

Processing Guideline: *bFI* A 3745

Guidance for Testing and Serial Implementation of *bFI* Products

- The following recommendations are intended to support an efficient evaluation and successful implementation of our *bFI* products.
- Our team is available to provide technical support, either on-site or via a brief video call, whenever beneficial to the project.

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We **STRONGLY** recommend following these guidelines to ensure successful implementation.

1. MATERIAL CHECK / PREPARATION

Base Polymer [Test Phase only! See below.]

Can be used as received (non-dried) or after drying. **If dried:** Ensure the material is cooled **below 50 °C** before mixing with *bFI*.

Polytives *bFI* Products

Do **NOT** dry under any circumstances.

2. TEST PHASE: How to use *bFI* in...

MIXING & BLENDING

COMPOUNDING

CONVERTING (e. g. injection molding, extrusion)

Feeding via main feed zone

Do **NOT** use a side feeder

Ensure homogenous and stable dosing/mixing

do manual addition

If you

use dosing equipment

- Prepare mixtures 1, 2, 3, ...: Add *bFI* at **1%, 3%, 5%, 7%** (or similar levels) into the base polymer
- Mix in a **container or bag**, ensure good **homogeneity**
- Prepare minimum 3 mixtures

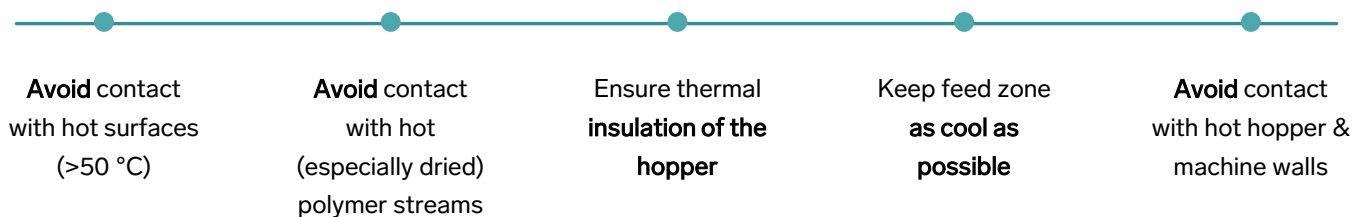
- Dose *bFI* at **1%, 3%, 5%, 7%** (or similar levels)
- Dose **decentralized** — NOT via central material supply / directly at the machine
- Run minimum 3 tests with different dosages of *bFI*

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2. TEST PHASE (continued from page 1)

!! THERMAL MANAGEMENT !!

Keep *bFI* below 50 °C at all times!



MONITORING & INSPECTION



Check regularly for:

- adhesion / sticking of *bFI* on surfaces / in the feed zone/hopper (see **THERMAL MANAGEMENT** above)
- blockages at the feed entry
- Inhomogeneous mixing

If you are compounding:

- Venting ports
- Venting zone(s): Where venting zones are present, it should be examined whether *bFI* is removed through the vent port or whether it accumulates and bonds in the vicinity of the vent, thereby restricting further material conveyance.



Monitor:

- stable pressure, stable torque
- If pressure or torque vary that's a signal that *bFI* is not homogeneously distributed in the process.



If needed: Reduce temperatures to stabilize the process (pressure / torque). Temperature reduction should be carried out stepwise, zone by zone along the process.

If pressure or torque vary that's a signal that *bFI* is not homogeneously distributed in the process.

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3. SERIAL PROCESSING CONDITIONS

COMPOUNDING OR CONVERTING (injection molding / extrusion) - **non-dried** polymers -


- Use standard dosing systems (e. g. masterbatch feeders)
- Maintain proper thermal management in the hopper and entry zone

COMPOUNDING OR CONVERTING (injection molding / extrusion) - **dried** polymers -

- Use separate dosing chambers -> followed by a mixing unit
- Separate polymer and additive streams -> dosing directly in feed zone
- Mixing unit is generally recommended

Reference systems: [Maguire Mixer](#), [Lybra LG](#), etc.

- **bFI** must be introduced directly into the feed zone (feed throat).
- Direct contact with hot or pre-heated polymer upstream of the feed zone must be strictly **avoided**.
- If you do compounding: Never feed **bFI** through side-feeder systems.
- **Never** feed or convey **bFI** through central material supply systems.
- **Never** route **bFI** through drying equipment.
- **Avoid** hot mixing units when considering premixing.

 **Important Handling Notes:** Always **dose bFI decentrally** — directly at the machine. **Avoid** dosing via central material handling systems — risk of unintended drying or overheating.

Use **short conveying paths** and **avoid sharp bends** or abrasive surfaces. Always **convey gently** and at **low speed** to protect the material, which is prone to breaking down into **powder under mechanical stress**.

 Adhere to the **thermal management** guidelines, described on **page 2**.

Legal notice

The foregoing information reflects our current level of knowledge. Our own tests and research confirm the steps described; nevertheless, we cannot account for all the specific circumstances of handling and manufacturing on the customer's side. The steps stated above are therefore provided without guarantee, and we give no warranty as to fitness for a particular purpose. The customer remains responsible for verifying the suitability of our products for their intended application. We accept no responsibility or liability for any use outside the field of recommended applications, including any resulting infringement of third-party intellectual property rights.