Supercritical Extraction System

Supercritical Fluid Extraction (SFE) is one of the processes of separating one component from another, using supercritical fluids as the extracting solvent. It is widely used as an extraction technology such as extraction of mixtures, refining polymer materials, separation of useful ingredients such as medicines or spice out of natural plants.
Recently, more applicable industry through SCF is being considered and studied seriously for energy savings and clean process development as well.

Features

- Environment friendly clean technology
- Technology applicable for high purity, high qulity production process
- Energy saving/high speed process
- No residual organic solvent existing
- Physical properties of supercritical fluid (lower viscosity, higher diffusion forece, strong solvent property)

Application

- Production of natural extracts (e.g. hops, caffeine, spices)
- Productin of active agents for phamaceuticals and cosmetics
- Degreasing of catalysts, microchips, medical implants
- Production of essential oils from blossoms, leaves and roots
- Decontamination of soils
- Production of natural colours (e.g. oleoresins, carotene, bixins)
- Fractionated separation of oils and waxes
- Refining of lecithin
- Removal of solvents from synthetic products

Plant

Plant

R & D Equipment

Pilot Equipment

Specification

Type	R & D Equipment	Pilot Equipment	Plant
Product			
Extarctor	Convertible for Solide & Liquid - Max. Working : 10,000psi @ 90℃ - Volume : 1 L - Cover Type : Quick Closure Clamp	Convertible for Solide & Liquid - Max. Working : 10,000psi @ 80℃ - Volume : 100L × 2 unit - Yoke Frame Type - Cover Type : Quick Closure Clamp	No Basket Type - Max. Working : 6,500psi @ 80℃ - Volume : 2,300L × 3 unit - Cover Type : Quick Closure Clamp
Separator	- Max Working : 3,000psi @ 90℃ - Volume : 0.2L× 2 unit - Cover Type : Quick Closure Clamp	- Max Working : 3,000psi @ 90℃ - Volume : 50L × 2 unit - Cover Type : Bolt Closure	- Max Working : 3,000psi @ 90℃ - Volume : 1st 600L × 3 unit 2nd 500L × 3 unit 3rd 300L × 3 unit - Cover Type : Bolt Closure
High Pressure Pump	Moter Driven Plunger - Max. Outlet Pressure : 10,000psi - Max. Flow Rate : 70ml/min - 220VAC, 3-ph, 1HP	Electro-Hydraulic Driven Piston Type - Max. Outlet Pressure : 10,000psi - Max. Flow Rate : 13L/min - 380VAC, 3-ph, 30HP	Electro-Hydraulic Driven Piston Type - Max. Outlet Pressure : 6,500psi - Max. Flow Rate : 160 L/min - 3,300VAC, 3-ph, 200HP
Co-Solvent Pump	- Type : Plunger - Max. Outlet Pressure : 10,000psi - Max. Flow Rate : 10ml/min - 220VAC, 1-ph	Electro-Hydraulic Driven Piston Type - Max. Outlet Pressure : 10,000psi - Max. Flow Rate : 1.2L/min - 220VAC, 3-ph, 5HP	Electro-Hydraulic Driven Piston Type - Max. Outlet Pressure : 6,500psi - Max. Flow Rate : 25L/min - 380VAC, 3-ph, 40HP
Pre-Heater	Heating Bath Type - Max. Temp : 90℃	Double Pipe Type × 2 unit - Max. Temp : 80℃	Double Pipe Type × 6 unit - Max. Temp : 80℃
Condenser	Chiller Type - Temp. Range : -5℃	Shell in Tube Type × 2 unit - Temp. Range : -2℃	Double Pipe Type × 9 unit - Temp. Range. : -2℃
CO_2 Reservoir	- Volume : 5 L - Max. Pressure : 3,000psi	- Volume : 300 L - Max. Pressure : 3,000psi	- Volume : 1500 L × 4 unit - Max. Pressure : 3,000psi
Liquid CO_2 Tank	- 0.04 ton	- 20 ton	- 70 ton

* Can be changed upon customer's requirements.

Our S.C.F System Includes

Nano Particle Production in Supercritical Fluids (SAS, RESS)

Supercritical Synthesis

Supercritical Drying System

Supercritical High-Molecule Expansion

Supercritical Cleaning System