



19CH103- ENGINEERING CHEMISTRY

Unit-3 NANOCHEMISTRY

PREPARATION OF NANOMATERIALS BY CHEMICAL PRECIPITATION METHOD

Preparation of BaSO₄ Nanoparticles

Nanoparticles of barium sulphate (BaSO₄) have been synthesized from barium nitrate by precipitation method in the presence of water soluble organic polycarboxylic polymer as a modifying agent.

50 mL 0.1 M Ba(NO₃)₂ was added to 50 mL 0.1M (MH₄)₂SO₄ in the presence of water soluble organic polymers as modifier agent. The solution was added dropwise into the flask while stirring at room temperature with dispersant at strong mechanical stirring 2000-2500 rpm.

The steady drop rate was 20 drops min⁻¹. Gelatinous white precipitates were formed instantly. The precipitates were separated from the mother liquid by centrifuged at 3000 rpm for 20 min. and then the supernatant solution was discharged and the solid was redispersed in deionized water. This process was repeated three times in order to rinse the particles. After the last centrifugation, sedimented particles were dried in the microwave oven. The products were slightly grinded for analysis.



