TABLE 3-continued

No. of developments repeated	Pressure loss at eluent development (kg/cm^2)	Height of packing material (mm)
8	7.7	832
9	8.3	829
10	8.5	825

EXAMPLE 12

10 g of the porous silica particles obtained in the Reference Example (average pore diameter 120 nm, pore volume 0.85 ml/g, specific surface area 28.3 m^2/g) were put into a 100 ml flask, and the pressure within the flask was reduced by a vacuum pump. 2.5 g of styrene, 0.2 g of divinylbenzene and 0.03 g of benzoyl peroxide were charged in the flask to cause the same to be adsorbed to the particles. The mixture was heated up to 85° C. while slowly agitating, and polymerized by heating at that temperature for 10 hours. The product was thoroughly washed with toluene and acetone in this order, and dried at 50° C. under vacuum. The weight of the thus obtained composite material (A) was 13.8 g, and its specific surface area was 10.4 m^2/g.

On the other hand, a composite material (B) was obtained by following substantially the same procedures as described above except that the pores of the particles were filled with a mixture of 2.5 g of styrene, 0.2 g of divinylbenzene, 0.03 g of benzoyl peroxide and 5.5 ml of methyl isobuthyl ketone. 14.2 g of a composite material having a surface area of 59.2 m^2/g was obtained. The composite material (A) was shown for a comparison, whereas the composite material (B) is of the present invention.

What is claimed is:

1. A composite porous material comprising a particulate inorganic porous material and, contained in the pores of said inorganic porous material, a crosslinked organic resin having a micro-void, said composite material having a surface area larger than that of said inorganic porous material.

2. A composite porous material according to claim 1, wherein said particulate inorganic porous material has an average particle diameter of 10 μm to 1 mm.

3. A composite porous material according to claim 1, wherein said particulate inorganic porous material has a pore volume ratio of 0.3 to 0.9.

4. A composite porous material according to claim 1, wherein said particulate inorganic porous material has an average pore diameter of 20 nm to 2000 nm.

5. A composite porous material according to claim 1, wherein said crosslinked organic resin has a micro-void volume ratio of 0.40 to 0.95 as measured in a dry state.

6. A composite porous material according to claim 1, wherein said crosslinked organic resin has an average micro-void diameter not larger than 90 % of the average pore diameter of said particulate inorganic porous material.

7. A composite porous material according to claim 1, wherein said crosslinked organic resin has an average micro-void diameter of 10 nm to 800 nm.

8. A composite porous material according to claim 1, wherein said particulate inorganic porous material is a porous silica particle.

9. A composite porous material according to claim 1, wherein said crosslinked organic resin is an ion exchange resin or a chelate resin.

10. A process for producing a composite porous material, which comprises contacting a particulate inorganic porous material with a homogeneous liquid mixture selected from the group consisting of a mixture of a polymerizable monomer or oligomer, a crosslinking agent and a diluent and a mixture of a polymer, a crosslinking agent and a diluent to introduce said homogeneous liquid mixture into the pores of said particulate inorganic porous material, heating or exposing to actinic rays the mixture to produce an intermediate product comprising said inorganic porous material and, disposed in the pores of said inorganic porous material, a crosslinked polymer containing the diluent and removing the diluent from said intermediate product.

11. A process according to claim 10, wherein said homogeneous liquid mixture is a mixture of a polymerizable monomer, a crosslinking agent and a diluent.

12. A process according to claim 10, which further comprises reacting said crosslinked polymer with a functional group-introducing agent to introduce a functional group into said crosslinked polymer.

13. A process according to claim 10, wherein said homogeneous liquid mixture further contains a radical initiator.

14. A process according to claim 10, wherein said particulate inorganic porous material is porous silica particles.

15. A process according to claim 14, wherein said porous silica particles are those produced from a solution comprising a silica sol.

16. A process according to claim 15, wherein said porous silica particles are those produced by spraying a solution comprising a silica sol into air to form liquid particles and drying said liquid particles.

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