CLAIMS

1. A process for the preparation of polyamide granules, comprising the following stages:
   a) extruding the polyamide in the molten state,
   b) cooling the material obtained using a water-comprising cooling liquid,
   c) cutting the material into the form of granules,
   d) separating the cooling liquid and the material,
   e) cooling the granules separated from the cooling liquid until a mean temperature of the granules of less than or equal to 55°C is achieved,
   - the cutting stage c) being carried out during stage b), after stage b) and before the separation stage d), or after the separation stage d),
   - the duration of the contact between the extruded material and the cooling liquid being less than or equal to 10 seconds, and
   - the duration of stage e) being less than or equal to 10 minutes.

2. The process as claimed in claim 1, characterized in that the cooling liquid is water.

3. The process as claimed in either of claims 1 and 2, characterized in that the mean temperature of the granules before stage e) is between 60 and 150°C.

4. The process as claimed in any one of the preceding claims, characterized in that stage e) is carried out by treatment of the granules with a gas at a temperature of between 0 and 40°C.

5. The process as claimed in claim 4, characterized in that the gas of stage e) is air, preferably ambient air.

6. The process as claimed in claim 4 or 5, characterized in that stage e) is carried out using a fluidized bed.

7. The process as claimed in claim 4 or 5, characterized in that stage e) is carried out using a conveyor equipped with a system for direct cooling by injection of air.

8. The process as claimed in any one of claims 1 to 3, characterized in that stage e) is carried out by bringing the granules into contact with a surface, the temperature of which is between 5 and 35°C.

9. The process as claimed in claim 8, in which the moisture which exits from the granules to go into the gas phase is eliminated, for example by natural convection.

10. The process as claimed in either one of claims 8 and 9, characterized in that stage e) is carried out using a conveyor equipped with a system for indirect cooling by a jacket in which a cooling fluid circulates at a temperature of between 5 and 35°C.

11. The process as claimed in any one of the preceding claims, characterized in that it does not comprise a stage of drying the polyamide granules in an inert gas environment.

12. The use of the process as defined in one of claims 1 to 11 for the preparation of polyamide granules having a moisture content of between 0.1% and 0.4% by weight of water (with respect to the weight of granules).

13. The use as claimed in claim 12 for the preparation of polyamide granules having a mean weight of granules of between 1.0 and 5.0 g per 100 granules, preferably 1.5 and 4.0 g per 100 granules.

CLAIMS

1. A process for the preparation of polyamide granules, comprising the following stages:
   a) extruding the polyamide in the molten state,
   b) cooling the material obtained using a water-comprising cooling liquid at a temperature of between 10 and 80 °C,
   c) cutting the material into the form of granules,
   d) separating the cooling liquid and the material,
   e) cooling the granules separated from the cooling liquid until a mean temperature of the granules of less than or equal to 55°C is achieved,
   - the cutting stage c) being carried out during stage b), after stage b) and before the separation stage d), or after the separation stage d),
   - the duration of the contact between the extruded material and the cooling liquid being less than or equal to 10 seconds, and
   - the duration of stage e) being less than or equal to 10 minutes.

2. The process as claimed in claim 1, characterized in that the cooling liquid is water.

3. The process as claimed in claim 1 or claim 2, characterized in that the mean temperature of the granules before stage e) is between 60 and 150°C.

4. The process as claimed in any one of the preceding claims, characterized in that stage e) is carried out by treatment of the granules with a gas at a temperature of between 0 and 40°C.

5. The process as claimed in claim 4, characterized in that the gas of stage e) is air, preferably ambient air.

6. The process as claimed in claim 4 or claim 5, characterized in that stage e) is carried out using a fluidized bed.

7. The process as claimed in claim 4 or 5, characterized in that stage e) is carried out using a conveyor equipped with a system for direct cooling by injection of air.

8. The process as claimed in any one of claims 1 to 3, characterized in that stage e) is carried out by bringing the granules into contact with a surface, the temperature of which is between 5 and 35°C.

9. The process as claimed in claim 8, in which the moisture which exits from the granules to go into the gas phase is eliminated, for example by natural convection.

10. The process as claimed in claim 8 or claim 9, characterized in that stage e) is carried out using a conveyor equipped with a system for indirect cooling by a jacket in which a cooling fluid circulates at a temperature of between 5 and 35°C.

11. The process as claimed in any one of the preceding claims, characterized in that it does not comprise a stage of drying the polyamide granules in an inert gas environment.

12. The use of the process as claimed in any one of the preceding claims, for the preparation of polyamide granules having a moisture content in the range of 0.24% and 0.40% by weight of water (with respect to the weight of granules).

13. The use as claimed in claim 12, for the preparation of polyamide granules having a mean weight of granules of between 1.0 and 5.0 g per 100 granules, preferably 1.5 and 4.0 g per 100 granules.