

# Particle Engineering

## Research, Development and Commercial Scale Supply

### Pre-clinical Solubility & Bioavailability Enhancement

- Screening method: Quenching and Film Casting
- Processing Solid Dispersions:  
Spray Drying, Melt Extrusion, Spray Congealing and Electro Spinning
- Analytical Solid State Testing: mDSC, XRPD, FTIR
- Stability Testing at different Temperatures and Relative Humidities
- In Vitro Dissolution Testing
- Final Dosage as powder, tablet or capsule, by using different formulation technologies
  - o High Shear Wet Granulation
  - o Fluid Bed-Dryer-Coater-Granulator
  - o Vacuum Dryer
  - o Extruder
  - o Spheroniser
  - o Tablet Press
  - o Tablet/Capsule Coater
  - o Capsule Filling



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[www.austinchemical.com](http://www.austinchemical.com)

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### Micronization

- Grams to Tons
- Over 200 commercial products handled annually
- Experience with over 1,000 different products
- Containment systems up to  $0.1 \mu\text{g}/\text{m}^3$
- Jet-MCA<sup>®</sup> (Mechano Chemical Activation) for API-carrier composites
- Capacity greater than 1,000 MT/year

### Formulation Spray Drying Solutions

- Grams to Tons
- Ideal for Temperature Sensitive Products
- Aqueous and Solvent systems
- Containment systems up to  $1 \mu\text{g}/\text{m}^3$
- Solid Dispersions
- Amorphous Powders
- Powders for Inhalation
- Lipo-Technology

### Bulk Spray Drying Solutions

- Solid dispersion technology
- Improvement of API properties
- Oily API to Powder
- Orally disintegrating tablet system - F-MELT<sup>®</sup> system
- Capacity greater than 2,000 MT/year

### Nano-emulsions

Examples of past successes:

- Fish Oil
- Conjugated Linoleic Acid
- Boswellia Serrata

### Nanoparticles

- with Supercritical Fluid Precipitations
- with Nanonizer<sup>®</sup>
- with HGCP<sup>®</sup> technology

### Other Services

- Roll Compaction
- Briquetting
- Blending
- Mechanical classification
- Mechanical pulverization



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