

SUPERCRITICAL CO2 FLUID PURIFICATION

Supercritical Fluid Purification (SFC)



Supercritical Fluid Purification (SFC) is an sustainable alternative to liquid chromatography

Supercritical Fluid Purification (SFC) is a sustainable chromatography process to select high value compounds, with greener outcomes and better TCO compared to conventional processes.

De Dietrich Process Systems is the exclusive distributor and agent in Europe, Middle East and Africa of <u>Thar Process</u>, a pioneer and leader in this technology, known for developing lipid purification for the big Corona virus vaccine manufacturers.



Non toxic Pure, stable Upcycled Non-flammable Reclaimed from Fast industrial plants Recyclable minimizes waste

Sustainable Low energy use

SEPARATION AND PURIFICATION PROCESS

Purification based on supercritical CO2 is a tunable and scalable process based on supercritical CO_2 low viscosity and high diffusivity.

This technic targets and separates high-value compounds from crude extracts. It allows also to remove unwanted chemicals such as pesticides and fungicides from your natural extracts.

ECO-FRIENDLY PROCESS

With the adequate temperature and pressures, carbon dioxide migrates into a supercritical phase where it behaves as a gas and a liquid, and becomes an effective solvent.

Supercritical CO_2 extraction is eco-friendly as it reduces the need for organic solvent. It is recyclable.

Moreover CO_2 effectively preserves the chemical composition of extracts.

CO₂: CHEAP AND UPCYCLED SOLVENT

 CO_2 is a cheap solvent that can be upcycled or captured from industrial processes.

Supercritical CO₂ fluid extraction is also an energy efficient process.

SAFE

Compared to organic solvent, supercritical CO_2 is a pure and stable solvent. It is non-flammable. Supercritical CO_2 extraction is completely free of controversial organic solvent. CO_2 can also be certified organic.



FROM LABORATORY TO INDUSTRIAL SCALE EQUIPMENT

With the equipment developed by Thar process, the daily purification capacity ranges from 1 kg to 150 kg for catalogue equipment. Custom systems are also available for specific needs.

TUNING AND SCALING-UP THE TECHNOLOGY

The best conditions for each customer's needs are tailored and optimized with laboratory and pilot scale trials. They will be performed either with the help of Thar Process in De Dietrich's Tech Lab facility in France, with dedicated equipment.

PLANT-BASED AND PHARMACEUTICAL APPLICATIONS

Supercritical CO₂ purification (SFE) main applications are:

- CBD and cannabinoid industry, for pharmaceutical or nutraceutical industries
- EPA / DHA industries (omega-3)
- Natural extraction for Flavors, Fragrances and cosmetics
- Vegetable oil industries

Questions? We are here to help.

If you'd like to talk with a sales representative about purchasing De Dietrich Process Systems's products and services, you can reach us here.

