

Aqueous Dispersion Procedure for Nanospense AC

With the addition of Nanospense AC to a non-aqueous suspension of multi-walled carbon nanotubes (MWCNTs), their dispersion properties are greatly improved. Without the addition of Nanospense AC, dispersions of MWCNTs will separate out of suspension immediately. Dispersions made with Nanospense AC, are very stable for weeks requiring only ultrasonication before use.

Follows is our recommended incorporation procedure for lab scale work:

1. Place 0.1 g of powdered MWCNTs in a 100 ml vial.
2. Add 12ml Nanospense AC solution to the vial.
3. Add 88 ml of acetone, MEK, or other polar, nonaqueous solvents. For ethanol and DMF, we typically recommend NanoSpense AQ.
4. Immerse in an ultrasonic bath for 10 minutes. Alternatively, an ultrasonic probe works both better and faster than an ultrasonic bath. We use a Sonics model VC-505 probe for all dispersion work.
5. Dispersion is ready to use and can be used immediately. If dispersion is to be used later, please resonicate for 5 minutes to ensure adequate mixing.

The color of the solvent should blacken indicating that a suspension is being produced. This product has been developed for use with carbon nanotubes from NanoLab, and the particular surface characteristics of this product line. The NanoSpense AC may also work well with nanotubes from other suppliers, but this is not guaranteed, and the concentrations in this procedure may need adjustment if sediments are observed.

Please call NanoLab technical service for further assistance.

We hope these instructions are helpful, please call us if you have any further questions. We are most happy to serve.

Best regards,

NanoLab Technical Service