

Preparation of thermoplastics

5 Abstract

In the preparation of toughened thermoplastics or polymer blends containing toughened thermoplastics, the thermoplastics or the polymer blends comprising

- 10 A) from 5 to 95% by weight of at least one water-moist elastomer component A containing up to 60% by weight of residual water,
- B) from 5 to 95% by weight of at least one thermoplastic polymer
- 15 B,
- C) from 0 to 95% by weight of at least one further polymer C, and
- 20 d) from 0 to 70% by weight of additives D,

by mixing the elastomer component A with the thermoplastic polymer B and, if present, the further polymer C and, if present, the additives D in an extruder with mechanical dewatering of the

25 elastomer component A,

the components A, B, C and D are fed to an extruder which has at least two screws rotating in the same direction or in opposite directions and having a screw diameter D_{screw} , and, in the

30 conveying direction (downstream), the extruder being essentially composed of

- at least one metering section in which elastomer component A is fed to the extruder by a metering means,
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- at least one squeeze section which serves for dewatering the elastomer component A and contains at least one retarding element and in each case at least one associated dewatering orifice which is present upstream of the (first) retarding
- 40 element by a distance corresponding to at least one screw diameter D_{screw} ,
- at least one feed section in which the thermoplastic polymer B is introduced as a melt into the extruder,
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- at least one plastication section provided with mixing and/or kneading elements,
- 5 - at least one devolatilization section which is provided with at least one devolatilization orifice and in which the remaining water is removed as steam, and
- a discharge zone,

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some or all of the water emerging from the dewatering orifices is present in the liquid phase, and

the components C and/or D are fed to one or more of the stated
15 extruder sections together or separately from one another, either together with the components A and/or B or separately from A and B.

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