CLAIMS

1. Process for limiting the emissions of gases from a porous material in the form of particles comprising a porous inorganic support and at least 0.1% by weight of one or more compounds chosen from organic compounds, halogen compounds, boron compounds and phosphorus compounds, in which the particles are placed in motion within a stream of gas having a temperature greater than 25°C traversing them, and a liquid composition containing one or more film-forming polymer(s) is sprayed over the moving particles by means of a twin-fluid atomization nozzle, in which the liquid composition is mixed with a pressurized gas, with a relative atomization pressure of greater than or equal to 0.7×10^5 Pa, until a protective layer containing the film-forming polymer(s) and exhibiting a mean thickness of less than or equal to 20 μm is obtained on the surface of the said particles.

2. Process according to the preceding claim, characterized in that the relative atomization pressure ranges from 0.7×10^5 to 4×10^5 Pa, more preferably from 1.2×10^5 to 3×10^5 Pa, more preferably still from 1.5×10^5 to 2.5×10^5 Pa, and better still from 1.7×10^5 to 2.3×10^5 Pa.

3. Process according to either of the preceding claims, characterized in that the liquid composition is a solution or a dispersion of the film-forming polymer(s) in a solvent and preferably contains from 0.1 to 50% by weight of film-forming polymer, more preferably from 0.5 to 25% by weight and more preferably still from 1 to 10% by weight of film-forming polymer, with respect to the total weight of the composition.

4. Process according to one of the preceding claims, characterized in that it is carried out in a perforated drum in which the particles are placed in motion, the said perforated drum being continuously traversed by a stream of hot gas.

5. Process according to the preceding claim, characterized in that it is carried out in a perforated drum operating in continuous mode.

6. Process according to one of Claims 1 to 3, characterized in that it is carried out by placing the particles in fluidized bed using the stream of hot gas.

7. Process according to any one of the preceding claims, characterized in that the stream of gas traversing the particles exhibits a temperature ranging from 30 to 150°C and preferably from 50 to 100°C.

8. Process according to any one of the preceding claims, characterized in that the flow rate of the stream of gas is from 5 to 100 m^3 per hour and per kilogram of catalyst.

9. Process according to any one of the preceding claims, characterized in that the protective layer comprises from 50 to 100% by weight of one or more film-forming polymer(s) and preferably the protective layer consists entirely of one or more film-forming polymer(s).

10. Process according to any one of the preceding claims, characterized in that the film-forming polymer(s) are chosen from:

- vinyl alcohol homo- and copolymers, such as:
- polyvinyl alcohols;
- copolymers formed from vinyl alcohol and olefin monomers, such as the copolymers formed from vinyl alcohol and ethylene monomers (EVOH copolymers); and
- partially hydrolyzed vinyl alcohol copolymers, that is to say still containing nonhydrolyzed vinyl acetate units;
- polyethylene glycols;
- collagen;
- polyethylene terephthalates (PET);
- polyethylene naphthalates (PEN);
- polyamides;
- polysaccharides, in particular cellulose polymers and their derivatives (among which in particular C_1-C_4 alkyl celluloses and

more particularly methyl celluloses), and starches, which are optionally modified;

- polyvinyl chlorides (PVCs);
- polyvinylidene chlorides (PVDCs);
- polyacrylonitriles (PANs);
- polyacrylate resins, such as, in particular, polymethyl acrylates;
- copolymers, at least one of the monomers of which is of acrylate type;
- and their mixtures,

and preferably the film-forming polymer is chosen from polyvinyl alcohols and copolymers formed from vinyl alcohol and olefin monomers and more preferably from copolymers formed from vinyl alcohol and ethylene monomers (EVOH copolymers).

11. Process according to any one of the preceding claims, characterized in that the mean thickness of the protective layer ranges from 0.1 to 10 µm, preferably ranges from 0.5 to 10 µm and even better still ranges from 2 to 8 µm.

12. Process according to any one of the preceding claims, characterized in that the total amount of film-forming polymer employed ranges from 0.1 to 4% by weight, preferably from 0.5 to 4% by weight and more preferably still from 1 to 3% by weight, with respect to the total weight of the initial particles.

13. Process according to any one of the preceding claims, characterized in that the porous material in the form of particles is chosen from catalysts which comprise a refractory oxide support on which is deposited at least one metal or metal compound.

14. Process according to the preceding claim, characterized in that the catalyst comprises at least one metal chosen from the metals of Group VIII and the metals of Group VIb of the Periodic Table of the Elements and/or at least one inorganic compound of such a metal.

15. Process according to any one of Claims 1 to 12, characterized in that the porous material in the form of particles is chosen from adsorbent agents comprising one or more porous

materials chosen from active charcoals, zeolites (or molecular sieves), aluminas, silica gels and activated clays and which can in addition contain metals, such as, for example, metals of Groups VIIIb, Ib and IIb of the Periodic Table of the Elements or compounds of such metals.

16. Process according to any one of the preceding claims, characterized in that the particles contain one or more organic compounds which preferably comprise from 1 to 15 carbon atoms and more preferably from 2 to 10 carbon atoms, it being possible for these compounds to additionally contain one or more heteroatoms chosen from oxygen, nitrogen and sulphur.

17. Process according to any one of the preceding claims, characterized in that the organic, halogen, boron and/or phosphorus compounds are present in a total content ranging from 0.1 to 20% by weight, preferably from 0.5 to 15% by weight, more preferably from 1 to 10% by weight and better still from 1.5 to 5% by weight, with respect to the total weight of the said particles.

18. Porous material in the form of particles comprising a porous inorganic support and at least 0.1% by weight of one or more compounds chosen from organic compounds, halogen compounds, boron compounds and phosphorus compounds, said particles being covered with a protective layer comprising one or more film-forming polymer(s), wherein the porous material is obtainable by the process as defined in any one of the preceding claims, the film-forming polymer(s) representing from 0.1 to 4% by weight, with respect to the total weight of the particles, and being chosen from:

- vinyl alcohol homo- and copolymers;
- polyethylene glycols;
- collagen;
- polyethylene terephthalates;
- polyethylene naphthalates;
- polyamides;
- polysaccharides;
- polyvinyl chlorides;
- polyvinylidene chlorides;
- polyacrylonitriles;
- polyacrylate resins;

- copolymers, at least one of the monomers of which is of acrylate type;

- and their mixtures.

19. Porous material according to Claim 18, characterized in that the particles exhibit a homogeneity in layer thickness of greater than or equal to 65% and more preferably of greater than or equal to 70%.