

SAS / RESS



Crystallization with compressed gases or supercritical fluids seems to be a promising new technique. The use of near critical or supercritical fluids as solvents or antisolvents in particle production has been shown by numerous researchers to be useful in modifying particle properties such as particle size, size distribution, crystal habit and morphology.

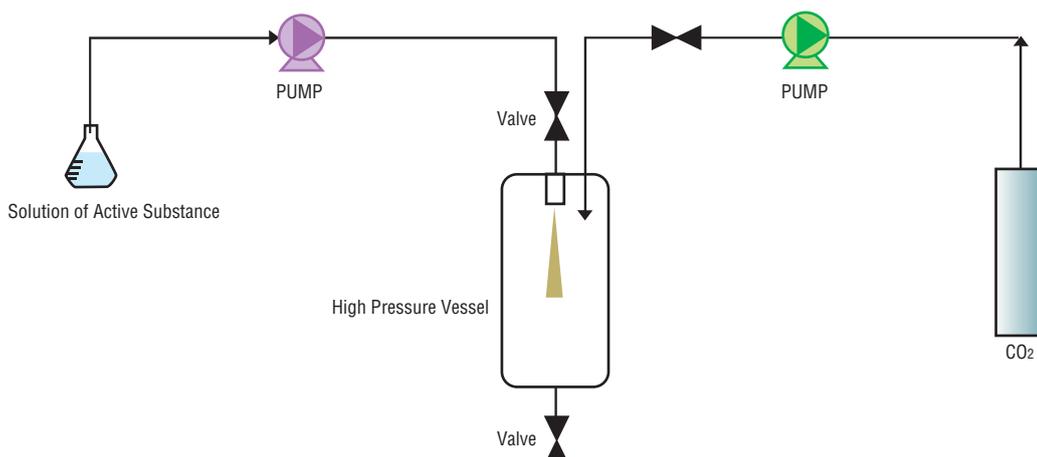
Supercritical fluid nucleation can be an attractive recrystallizing method for many solids, especially for some difficult to comminute or recrystallize materials such as pharmaceuticals used in dermal salves, injectable solutions, and ophthalmological preparations, which require ultra-fine and uniform particles. The use of supercritical fluids allows a precise control of the crystallization process and is capable of generating very small and uniform particles.

Another advantage is the easy separation of the antisolvent from the particles after precipitation. It is therefore possible to avoid large amounts of solvent by-products and offer a potentially advantageous circulation of the solvent and antisolvent.

SAS (Supercritical Fluid Anti-Solvent)

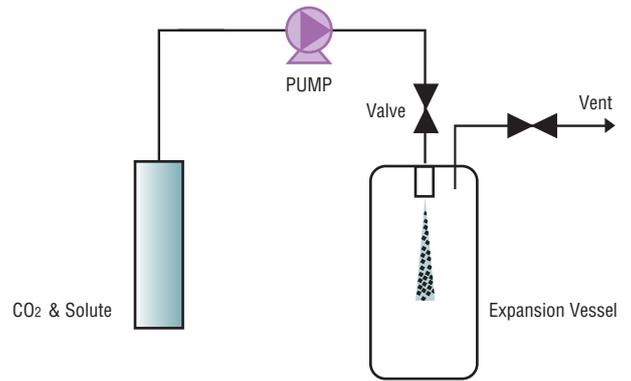
A certain amount of solution containing solute is inserted into the high-pressure container and supercritical fluid (Anti-Solvent) is injected (generally injected from the bottom of container for effective mixing). When anti-solvent is increased, the dissolving power of liquid solvent is decreased to extract solute as nano particles.

There are SAS and GAS methods. SAS method uses supercritical CO₂ as an anti-solvent and GAS method uses CO₂ gas.

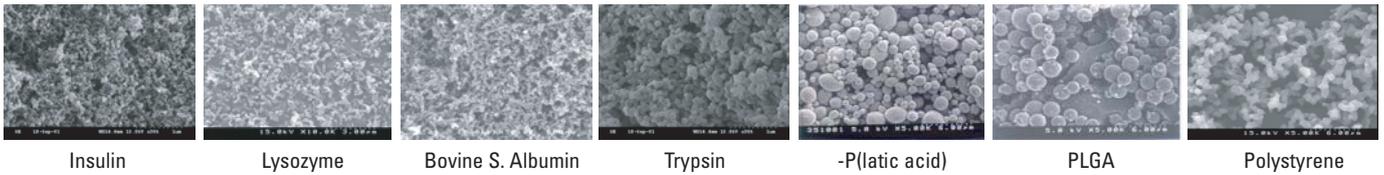


RESS(Rapid Expansion of Supercritical Solutions)

When the solute that should be converted to nano particles is dissolved into supercritical fluid and a micro spray nozzle is used to expand it instantly, supercritical fluid is converted into gas and lowers its dissolving capacity to separate the solute that was dissolved due to over-saturation.



Example



Application



Our Products Includes



Supercritical Extraction



Autoclave



Isostatic Press



Pressure Vessel



Autoclaves for Composite or Glass/Film