# Claims

1. Process for the production of alkyl hydroperoxide by oxidation of a saturated hydrocarbon using molecular oxygen, comprising the following successive steps:
   - oxidation of the hydrocarbon using oxygen,
   - separation of at least a part of the nonoxidized hydrocarbon from the reaction medium and recycling of said nonoxidized hydrocarbon to the oxidation step,
   - washing, with water, of the oxidation reaction medium recovered after the separation of at least a part of the nonoxidized saturated hydrocarbon, in order to extract the water-soluble oxidized by-products and to recover an organic phase comprising the alkyl hydroperoxide, the nonoxidized hydrocarbon and water-insoluble oxidized products, characterized in that the washing step is carried out in a counter-current liquid/liquid extraction column, with the washing water being fed at the top of the column and the reaction medium to be washed, containing the alkyl hydroperoxide, being fed at an intermediate position of the column, and in that the saturated hydrocarbon to be oxidized is fed into the washing column at a level below that at which the medium to be washed is fed.

2. Process according to Claim 1, characterized in that the hydrocarbon is selected from the group consisting of cyclohexane, cyclooctane, cyclododecane and decalin.

3. Process according to Claim 1 or 2, characterized in that the alkyl hydroperoxide is cyclohexyl hydroperoxide, the saturated hydrocarbon being cyclohexane.

4. Process according to one of Claims 1 to 3, characterized in that the washing is carried out at a temperature of from 80 to 100°C.

# Claims

1. Process for the production of alkyl hydroperoxide by oxidation of a saturated hydrocarbon using molecular oxygen, comprising the following successive steps:
   - oxidation of the hydrocarbon using oxygen,
   - separation of at least a part of the nonoxidized hydrocarbon from the reaction medium and recycling of said nonoxidized hydrocarbon to the oxidation step,
   - washing, with water, of the oxidation reaction medium recovered after the separation of at least a part of the nonoxidized saturated hydrocarbon, in order to extract the water-soluble oxidized by-products and to recover an organic phase comprising the alkyl hydroperoxide, the nonoxidized hydrocarbon and water-insoluble oxidized products, characterized in that the washing step is carried out in a counter-current liquid/liquid extraction column, with the washing water being fed at the top of the column and the reaction medium to be washed, containing the alkyl hydroperoxide, being fed at an intermediate position of the column, and in that the saturated hydrocarbon to be oxidized is fed into the washing column at a level below that at which the medium to be washed is fed,

     the process being further characterized in that the hydrocarbon is cyclohexane and in that the hydrocarbon fed in the washing operation is a hydrocarbon which does not originate from a recycling loop of the oxidation process.

2. Process according to Claim 1, characterized in that the washing is carried out at a temperature of from 80 to 100°C.