Claims

1. A process for reducing the paraffin content of mineral oil compositions, by providing a mineral oil composition with a dewaxing aid, cooling to form a paraffin precipitate and at least partly removing the paraffin precipitate formed, characterized in that the dewaxing aid used is a copolymer mixture comprising at least four copolymers, the copolymers differing in the composition of the repeat units and the copolymers containing repeat units derived from alkyl methacrylates having 16 to 18 carbon atoms, and repeat units derived from alkyl acrylates having 19 to 22 carbon atoms and said copolymer mixture is prepared by copolymerization of a monomer mixture consisting of at least one acrylate and at least one methacrylate in one polymerization step.

2. The process as claimed in claim 1, characterized in that the copolymers of the copolymer mixture have at least 70% by weight of repeat units derived from alkyl (meth)acrylates having 12 to 40 carbon atoms in the alkyl radical.

3. The process as claimed in claim 1 or 2, characterized in that the copolymer mixture comprises at least five copolymers which differ in the composition of the repeat units.

4. The process as claimed in at least one of the preceding claims, characterized in that at least three of the copolymers comprise at least two different repeat units derived from alkyl (meth)acrylates having 12 to 40 carbon atoms in the alkyl radical, at least one first copolymer having a higher proportion of repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical than at least two of the other copolymers; at least one second copolymer having a higher proportion of repeat units derived from alkyl (meth)acrylates having 12 to 18 carbon atoms in the alkyl radical than at least two of the other copolymers; and at least one third copolymer having repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical and having repeat units derived from alkyl (meth)acrylates having 12 to 18 carbon atoms in the alkyl radical, the proportion in the third copolymer of repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical being lower than the proportion of these repeat units in the first copolymer, and the proportion in the third copolymer of repeat units derived

from alkyl (meth)acrylates having 12 to 18 carbon atoms in the alkyl radical being lower than the proportion of these repeat units in the second copolymer.

5. The process as claimed in at least one of the preceding claims, characterized in that the proportion of any copolymer in the copolymer mixture is not more than 50% by weight.

6. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture has a crystallization transition in the range from 30°C to 50°C.

7. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture has a crystallization transition whose half-height width is at least 8°C.

~~8. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture comprises at least four copolymers and the copolymers each have repeat units derived from alkyl acrylates and repeat units derived from alkyl methacrylates.~~

~~9. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture comprises at least four copolymers containing repeat units derived from alkyl methacrylates having 16 to 18 carbon atoms, and repeat units derived from alkyl acrylates having 19 to 22 carbon atoms.~~

~~10.~~8. The process as claimed in ~~claim 9~~at least one of the preceding claims, characterized in that a copolymer having repeat units derived from alkyl methacrylates having 16 to 18 carbon atoms and repeat units derived from alkyl acrylates having 19 to 22 carbon atoms has at least 30% by weight of repeat units derived from alkyl acrylates having 19 to 22 carbon atoms.

~~11.~~9. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture comprises at least four copolymers containing repeat units derived from alkyl acrylates having 16 to 18 carbon atoms and repeat units derived from alkyl methacrylates having 19 to 22 carbon atoms.

~~12.~~10. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture has a weight-average molecular weight in the range from 200 000 to 500 000 g/mol.

~~13.~~11. The process as claimed in at least one of the preceding claims, characterized in that the process is performed in the presence of a solvent.

~~14. The process as claimed in at least one of the preceding claims, characterized in that the copolymer mixture is prepared by copolymerization of a monomer mixture in one polymerization step.~~

~~15.~~12. A dewaxing aid for reduction of the paraffin content of mineral oil compositions comprising copolymers having repeat units derived from alkyl (meth)acrylates, characterized in that the dewaxing aid comprises a copolymer mixture having at least ~~three~~ four copolymers, the copolymers differing in the composition of the repeat units and the copolymers containing repeat units derived from alkyl methacrylates having 16 to 18 carbon atoms, and repeat units derived from alkyl acrylates having 19 to 22 carbon atoms and said copolymer mixture is prepared by copolymerization of a monomer mixture consisting of at least one acrylate and at least one methacrylate in one polymerization step~~, and at least one first copolymer having a higher proportion of repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical than at least two of the further copolymers; at least one second copolymer having a higher proportion of repeat units derived from alkyl (meth)acrylates having 16 to 18 carbon atoms in the alkyl radical than at least two of the further copolymers; and at least one third copolymer having repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical and having repeat units derived from alkyl (meth)acrylates having 16 to 18 carbon atoms in the alkyl radical, the proportion in the third copolymer of repeat units derived from alkyl (meth)acrylates having 19 to 22 carbon atoms in the alkyl radical being lower than the proportion of these repeat units in the first copolymer, and the proportion in the third copolymer of repeat units derived~~

~~from alkyl (meth)acrylates having 16 to 18 carbon atoms in the alkyl radical being lower than the proportion of these repeat units in the second copolymer~~.

~~16.~~13. The dewaxing aid as claimed in claim ~~15~~12, characterized in that the copolymer mixture has a crystallization transition which has a half-height width of at least 8°C.