


Study on Superfine HNS Particles

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Abstract: The effect of preparation temperature and polymer additive on superfine HNS particles was studied to investigate its microstructure. The results show that superfine HNS particles disperse well drying 48 h at 22–25 ℃ and aggregates drying 2 h at 100 ℃. The pore volume and specific surface area of HNS-IV adsorbed 8 h in vacuum at 25 ℃ are larger than that of HNS-IV adsorbed 2 h in vacuum at 65 ℃. The surface area is not totally depended on mean particle size but linearly changes with pore volume to some extent. The mean particle size of pure HNS-IV is 0.789 μm, the pore volume and surface area are 0.032 cm³ · g⁻¹ and 15.13 m² · g⁻¹ respectively. The mean particle size, pore volume and surface area of particles containing 3% polymer are 0.594 μm, 0.026 cm³ · g⁻¹ and 11.41 m² · g⁻¹ respectively. The mean particle size, pore volume and surface area of particles containing 4% polymer respectively are 0.594 μm, 0.026 cm³ · g⁻¹ and 11.41 m² · g⁻¹ respectively.

Key words: superfine HNS (HNS-IV); mean particle size; specific surface area; pore volume