

## RECYCLOBYK 4379

### Heat stabilizer and processing aid formulation for polyolefin recyclates, especially for use in single-screw processes such as injection molding

The use of heat stabilizers in recycling enables high-quality and more durable end products to be produced from recycled materials. Stabilizing additives have therefore become essential in recycling processes. The recycling of polyolefins poses both material- and process-related challenges. On the one hand, the highly variable plastic compositions and contaminants require additives that work reliably in different material systems. On the other hand, single-screw extruders such as injection molding machines are often used, which have only limited dispersion capabilities. Powdered or compacted additives are therefore often insufficiently dispersed. This leads to limited effectiveness, for example with regard to thermal degradation, and results in an unevenly stabilized recyclate.

With RECYCLOBYK 4379, BYK has developed a high-performance heat stabilizer in concentrate form that, thanks to its LDPE carrier, enables uniform distribution even in single-screw processes. This effectively improves the thermal stability of the recyclate over the long term. The stabilized materials are thus also suitable for technically demanding applications and challenging environmental conditions. In addition, it acts as a processing aid by improving melt flow properties and neutralizing acids.

### Benefits

- Improved long-term thermal stability
  - Increased quality and wider range of applications for the recycled end product
- Excellent homogenization in the recycled material
  - Uniform distribution of the additive even with varying material compositions
- Optimized for single-screw processes
  - Ideal for injection molding machines and similar applications
- Easy and precise dosing
- Improved melt flow properties
- Neutralizes acids from previous processing and use of the recycled material



## Technical data

- Organic heat stabilizer composition
- MFR (190 °C, 2.16 kg): 100 g/10 min
- Color: off-white
- Delivery form: pellet

## Suitable for

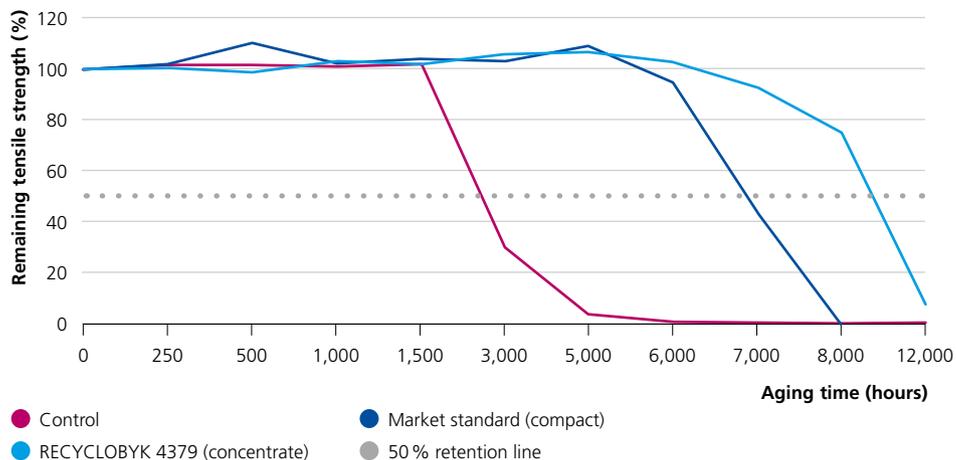
- Polyethylene (HDPE, LDPE)
- Polypropylene (PP), including if contaminated with aggressive substances (e.g. battery cases)
- Polyolefin mixtures (e.g. bottle fractions, household and industrial waste (post-consumer recycling, post-industrial recycling))

## Recommended use:

Extrusion and blow molding parts	●
Injection and compression molding parts	●
Thick films and sheets	●
Thin films	●

● especially recommended ○ recommended

## Excellent long-term thermal properties with RECYCLOBYK 4379 after processing in a single-screw extruder



**Test method:** tensile strength over 12,000 h at 120 °C

**Test system:** rHDPE flakes from bottles

**Additive dosage:** 0.5% active substance based on the total formulation

- Recycled HDPE flakes without heat stabilizers lose 50% of their original tensile strength after approx. 2,800 h at 120 °C
- By using RECYCLOBYK 4379 as a heat stabilizer, 75% of the original tensile strength can still be achieved after 8,000 h at 120 °C
- The improved dispersion of the additive concentrate in the single-screw extruder results in significantly higher heat aging resistance compared to the compacted additive

**RECYCLOBYK 4379**  
for long-term thermal stabilization of high-quality polyolefin recyclates



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