

The background of the slide features a large, circular inset showing industrial equipment used for supercritical CO2 encapsulation. The equipment consists of several stainless steel cabinets with gauges, a digital display, and various pipes and valves. A blue circular graphic element is overlaid on the left side of the image, partially obscuring the equipment. The text 'CSIR CAPABILITY IN SUPERCRITICAL CO2 ENCAPSULATION' is written in white, bold, sans-serif font across the blue graphic.

CSIR CAPABILITY IN SUPERCritical CO₂ ENCAPSULATION



science, technology
& innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA



CSIR
Touching lives through innovation



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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