reintroduction of reground scrap at a rate of up to 20% and higher into virgin resins without any loss in quality or process efficiency, thus creating considerable benefits both in polypropylene (PP) and polyethylene (PE) film production.

The additive is particularly well-suited for bioriented polypropylene (BOPP) manufacturing but also applicable to cast and blown film processes. Consisting of free-flowing white granules that are free of carrier resin and food contact-approved, the product is easy to feed into existing processes and can be fully adapted to varying parameters, such as base resin quality, film type, recyclate quality and amount of recyclate added.

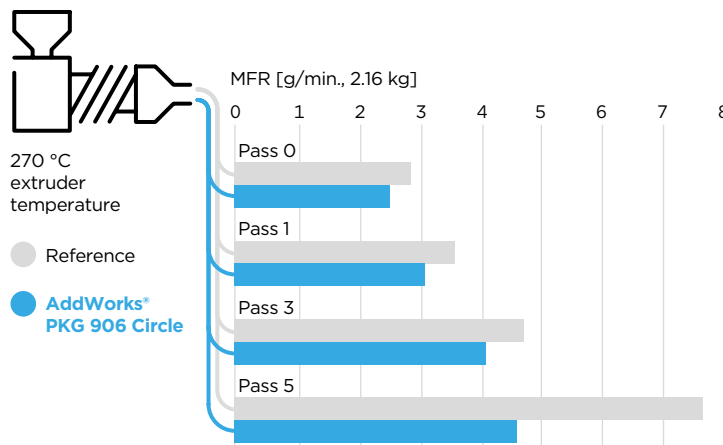
During production, AddWorks® PKG 906 Circle offers outstanding protection to the polyolefin resin, leading to optimum film quality without loss of transparency or additional yellowing. It significantly reduces the formation of gels and black spots and enables maximum line speeds without increased risk of film breakage.

SIGNIFICANTLY INCREASED RECYCLED CONTENT IN COMMERCIAL BOPP FILM PRODUCTION

AddWorks® PKG 906 Circle allows higher recycling rate of post manufacturing waste without loss in quality or process efficiency



MFR DEGRADATION AFTER MULTI-PASS EXPERIMENTS



BENEFITS

Enhancing the quality of polyolefin films containing up to 20% recycle in real-life case studies, and up to 30% in our tests, AddWorks® PKG 906 Circle has the potential to substantially improve the economic and ecological profile of packaging film production. Its cost- and waste-saving credentials are supported by solid performance data both in PP and PE matrices, as well as by a proven track record in the industry. Offering a bottom line friendly solution to reduce both plastic waste and the consumption of virgin resin, it is particularly suited for the sustainability needs of this particular industry.



SUMMARY

- **Cost savings potential through higher recycling rate of post manufacturing waste**
- **Outstanding polyolefin resin protection supporting excellent film quality**
- **Significant gel and black spot reduction**
- **Maintained high line speeds**
- **Reduced film breakage**
- **Suitable for most PO film processes**

For more information please contact additives4u@clariant.com

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