

NANO-CBD GOES TOPICAL

Topical nano-CBD represents the latest in CBD technology. Being water soluble and having nano-sized droplets 1000 times finer than a human hair, nano-CBD can easily pass through the cellular gaps that “normal” CBD can’t. This increases its bioavailability, which means a lot less nano-CBD is needed compared to other forms of CBD.

Entering the market is Msorb™ technology and Packed NanoParticle Systems (PNPs). PNPs are highly concentrated, intimate nanoscale mixes of CBD droplets and water (Figure 1.) Size-wise, CBD droplets in PNPs are 40 times smaller than for current topical

products which greatly increases skin absorption, meaning more CBD reaches the target site, giving better results to consumers. Figure 2 shows the relative bioavailability of an Msorb™ formulation compared to a conventional commercial lotion.

PNPs and Msorb™ technology are based on years of academic lipid nanoparticle research at multiple universities world-wide. For the first time ever, Superior Nano now makes these advances practical and accessible to the consumer with its one of a kind processing facility in Northern Minnesota. The exceptional properties of Msorb™ PNP in consumer products are evident at first blush – billions of round nanoparticles dispersed in water roll across skin like ultra-microscopic ball bearings, giving a unique skin experience that even the most artificial silicone products can’t match – but without so much as a nanogram of silicon! Small PNP nanoparticles don’t scatter light, so Msorb™ products are transparent compared to conventional lotions which are white.

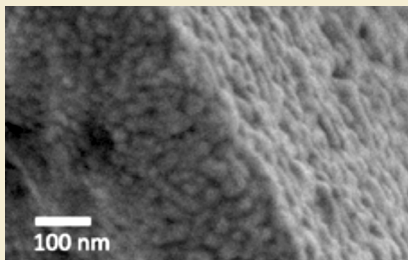


FIGURE 1a: Cryogenic scanning electron microscope image of Msorb™ PNP lotion showing white nanoemulsion droplets in water. Magnification: 30,000 X. Photo credit: Hanseung Lee, University of Minnesota, manuscript in preparation

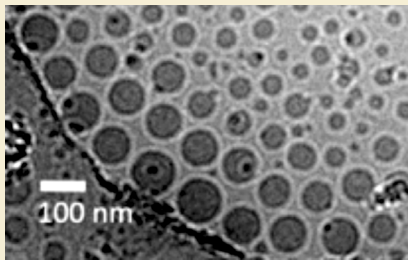


FIGURE 1b: Cryogenic transmission electron microscope image of isolated Msorb™ nanoemulsion droplets from the PNP lotion in Figure 1a. Magnification: 20,000 X. Photo credit: Hanseung Lee, University of Minnesota, NSF SBIR Grant 1647292 Final Report

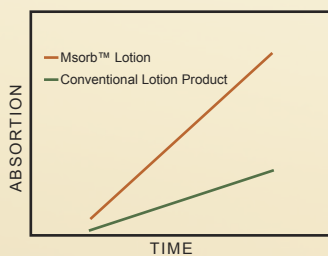


FIGURE 2: Human skin absorption of Msorb™ nanoemulsion lotion compared to conventional commercial lotion product

Msorb™ CBD nanoemulsion lotions are available as Superior Nano Topical CBD Serum with Arnica and Camphor™ from Superior Nano, a Minnesota high tech company with a manufacturing facility in Two Harbors, Minnesota and as products from Superior Nano commercial customers displaying the Msorb™ logo.

Go to [SuperiorNano.com](https://www.SuperiorNano.com) to order products.

For help with custom manufacturing of white label CBD and other botanical Msorb™ formulations, contact Superior Nano Marketing Manager Brian Garhofer at brian.garhofer@superiornano.com