



ABSTRACT

NANOMETER-SIZED MOLECULAR SIEVE CRYSTALS
OR AGGLOMERATES AND PROCESSES FOR THEIR PRODUCTION

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A molecular sieve comprising crystals or agglomerates of average diameter 100 nanometers or less, which molecular sieve has a crystal or agglomerate size distribution such that the variance in the longest dimension is less than 15% of the average longest dimension, and which is capable of forming a colloidal suspension, may be prepared by producing a boiling aqueous synthesis mixture of a silica source and an organic structure directing agent in the form a hydroxide in an amount sufficient to cause substantially complete dissolution of the silica source, and crystallising the solution at 120°C or less. The crystal size may be controlled by selection of an appropriate crystallisation temperature.