

Product information

Durethan® B40FBT

Thermal stabilizer masterbatch (polyamide ISO 1874-PA 6, FH, 22-030)

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1 General

Durethan B40FBT is a thermal stabilizer masterbatch based on PA 6 with a melting temperature of approx. 220 °C. It contains an organic antioxidant that is readily soluble in the polyamide, which enables it to be homogeneously dispersed. For this reason, the stabilizer is particularly suitable for processing of blown or cast films.

Durethan B40FBT is suitable as a thermal stabilizer masterbatch for both polyamide 6 and copolyamide extrusion products with lower processing temperatures.

Experience shows that adding 1 – 5% Durethan B40FBT is sufficient to effectively limit oxidative attack on the polyamide. In certain circumstances, however, it may be advisable to use a lower or higher concentration.

The exact amount of the product to be added depends on

- the duration of exposure to oxygen
- the temperature
- the required level of heat stabilization

and must therefore be defined for each specific application.

The following diagram compares the solution viscosity of 50-µm-thick unstabilized PA 6 films with the same films stabilized with Durethan B40FBT after exposure to hot air at 160 °C. After only 4 hours, the solution viscosity of the unstabilized PA has dropped to half its original value, while with the stabilized PA 6 there is no measured degradation under these conditions.

At 190 °C, the degradation of the unprotected polymer is considerably more pronounced. However, even at this very high temperature, the masterbatch significantly slows down the measured degradation rate.

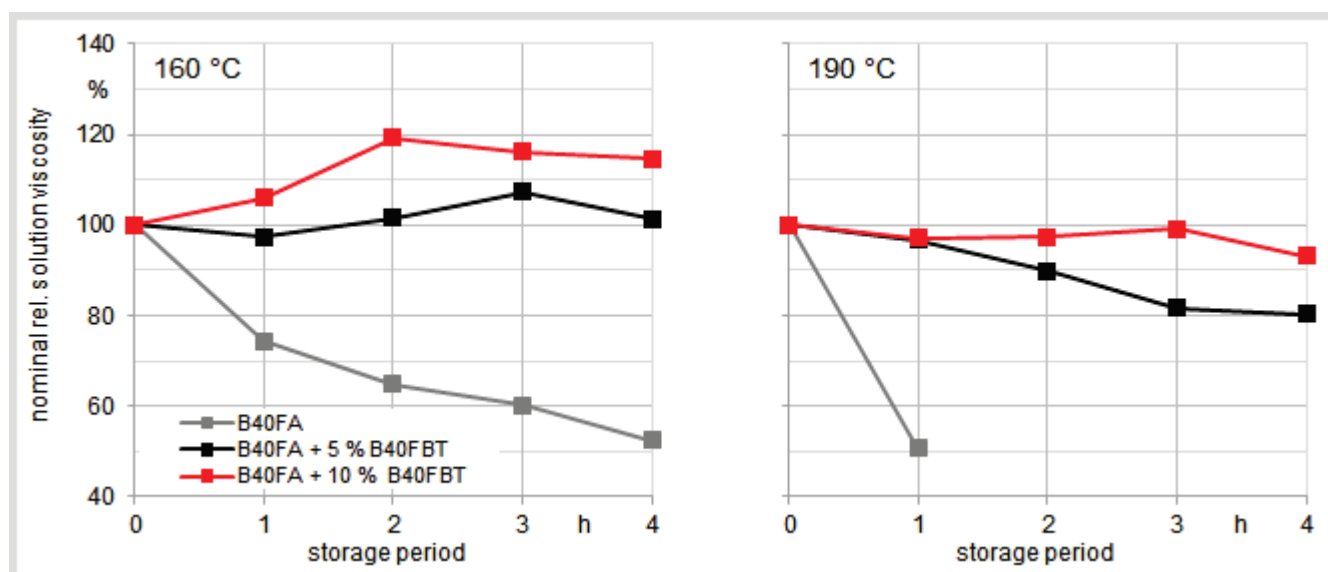


Fig. 1 Relative solution viscosity after heat exposure of Durethan B40FA (extruded film, approx. 50 µm thick)

2 Drying

Durethan B40FBT is delivered in 25 kg aluminum-lined bags or in octabins containing 1,000 kg. As delivered, the packaging is moisture-tight and guarantees a storage stability of up to 12 months (4 months with the octabins), as long as the containers are undamaged and have not been opened. In this case, drying prior to processing is not necessary.

Containers should be stored in a dry, frost-free location. Material stored at low temperatures, in unheated storage rooms, for example, should be pre-warmed to room temperature to prevent problems during processing caused by the condensation of moisture on the pellets.

3 Food contact

The masterbatch Durethan B40FBT complies with the European food contact regulations EU 10/2011 or EC 2023/2006

With regard to FDA regulation 21 CFR 178.2010 or Chinese regulation GB 9685:2016, the above mentioned antioxidant substance must not exceed a content of one percent by weight in any PA 6-based material which has food contact. We therefore suggest adjusting the dosage of the Durethan B40FBT masterbatch to a maximum of 8 percent by weight in the material that is intended for direct food contact. A final evaluation of compliance to the regulations can only be made by testing the end product.

This recommendation is not relevant for non-food applications.

A detailed food contact evaluation is available upon request.

4 Typical values

Durethan B40FBT

Thermal properties	Test conditions	Unit	Standard	
Melting temperature	10 K per min	°C	ISO 1346 C	~ 220
Other properties				
Density		kg/m ³	ISO 1183	1140
Bulk density		kg/m ³	ISO 60	~ 700
Viscosity of the carrier polymer		cm ³ /g	ISO 1628-1	~ 225

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