

USA Lab's Nano Powder is a proprietary, food-grade emulsification blend designed for the solubilization of vitamins, nutraceuticals, pharmaceuticals, cannabinoids, and other actives. It forms stable micelles in the 50–100 nm range, ensuring excellent dispersion and bioavailability. Our FDA-approved and USP-certified formula offers high stability, rapid reconstitution, and versatile compatibility with ultrasonic and mechanical systems.

KEY BENEFITS

- ✓ **Reconstitutable Dry Powder:** Fully redissolves into a stable emulsion.
- ✓ **High Water Solubility:** Produces 50–100 nm micelles for superior absorption.
- ✓ **FDA / USP Certified Ingredients:** Food-grade and compliant for safe applications.
- ✓ **Versatile Compatibility:** Effective in ultrasonic, high-shear, and mechanical mixing systems.
- ✓ **Long Shelf Life:** Stores up to 12 months in dry form with consistent performance.

STANDARD OPERATING PROCEDURE (SOP)

Liquid Emulsions

1. Add calculated water to a clean vessel.
2. While mixing with a high-shear mixer, slowly add USA Lab Nano Powder.
3. Once fully dissolved, introduce your API and continue mixing at 130°F for 10 minutes at $\geq 5,000$ RPM.
4. Process through your sonic or mechanical emulsification equipment per manufacturer guidelines.
5. Store finished liquid refrigerated in a sealed container for up to 30 days.

Dry Powder Emulsions

1. Follow the above liquid emulsion process.
2. Transfer to a shallow non-stick vessel and dry at 80°C for 24 hours (extend if moist).
3. Allow to cool, break apart, and grind into a fine powder.
4. Store sealed for up to 12 months; powder redissolves easily in water.

SPECIFICATIONS

Property	Description
Micelle Size	~50–100 nm
Recommended Loading	200 g/L
Process Temperature	130°F for liquid / 80°C for drying
Storage	30 days (liquid) / 12 months (dry)
API Ratio Guidance	Commonly 1 : 3 (API : Nano Powder), varies by active
Compliance	FDA-approved / USP-certified food-grade formulation