CLAIMS

1. Spheroidal alumina particles comprising a nitrogen adsorption isotherm volume, termed V_{meso}, which is representative of the mesoporous volume, which is in the range 0.65 to 0.85 mL/g and a volume of pores with a diameter of less than 7 µm, termed $V_{meso+macro}$, measured by mercury porosimetry, which is in the range 0.65 to 0.85 mL/g and for which the ratio $Q=[(V_{meso+macro}-V_{meso})/(V_{meso+macro})]$ is less than 10%, said particles comprising a mean diameter in the range 1.2 to 3 mm, a BET specific surface area in the range 150 to 300 m^2/g and a settled packing density in the range 0.5 to 0.6 g/mL.

2. Spheroidal alumina particles according to claim 1, in which the average crush strength is at least 2.5 daN.

3. A catalyst comprising a support formed from particles according to claim 1 and one or more metals of group VIII of the periodic classification of elements.

4. The catalyst according to claim 3, further comprising one or more elements of groups IIIA, IVA, VA of the periodic classification of elements or the lanthanides.

5. The catalyst according to claim 3, further comprising an element selected from the group consisting of fluorine, chlorine, bromine and iodine.

6. The catalyst according to claim 5, comprising platinum, tin and chlorine.

7. A process for the production of the spheroidal alumina particles of claim 1 comprising:

    a) preparing an aqueous suspension comprising water, an acid and at least one boehmite powder for which the ratio of the crystallite dimensions in the [020] and [120] directions obtained using the Scherrer X-ray diffraction formula is in the range 0.7 to 1;

    b) adding a pore-forming agent, a surfactant and optionally water, or an emulsion comprising at least one pore-forming agent, a surfactant and water to the suspension of step a) to obtain a suspension;

    c) mixing the suspension obtained in step b) to obtain a suspension;

d) obtaining spheroidal particles by the oil-drop method of the suspension obtained in step c);

e) drying of the spheroidal particles obtained in step d) to produce dried particles;

f) calcining the dried particles.

8. The process according to claim 7, in which the aqueous suspension of step a) further comprises an alumina charge or alumina precursor constituted by particles having a median diameter by volume of 50 μm or less.

9. The process according to claim 8, in which the alumina charge is selected from the group consisting of hydragillite, bayerite, amorphous gels and transition aluminas comprising at least one rho, chi, eta, gamma, kappa, theta, delta or alpha phase.

10. The process according to claim 8, in which the weight ratio of the alumina charge to the total weight of Al_2O_3 of the suspension is 30% or less.

11. The process according to claim 7, in which the pore-forming agent is an oil cut having a boiling point in the range 220° C. to 350° C.

12. The process according to claim 7, in which the quantity of pore-forming agent, expressed as the ratio of the pore-forming agent to the total mass of water engaged in the suspension obtained in step b), is in the range 0.5% to 8%.

13. The process according to claim 7, in which the suspension in a) further comprises a salt of one or more elements of groups IIIA, IVA, VA of the periodic classification of elements or the lanthanides of the periodic classification of the elements.

14. The process according to claim 7, in which step d) obtaining for spheroidal particles comprises:

i) transferring the suspension obtained in b) to a dropping pot equipped with nozzles having orifices calibrated to form droplets;

ii) dropping the suspension under gravity in a column containing an organic phase which is immiscible with water in an upper portion and a basic aqueous phase in a

lower portion in order to harvest the spheroidal particles at an outlet from the basic aqueous phase.

15. A transformation reaction process that is catalytic reforming, steam reforming, cracking, hydrocracking, hydrogenation, dehydrogenation or dehydrocyclization of hydrocarbons or organic compounds, comprising performing said transformation reaction process by subjecting a feed to a catalyst according to claim 3.