What is Supercritical carbon dioxide processes

A supercritical process exists to various needs
A way to Distinguish From competition, and increase productivity for our clients

- More efficient, high quality and purity of product extracted
- Specific proprieties
- Ecologic
- Extraction, Fractionation, Chromatography, Purification, Impregnation ...

Process
A supercritical process exists to various needs

A way to Distinguish
From competition, and increase productivity for our clients
Why to choose SFE Process?

**Expertise**
Expert in carbon dioxide technology we deliver extraction and supercritical processes solutions

**Efficiency**
We use optimal solvent for efficient, easier and lower operating cost processes

**Ecology**
We use a CO2 gas coming from agroressources, in a continuous loop.

**Innovation**
Reliable systems and innovative vision to fit your needs with R&D projects
SFE Process believes in:

CHALLENGING STATUQUO OF CO2
With our projects and our vision we want to challenge the actual situation in CO2 field

VARIOUS APPLICATION
This method allows wider supercritical process possibilities.

INNOVATIVE POINT OF VIEW
We are thinking differently with a different point of view and high r&d projects

HIGH EXPERTISE
Our experience and our passion in supercritical field are part of our DNA
Supercritical CO2 Application

Fields

- Perfume and Aroma
- Hemp industry
- Pharmaceutical industry
- Food
- Medicine
- Advanced industry
- Debinding
- Aerogel application
How SfeProcess is challenging scCO₂.

**Well designed products**
You need to have efficient technologies and sophisticated equipment to reach your goals in supercritical field.

**Reliable equipment**
Our equipments are entirely manufactured by SFE Process. Our standard range can be upgraded with GMP. All our products are consistent with PED an ASME regulations.

**Simple to use**
Permitting to collect the highest and purest volume of target compounds and the lowest amount of undesirable compounds. Less step, lowest costs.

**Versatile machines**
We make tailor made equipment to fit your needs. With our process, extraction parameters can be changed to adjust mass transfer and solvency. Increase your productivity with SFE.
We manufacture **Standard production equipments.**

---

**Extraction system 2 x10L**
- Adapted system for vegetal extraction
- Performance Efficiency Quality
- Less step Cannabis extraction Productivity

**You have needs we have solutions**
- Supercritical CO2 technologies is imperative in today's market.
- Simple Efficient Less Steps
- Extraction parameters can be changed to **adjust** mass transfer and solvency.

**FROM 1l TO 100l**

---

**SFE Prod 2X100L**
- Highest and purest volume of target compounds
- Lowest amount of undesirable compounds
We manufacture **Standard production equipments**.

To increase your productivity and efficiency, to let you gain time and money, SFE Process develops high capacity equipments adapted to your industry standards from 2X5L to 2X100L. R&D project to develop your turnover. Increase productivity.

To increase your productivity and efficiency, to let you gain time and money, SFE Process develops high capacity equipments.
Simple and efficient standards laboratories equipments.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Multi process</th>
<th>Compression ramp and automatic depressurization</th>
<th>View cell for analysis on line</th>
<th>Diam 35mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max pressure (bar)</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max temperature (°C)</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-Solvent pump</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separators</td>
<td>2*300ml</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 flowrate</td>
<td>150g/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>2*2L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Specifications        | SAS process for particule formation: multi process |
|-----------------------|--------------------------------------------------|--------------------------------------------------|-------------------------------|-----------|
| Max pressure (bar)    | 1000                                             |                                                  |                               |           |
| Max temperature (°C)  | 150                                              |                                                  |                               |           |
| Co-Solvent pump       | yes                                              |                                                  |                               |           |
| Separators            | 2                                                |                                                  |                               |           |
| CO2 flowrate          | 70 g/min 1000 bar                                |                                                  |                               |           |
| Capacity              | 1L                                               |                                                  |                               |           |

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Automatic collection</th>
<th>Connected weighing to automatically draw extracting plot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max pressure (bar)</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td>Max temperature (°C)</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Co-Solvent pump</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>Separators</td>
<td>2*300ml</td>
<td></td>
</tr>
<tr>
<td>CO2 flowrate</td>
<td>150g/min 700 bar</td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>2*1L</td>
<td></td>
</tr>
<tr>
<td>Specification</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
We sell and manufacture products, our product catalog proposes standard products as BPR or Valves.

Simple and efficient **Standard products.**
Innovative product and tailor made equipment

To fit your needs SFE Process builds ultra-high performance advanced equipment.

R&D projects to go further

- For new processes
- To complete the process
- Fractionation
- Impregnation
- Chromatography
- Dewaxing
- Purification

We anticipate future needs and market evolutions developing projects
We design and manufacture high pressure equipments for post treatments processes. Our expertise ensures a full customer support.
To support project in all steps: Services.

New project = New needs

We support our customers in all steps of the supercritical project, building a strong partnership.
How is the project handle by SFE Process team?

**YOUR NEEDS**
- Customer’s needs estimation
- Ideas talk
- Specifications definition
- Price offer
- SPECIFICATION VALIDATION

**DESIGN FABRICATION**
- Design
- BOM and manufacture equipment
- Make FAT validation

**INSTALLATION SERVICES**
- Installation
- SAT FAT validation
- Services to support project

**BENEFIT**
- We take care of your project.
- To help you achieving your goals
- More efficient process
- Best productivity
- Easier Faster
SFE Process CEO

After sales services manager
Technical manager
Security responsible
SEPAREX

Started to work in supercritical fluid
Saint Gobain

Jérémy Lagrue
CEO and founder

Experienced team at your service

2015
SFE Process CEO

2007-2012
After sales services manager
Technical manager
Security responsible
SEPAREX

2005
Started to work in supercritical fluid
Saint Gobain

Passionate and experimented team

SFE Process can count on experimented and passionate team, with strong skills, truly believing in innovation which is part of the DNA.

Expert technicians
High skill technicians at your service

Engineers
Engineers and project leaders for project management
Brice Sarrail
CTO and Sales manager

2018
SFE Process
CTO Sales manager

5 years
EDF
International project manager

6.5 years
SEPARÈX
Business engineer
Maintenance/after sales manager
Dynamic Profitable Company

- %75 Global sales EXPORT
- Dynamic company
- Increasing markets
- High precision technologies
They Trust us.

Our customers are using SFE Process equipment, in clean room, industries, laboratories, universities and we support their supercritical project development all over the world.
Our trustworthily Partners

Core Separations
Builds and manufactures SFE Process equipments, provides support for Canada and USA markets

Collaborate with SFE Process to develop aerogel projects and development

SupEng
Collaborate with SFE Process to develop and improve all our equipments
SFE Process innovative International company.

Innovative design and Technologies
GMP compliant
Environmental Price In Grand Est France

To ensure traceability and GMP principles
Increase your economic performance and improve your environmental records using supercritical technologies developed by SFE Process.
We develop Project’s customers All over the world

Thanks to international agent network
Some videos of our Expertise.

- Extraction
  - [Video 1](https://youtu.be/ErkR-hQ4ftQ)
- Fractionation
  - [Video 2](https://youtu.be/Ach-RnKK_yE)
Thank You.
Contact Us

Jérémy LAGRUE
• jlagrue@sfe-process.com
• +33 (0)6 13 90 17 54
• 1A rue Georges Bizet 54 500 Vandoeuvres les Nancy

Brice SARRAIL
• bsarrail@sfe-process.com
• +33 (0)6 71 32 95 17
• 1A rue Georges Bizet 54 500 Vandoeuvres les Nancy