Claims

1. An apparatus for devolatilizing solvent-containing polycarbonate melts, characterized in that a downpipe devolatilizer is combined with a vented extruder, said downpipe devolatilizer being arranged directly above said extruder.

2. The apparatus as claimed in claim 1, characterized in that vapor lines are mounted on the downpipe devolatilizer.

3. The apparatus as claimed in claim 1 or 2, characterized in that the downpipe devolatilizer consists of a shell-and-tube heat exchanger having a plurality of pipes which are heated from the outside.

4. The apparatus as claimed in any of claims 1 to 3, characterized in that the downpipe devolatilizer is heated by means of condensing steam, by means of a condensing organic heat carrier or by means of a liquid organic heat carrier.

5. The apparatus as claimed in any of claims 1 to 4, characterized in that the combination of a downpipe devolatilizer and vented extruder is upstream of at least one further downpipe devolatilizer.

6. The apparatus as claimed in any of claims 1 to 5, characterized in that the vented extruder is of two- or four-shaft design.

7. The apparatus as claimed in any of claims 1 to 6, characterized in that the vented extruder is a closely intermeshing, corotatory twin-screw extruder.

8. The apparatus as claimed in any of claims 1 to 7, characterized in that the extruder has several devolatilizing zones in conveying direction.

9. A process for devolatilizing polycarbonate solutions as claimed in any of claims 1 to 8, characterized in that a polycarbonate solution comprising at least one organic solvent and at least one polycarbonate is prepared by the interfacial process and, in a second step, this polycarbonate solution is supplied to a downpipe devolatilizer in combination with a vented extruder, said downpipe devolatilizer being arranged directly above the extruder such that the polymer solution falls directly into the vented extruder.

10. The process as claimed in claim 9, characterized in that the solvent-containing vapors formed in the downpipe devolatilizer are removed directly from the housing of the flash

devolatilizer by means of vapor lines.

11. The process as claimed in claim 9 or 10, characterized in that inert gases as entraining agents are injected into and mixed into the polymer melt stream upstream of the downpipe devolatilizer.

12. The process as claimed in any of claims 9 to 11, characterized in that inert gas is injected as entraining agent in one or more housings of the vented extruder.

13. The process as claimed in any of claims 9 to 12, characterized in that the input concentration of the polycarbonate into the downpipe devolatilizer is between 60% by weight and 95% by weight.

14. The process as claimed in any of claims 9 to 13, characterized in that the polycarbonates obtained have a residual solvent content of 20 ppm to 1000 ppm.

Claims

1. An apparatus for devolatilizing solvent-containing polycarbonate melts, the apparatus comprising:

a downpipe devolatilizer combined with

a vented extruder, said downpipe devolatilizer being arranged directly above said extruder.

2. The apparatus as claimed in claim 1, further comprising vapor lines mounted on the downpipe devolatilizer.

3. The apparatus as claimed in claim 1, wherein the downpipe devolatilizer includes a shell-and-tube heat exchanger having a plurality of pipes which are heated from the outside.

4. The apparatus as claimed in claim 1, wherein the downpipe devolatilizer is heated by means of condensing steam, by means of a condensing organic heat carrier or by means of a liquid organic heat carrier.

5. The apparatus as claimed in claim 1, wherein the combination of the downpipe devolatilizer and the vented extruder is upstream of at least one further downpipe devolatilizer.

6. The apparatus as claimed in claim 1, wherein the vented extruder is of two- or four-shaft design.

7. The apparatus as claimed in claim 1, wherein the vented extruder comprises a closely intermeshing, corotatory twin-screw extruder.

8. The apparatus as claimed in claim 1, wherein the extruder comprises a plurality of devolatilizing zones in a conveying direction.

9. A process for devolatilizing polycarbonate solutions as claimed in claim 1, the process comprising:

preparing a polycarbonate solution comprising at least one organic solvent and at least one polycarbonate by the interfacial process; and

supplying the prepared polycarbonate solution to a downpipe devolatilizer in combination with a vented extruder, said downpipe devolatilizer being arranged directly above the extruder such

that the polymer solution falls directly into the vented extruder.

10. The process as claimed in claim 9, further comprising removing solvent-containing vapors, formed in the downpipe devolatilizer, directly from the housing of the flash devolatilizer by means of vapor lines.

11. The process as claimed in claim 9, further comprising injecting inert gases as entraining agents into and mixed into a polymer melt stream upstream of the downpipe devolatilizer.

12. The process as claimed in claim 11, wherein the inert gas is injected as entraining agent in one or more housings of the vented extruder.

13. The process as claimed in claim 9, wherein the input concentration of the polycarbonate into the downpipe devolatilizer is between 60% by weight and 95% by weight.

14. The process as claimed in claim 9, wherein the polycarbonates obtained have a residual solvent content of 20 ppm to 1000 ppm.