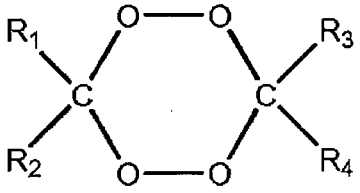
Claims

1. Masterbatch comprising a dimeric and/or trimeric cyclic ketone peroxide dispersed in a polymeric matrix with a porosity, expressed as percentage of voids on the volume of the matrix, of 0.1 -80 vol%, wherein said masterbatch comprises, per 100 g of polymeric matrix, 1 -30 g dimeric and/or trimeric cyclic ketone peroxide and less than 0.20 g saturated hydrocarbons with 17-51 carbon atoms.

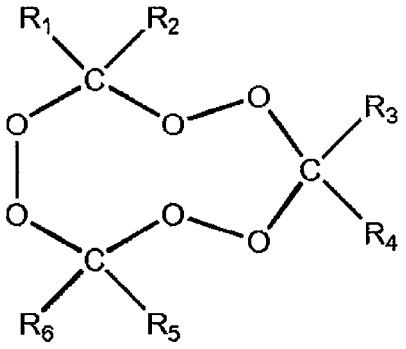
2. Masterbatch according to claim 1 comprising, per 100 g of a polymeric matrix, less than 0.15 g saturated hydrocarbons with 17-51 carbon atoms.

3. Masterbatch according to claim 2 comprising, per 100 g of a polymeric matrix, less than 0.10 g saturated hydrocarbons with 17-51 carbon atoms.

4. Masterbatch according to any one of claims 1 to 3 wherein the dimeric cyclic ketone peroxide has a structure according to formula (I) and the trimeric cyclic ketone peroxide has a structure according to formula (II):



(I)



(II)

wherein R^1-R^6 are independently selected from the group consisting of hydrogen, C_1 -C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} aralkyl, and C_7- C_{20} alkaryl, which groups may include linear or branched alkyl moieties; and each of R^1-R^6 may optionally be substituted with one or more groups selected from hydroxy, alkoxy, linear or branched alkyl, aryloxy, ester, carboxy, nitrile, and amido.

5. Masterbatch according to claim 4 wherein the cyclic ketone peroxide is 3,6,9-triethyl-3,6,9-trimethyl-1,4,7-triperoxonane.

6. Masterbatch according to any one of claims 1 to 5 wherein the resulting masterbatch comprises 4-18 g of dimeric and/or trimeric cyclic ketone peroxide per 100 g of polymeric matrix.

7. Masterbatch according to any one of claims 1 to 6 wherein the polymeric matrix has a porosity of 10-60 vol%.

8. Masterbatch according to any one of claims 1 to 7 wherein the polymeric matrix consists

for at least 50 wt% of polypropylene, polyethylene, and/or ethylene vinyl acetate polymer.

9. Masterbatch according to any one of claims 1 to 8 wherein the formulation comprises one or more additional peroxides or hydroperoxides.

10. Process for the preparation of a masterbatch according to claims 1 to 9, comprising the steps of
(i) providing a polymeric matrix with a porosity, expressed as percentage of voids on the volume of the matrix, of 0.1 -80 vol% and
(ii)impregnating said polymeric matrix with a formulation comprising dimeric and/or trimeric cyclic ketone peroxide and one or more solvents.

11. Use of a masterbatch according to claims 1 to 9 for the modification of polymers.

12. Use according to claim 11 wherein the modification involves cracking of polypropylene homopolymers and/or copolymers of propylene and ethylene.

13. Use according to claim 11 wherein the modification involves the introduction of long chain branches or crosslinking, of polyethylenes.