

## Dispersion polymerization of N-vinylcarbazole in compressed liquid dimethyl ether

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Spherical poly(N-vinylcarbazole) (PVK) was first synthesized by dispersion polymerization of N-vinylcarbazole (NVCA) in compressed liquid dimethyl ether (DME) using siloxane based (PDMS-g-pyrrolidone carboxylic acid) (Monasil PCA) and fluorine based (poly(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl methacrylate)) (poly(HDHDMA)) polymer as dispersants and 2,2'-azobisisobutyronitrile (AIBN) as the initiator. The spherical and relatively uniform PVK particles with micron-size (0.17 - 1.88  $\mu\text{m}$ ) was formed at 60°C, 20 bar and 70°C, 20 bar. The average molecular weight was obtained in the range of 92 000 - 190 000. The effect of the dispersant type and concentration, and reaction temperature on the morphology, size, and molecular weight of polymer particles was also investigated.