



CLAIMS

1. Process for the production of powders which are superabsorbent for water and aqueous liquids and consist of partially neutralized polyacrylic acid having a very low free monomer content, which process comprises at least the sequences of:
- a) preparation of the solvent phase,
 - b) preparation of the aqueous phase of acrylic acid monomer (charge I),
 - 10 c) bringing the monomer into inverse suspension, and polymerization I,
 - d) preparation of the aqueous phase of acrylic acid monomer (charge II),
 - e) absorption of charge II and polymerization
 - 15 II and
 - f) isolation of the polymer,
- characterized in that the sequence of isolation of the polymer comprises at least one azeotropic dehydration operation and one drying operation and that aqueous hydrogen peroxide is introduced onto or into the polymer between the said dehydration and drying operations.
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2. Process for the production of superabsorbent powders according to Claim 1, characterized in that it comprises [sic] and that the charge I of monomeric acrylic acid is neutralized to a degree greater than that of the final polyacrylic polymer, whilst the charge II of monomeric acrylic acid is neutralized to a
- 25



lower degree.

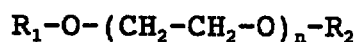
3. Process according to Claim 2, characterized in that the charges of monomeric acrylic acid in phases b and d are prepared in equal amounts, that the degree of neutralization of the charge I is between 90 and 100 % and that the degree of neutralization of the charge II is between 60 and 50 %.

4. Process according to one or other of Claims 1 to 3, characterized in that the monomeric acrylic acid of the first charge is brought into inverse suspension with the aid of surfactants of the block copolymer type, which result from the reaction of epoxyalkanes with polyalkylene glycols or with their monoesters

5. Process according to Claim 4, characterized in that the surfactant is a polyethylene glycol/dodecyl glycol block copolymer.

6. Process according to Claims 4 or 5, characterized in that the adsorption of the second monomer charge is carried out at a temperature close to 35°C.

7. Process according to one or other of Claims 1 to 3, characterized in that the monomeric acrylic acid of charge I is brought into inverse suspension with the aid of a polymerizable emulsifier corresponding to the general formula:



- where R_1 is a hydrocarbon chain having at least 9 carbon atoms,



- where R_2 is a polymerizable group, an acryloyl, methacryloyl or maleoyl residue
- and where the degree of condensation n in respect of ethylene oxide is between 30 and 70.

5 8. Process according to Claim 7, characterized in that the surfactant is the maleic ester of nonylphenol oxyethylenated with 50 molecules of ethylene oxide, and that it is dissolved in the aqueous phase.

10 9. Process according to Claims 6 or 7, characterized in that the absorption of the second monomer charge is carried out at a temperature higher than or equal to 45°C.

15 10. Polyacrylic acid powder neutralized to a degree of between 65 and 85 %, with a mean diameter of between 100 and 500 μm , and with an undersize fraction of less than 0.5 % at 100 μm , characterized in that it consists of spheroidal particles with an irregular surface and that its residual monomer content is at
20 most 50 ppm.