CLAIMS

1. A propylene copolymer, wherein said propylene copolymer has

(a) a comonomer content in the range of 4.4 to 7.3 mol.-%, wherein the comonomer is ethylene and

(b) a melt flow rate MFR_2 (230 °C) measured according to ISO 1133 in the range of at least 10 to 100 g/l0min,

and wherein said propylene copolymer comprises,

(i) a first propylene copolymer fraction (R-PP1) having an ethylene content in the range of 1.5 to 3.0 mol.-%,

(ii) a second propylene copolymer fraction (R-PP2) having an ethylene content in the range of 7.0 to 10.5 mol.-%, and

(iii) a nucleating agent; wherein

the ethylene content [in mol.-%] of the second propylene copolymer fraction (R-PP2) is higher than the ethylene content [in mol.-%] of the first propylene copolymer fraction (R-PP1).

2. Propylene copolymer according to claim 1, wherein

(a) inequation (I) is fulfilled

$$C(PP) - C(PP1) \geq 1.0 \quad (I)$$

wherein

C(PP1) is the ethylene content [in mol.-%] of the first propylene copolymer fraction (R-PP1)

C(PP) is the ethylene content [in mol.-%] of the total propylene copolymer, and/or

(b) inequation (II) is fulfilled

$$C(PP2) - C(PP1) \geq 3.0 \quad (II)$$

wherein

C(PP1) is the ethylene content [in mol.-%] of the first propylene copolymer fraction (R-PP1)

C(PP2) is the ethylene content [in mol.-%] of the second propylene copolymer fraction (R-PP2).

3. Propylene copolymer according to any one of the preceding claims, wherein

(a) the weight ratio between the first propylene copolymer fraction (R-PP1) and the second propylene copolymer fraction (R-PP2) is from 40/60 to 54/46; and/or

(b) the propylene copolymer comprises at least 90 wt.-%, based on the total amount of the propylene copolymer, of the first propylene copolymer fraction (R-PP1) and the second propylene copolymer fraction (R-PP2) together.

4. Propylene copolymer according to any one of the preceding claims, wherein said propylene copolymer has

(a) a melting temperature of more than 148.0 °C;

and/or

(b) a crystallization temperature of more than 119.0 °C.

5. Propylene copolymer according to any one of the preceding claims, wherein the nucleating agent is a polymeric nucleating agent.

6. Propylene copolymer according to any one of the preceding claims, wherein the amount of nucleating agent, based on the total weight of the propylene copolymer, is up to 5.0 wt.-%.

7. Propylene copolymer according to any one of the preceding claims, wherein said propylene copolymer

(a) is non- visbroken; and/or

(b) does not contain peroxide.

8. Propylene copolymer according to any one of the preceding claims, wherein said propylene copolymer has

(a) an ethylene content in the range of 4.5 to 7.0 mol.-%;

and/or

(b) a melt flow rate MFR_2 (230 °C) measured according to ISO 1133 in the range of 30 to 100 g/10min.

9. Propylene copolymer according to any one of the preceding claims, wherein said propylene copolymer is produced in a sequential polymerization process comprising a first a reactor (R1) and a second reactor (R2), wherein further the first propylene copolymer fraction (R-PP1) is produced in the first reactor (R1) and the second propylene copolymer fraction (R-PP2) is produced in the second reactor (R2).

10. Molded article comprising a propylene copolymer according to any of the preceding claims.

11. Process for producing a propylene copolymer according to any one of the preceding claims 1 to 8, wherein the process is a sequential polymerization process comprising the steps of

(a) polymerizing propylene and ethylene in a first reactor (R1) obtaining thereby the first propylene copolymer fraction (R-PP1)

(b) transferring the first propylene copolymer fraction (R-PP1) into a second reactor (R2)

(c) polymerizing, in the presence of the first propylene copolymer fraction (R-PP1), propylene and ethylene in said second reactor (R2) obtaining a second propylene copolymer fraction (R-PP2), wherein the mixture of the first propylene copolymer fraction (R-PP1) and second propylene copolymer fraction (R-PP2) forms the propylene copolymer.

12. Process according to claim 11, wherein the polymerization in the first reactor (R1) and second reactor (2) takes place in the presence of a Ziegler-Natta catalyst.