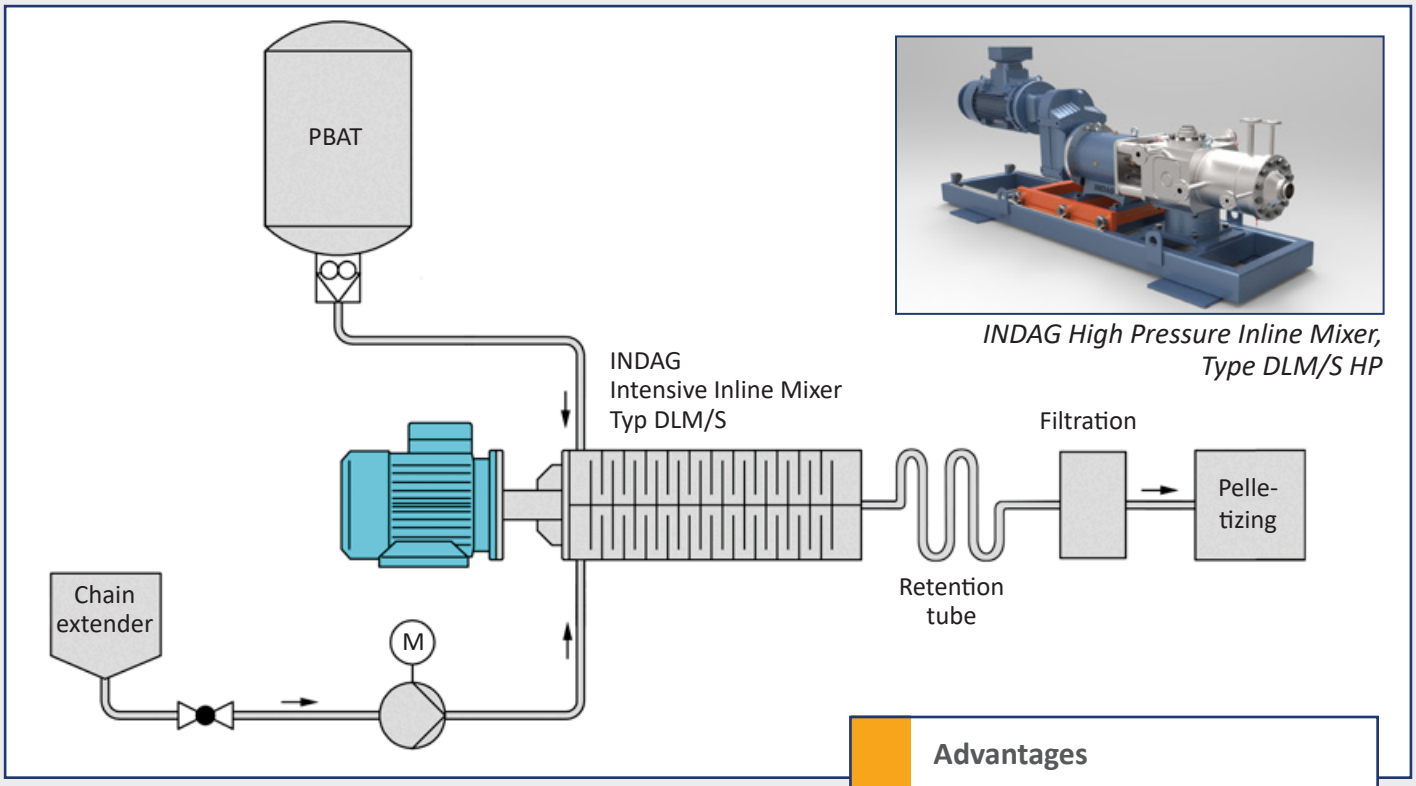
Case No. 507A
PBAT with Chain Extender







INDAG High Pressure Inline Mixer, Type DLM/S HP

Flow diagram example for mixing PBAT with chain extender/crosslinker

Process description

The low viscous PBAT from the reaction process is crosslinked by adding a chain extender to generate a higher melt viscosity. The higher viscosity facilitates the production of the resulting films.

After homogeneously mixing of the chain extender into PBAT, the mixture still has to react. Reaction usually takes place in a retention tube located after the mixer. Alternatively, INDAG mixers are used in a second mixing stage to generate residence time and to keep the mixture in motion during the reaction. The final reacted product is then granulated.

Indeed, mixing in fast-reacting additives such as crosslinkers or chain extenders is one of the most challenging tasks in mixing technology. The main indication for a good product is not to create gel-spots or gel-lumps in the film.

Advantages

- **Fast and homogeneous mixing avoids overreactions and gel-spots or lumps in the mixture.**
- **INDAG has developed the ideal dosing point to avoid side or over reactions.**
- **No blockage, no clogging, no pressure loss;**
- **Very good self-cleaning, CIP cleanable**
- **Dead space minimized design and electropolished surfaces minimize product build-up;**
- **Mixing in a closed system avoids air entrainment.**
- **Mixer design can be adapted so that the mixers can be retrofitted into any existing system.**
- **Very flexible. Due to the variable speed, our customer has direct influence on the entry of shear into the product. This ensures a wide range of volume flows and recipes in one mixer.**

Case No. 507A
PBAT with Chain Extender

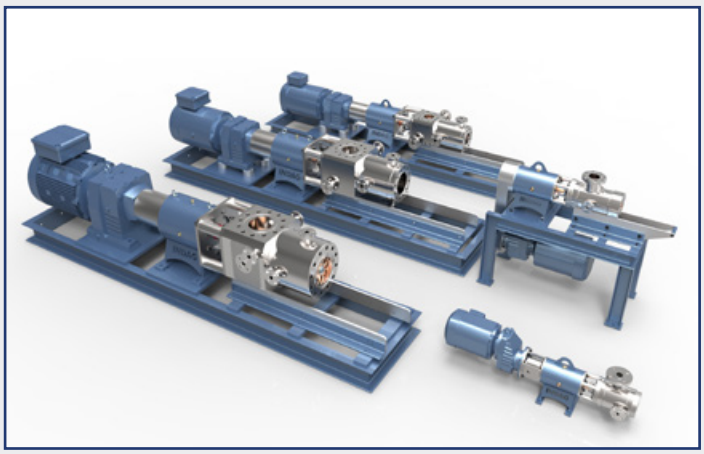




The INDAG Intensive Inline Mixer is specially designed for this application. The rotor-stator mixer produces an absolutely homogeneous result in a few seconds without creating gel-pockets or lumps. Alternative mixing technologies such as static mixers or extruders have not been able to establish themselves for such complex mixing tasks due to the long mixing time and the low flexibility and low efficiency.



View of the mixing elements of the INDAG Intensive Inline Mixer, Type DLM/S





INDAG High Pressure Inline Mixer, Type DLM/S HP for PBAT Production

Comparable applications with a similar processes and same mixer

- Polyuretanes with Isocyanate
- Adhesives with Crosslinker

NORTH AMERICAN PROCESS, INC.
d/b/a INFINI-MIX Process Solutions
811 East Maple Avenue
Mora, MN 55051
(855) PROCESS (776-2377)
Sales@naprocess.com
www.WeMixStuff.com

INDAG
Maschinenbau GmbH
The FlowMix®-Company