

- HIGH PERFORMING POWDERS • INCREASED FUNCTIONALITY
- STABLE OIL TO POWDER CONVERSION

# Optimise functionality for oily actives

CPO® is an innovative oil conversion technology, specifically designed to overcome the challenges of formulating with oily lipid-based ingredients.

Made in Australia in our TGA licenced facility, under cGMP standards.

## THE CHALLENGES OF MICRO-ENCAPSULATED OILS

Standard micro-encapsulated oils, have a solid crust formed around a liquid centre. Inherently, this is a fragile structure, and when under pressure, it breaks and spills out its oil contents. Often formulations are limited by these challenges, and struggle with leaching, mottling, sticking, picking and stability.

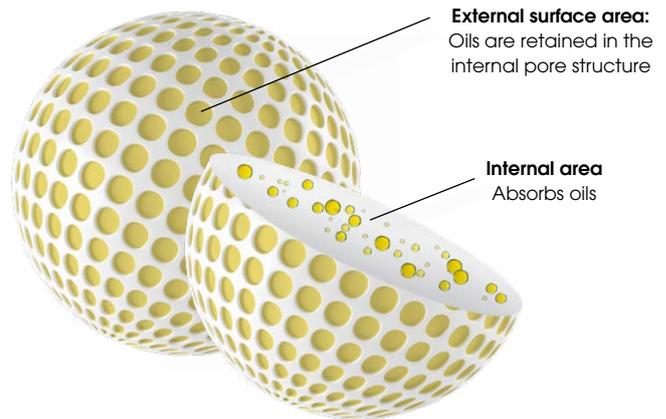
Interactions amongst desired ingredient combinations can also often limit their usage together.

## CPO® TECHNOLOGY

CPO®s overcome all these challenges! Addressing the problem of product spoilage from oils, Pharmako's CPO® technology utilises the absorption of oil into specially designed silica particles. When under large pressure (such as when tableting), CPO® particles resist this pressure and maintain their oil load, allowing these oily active ingredients to become compressible powders suitable for tableting and ready-to-mix formulations.

## PERFORMANCE AND FORMULATION ADVANTAGES

The combined internal and external area of the CPO® particle provides a greater surface area, which in-turn, offers a higher adsorptive capacity for oils. Oily active ingredients are easily converted into free-flowing powders, suitable for



**ABOVE:** Internal structure is hydrophobic (hates water), but lipophilic (loves oil). External surface is hydrophilic (loves water).

tableting, ready-to-mix formulations and hard capsules with improved dissolution properties and significantly reduced product spoilage.

CPO®s offer enhanced shelf stability over oils on their own, with less sensitivity to air and light. They also address the issue of unwanted after taste or reflux, especially important when dealing with strong tasting or smelling actives.



## VERY VEGAN

Oily ingredients have previously been limited to soft gelatine capsule formats. Even though there are vegan soft capsule options, stability and cost remain challenging for these formats. Also, it's not uncommon to find gelatine as a hidden ingredient in some spray dried oil formulations.

Ground-breaking CPO® powders, allow you to create truly vegan formulations with hard capsules, powder sachets and other format options.

All CPO®s are made in Australia from pharmacopoeial grade ingredients, under cGMP standards.



### CPO®s advantage over standard micro-encapsulation:

- Compressible for tableting
- Water dispersibility
- Improved functionality
- Enhanced bioavailability
- Increase loading in solid dosage form
- Highest active content
- 100% vegan

### CPO®s can be customised for oily ingredient:

- Fish/Algal oils
- CLA
- EPO
- Lavender oil
- Astaxanthin
- Citrus oils
- CBD oil

All AquaCelle® enhanced CPO® formulations can also utilise the associated AquaCelle® ingredient studies.

1 PK Study – CPO®-D Astaxanthin: CPO®-D Astaxanthin also contains AquaCelle®, which increases the absorption of astaxanthin by two-fold.

## AWARDS



### AUSTRALIA

Quality Raw Material Supplier of the Year 2021



### INDIA/AUSTRALIA

India Australia Business and Community Awards SME of the Year 2021



### AUSTRALIA

My Business Awards Export and Manufacturing Business of the Year 2020



### AUSTRALIA

Quality Raw Material Supplier of the Year 2018

200 | **W**  
Businesses  
of Tomorrow  
2018 WINNER

### AUSTRALIA

Westpac top 200  
Businesses of the Future 2018

Applying CPO® trademarks on your product pack tells your customers you are offering a product of quality, proven efficacy, clinical validation and innovation.

FOR FURTHER INFORMATION ABOUT CPO®  
OR TO DISCUSS HOW CPO® CAN BENEFIT YOU, CONTACT:

**pharmako.**  
BIOTECHNOLOGIES

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