

Precipitation of RDX from acetone by supercritical carbon dioxide anti-solvent

서범준, 손원수, 이호연¹, 이근득², 김현수², 심정섭², 이윤우*
서울대학교; ¹한화종합연구소; ²국방과학연구소
(ywle@snu.ac.kr*)

A Supercritical Anti-Solvent (SAS) process is a crystallization process which utilizes a supercritical fluid as the anti-solvent to precipitate the solute from a liquid solvent. In a typical SAS process, the solution of solute and liquid solvent is sprayed through a nozzle into a high pressure cell filled with a flowing medium of supercritical fluid. By spraying the solution, atomization of the solution along with the mass transfer of both solvent and anti-solvent occur. The spraying characteristics of the solution are greatly influenced by the operating conditions such as the temperature, pressure, and flowrates which in turn change the thermodynamic and hydrodynamic characteristics of the phenomena. In this research, the solution consists of RDX in acetone, and the anti-solvent is supercritical or subcritical carbon dioxide. The effects of process conditions on the obtained particles are discussed.