



CSIR CAPABILITY IN SUPERCRITICAL CO_2 ENCAPSULATION



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA





Our state-of-the-art facility offers a world-class capability in CO₂ encapsulation, providing end-to-end solutions for pharmaceutical, nutraceutical, and specialty chemical applications.

SUPERCRITICAL CO₂ ENCAPSULATION FACILITY

Advanced, Eco-friendly Microencapsulation and Micronization Solutions - Driving Innovation from Lab to Pilot Scale
With expertise in encapsulation and micronization, we leverage the unique properties of supercritical CO₂ to help industry partners create superior formulations.

Our process stands out for its ability to produce solvent-free formulations and microparticles imparting enhanced stability, bioavailability, and performance of your active ingredients. From concept development at lab scale to pilot-scale production optimization, we provide end-to-end support for the nutraceutical, cosmeceutical and animal nutrition industries.

KEY CAPABILITIES:

- **Supercritical CO₂ Processing** - Eco-friendly, solvent-free, and gentle on sensitive actives.
- **Micronization of Pure Compounds** - Custom particle engineering (size, morphology, crystallinity)
- **Encapsulation of Sensitive Actives** - stabilization, controlled & targeted delivery.
- **Patented Encapsulation Technologies** - Delivering innovative, proprietary solutions.
- **Lab-Scale PGSS System** - Enabling rapid R&D and custom-designed encapsulation technologies.
- **Scalability Assessment** - Ensuring your formulations are ready for industrial scale-up.
- **Pilot-Scale Formulation Optimization** - Bridging the gap between research and industrial-scale production.
- **Toll Manufacturing Services** - Flexible pilot-scale production options.
- **HACCP-Certified Pilot Facility** - Ensuring safety and quality for production-scale runs

INDUSTRIES TARGETED:

- Nutraceuticals & Dietary Supplements
- Functional Food Ingredient
- Animal Nutrition and Health
- Cosmeceuticals



CONTACT US

FOR MORE INFORMATION OR TO DISCUSS YOUR PROJECT NEEDS, REACH OUT TO OUR TEAM TODAY.

SUPERCritical CO₂ ENCAPSULATION FACILITY

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