

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 polyamide, which enables it to be homogeneously dispersed. For this reason, the stabilizer is particularly suitable for processing of blown or cast film.

Durethan B40FBT is suitable for use 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 film with the same film 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.

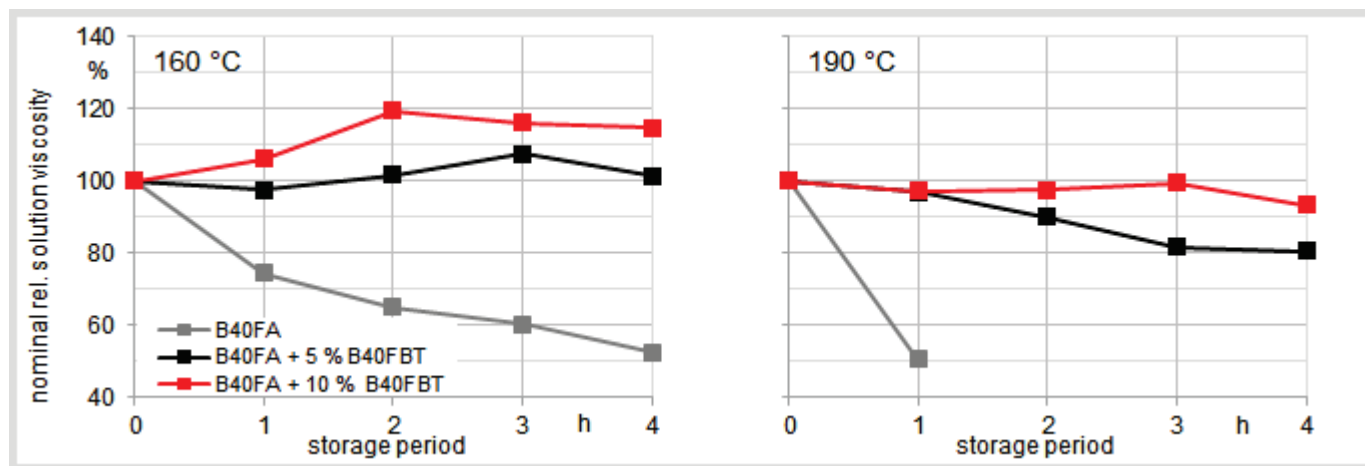


Fig. 1 Relative solution viscosity after heat exposure of Durethan B40FA (extruded film, approx. 50 µm thick)

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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The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee, and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

Typical Properties

Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

Health and Safety

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling LANXESS products mentioned in this publication. Before working with these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets (MSDS) and product labels. Consult your LANXESS Corporation representative or contact the Product Safety and Regulatory Affairs Department at LANXESS. For materials that are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.

Regulatory Compliance

Some of the end uses of the products described in this brochure must comply with applicable regulations, such as the FDA, NSF, USDA and CPSC. If you have any questions on the regulatory status of any LANXESS engineering thermoplastic, consult your LANXESS Corporation representative or contact the LANXESS Regulatory Affairs Manager.

Regrind

Where end-use requirements permit, regrind may be used with virgin material in quantities specified in individual product information bulletins, provided that the material is kept free of contamination and is properly dried (see maximum permissible quantities and drying conditions in product information bulletins). Any regrind used must be generated from properly molded/extruded parts, sprues, runners, trimmings and/or film. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Materials of this type should be discarded. Improperly mixed and/or dried regrind may diminish the desired properties of a particular LANXESS product. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history or offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties. The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

Note:

The information contained in this publication is current as of August, 2017. Please contact LANXESS Corporation to determine if this publication has been revised.