PRODUCT DATASHEET

Supercritical CO_2 Extraction System

Lab and pilot SFE systems with CO_2 recycle





DETAIL – EXTRACTION VESSELS AND SEPARATORS

OVERVIEW

The Tech Inc. Supercritical CO_2 Extraction System pulls oils and active compounds from plant material using carbon dioxide held above its critical pressure and temperature. CO_2 leaves no solvent residue, and changing pressure and temperature tunes what is extracted. Systems run from laboratory units for method development to pilot skids that produce saleable batches.

MODELS AND CONFIGURATIONS

- **Laboratory system** – small vessels for method development and university research.
- **Pilot system** – larger vessels for scale-up and saleable batches.
- **Multi-vessel** – two or three extraction vessels for semi-continuous running.
- **Winterisation and filtration add-on** – chilling and filtration skid for extracts after SFE.

TYPICAL DESIGN DATA

Process	CO_2 above its critical pressure and temperature, with optional ethanol co-solvent
Vessel volume	Laboratory to pilot scale, to client specification
Separation	One to three heated separators for fractional collection
Wetted materials	SS316, or to client specification
Design code	Designed to ASME VIII or client specification
Controls	PLC and HMI with recipe storage and data logging

APPLICATIONS

Botanical and herbal extracts, essential oils, food ingredients and nutraceuticals, natural colours and research on extraction and particle formation.

KEY ADVANTAGES

- **Solvent-free product** – no hexane or residual solvent in the extract
- **Selective** – pressure and temperature tune the extract
- **CO_2 recycle** – gas is condensed and reused, not vented
- **Scale-up path** – laboratory and pilot systems share one design basis
- **Service support** – seal, valve and pump rebuild kits and control retrofits

Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

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