

What are the practical aspects of stabilization of nanodispersions?

- End- use specificity: The ultimate role of the nano particles must be kept in view while deciding the strategy of stabilization. Stabilizing agent should not detract from the intended function of the nanodispersion nor should it cause undesirable side effects to the performance of the product. e.g. Dispersion of nano particles to be used as a homogeneous catalyst cannot be stabilized with any molecules as this will deactivate the free energy on the surface of the nano particles rendering these particles incapable of catalytic activity.
 - Amount of stabilizer: It is quite obvious that very large surface area of the nano particles will necessitate multifold quantity of stabilizing agent compared to the conventional dispersions.
 - Timing: The process of stabilization has to be concomitant with the process of generation of nano particles in the dispersion form.
 - Preferred stabilizers: Non-ionic block polymers with controlled molecular weight are a good choice. Self stabilization by the vehicle resin is also an excellent option.
 - Test method for checking stability: Keeping the dispersion at 60 deg for 7 days and inspecting for flocculation, sedimentation and loss of transparency will provide good initial idea about the stability.
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