

Aqueous Dispersion Procedure for Nanospense AQ

With the small addition of Nanospense AQ to an aqueous suspension of multi-walled carbon nanotubes (MWCNTs), their dispersion properties are greatly improved. Without the addition of Nanospense AQ, dispersions of MWCNTs will separate out of water rapidly. Suspensions of Nanospense AQ, distilled water, and MWCNTs are very stable for weeks.

Follows is our recommended incorporation procedure for lab scale work:

1. Place 0.1 g of powdered MWCNTs in a 20 ml vial.
2. Add 10 ml of distilled water.
3. Agitate using an ultrasonic probe (1-2 minutes) or bath (~10 minutes.)
4. Add 0.2 g (~0.2ml) of Nanospense AQ to the vial.
5. Agitate again using an ultrasonic probe (1-2 minutes) or bath (~10 minutes.)
6. Dispersion is ready to use and can be used immediately. If dispersion is to be used later, please re-sonicate a few minutes before use.

You will notice an amount of foam in the vial; this is due to the addition of the Nanospense AQ and is a normal sign of surfactant use. In addition, the color of water will blacken indicating that a stable suspension is being produced.

If using larger amounts of water, please be sure to increase the Nanospense AQ level. For example, we have created very stable suspensions using an ordinary blender with 15 ml of Nanospense AQ, 0.5 g MWCNT, and 200 ml distilled water (Nanospense AQ loading intentionally too high). These suspensions have been stable for weeks at least.

For amounts greater than these, 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