

Optimal design of HMX recrystallization process with GAS process

김성호, 이신제, 이종민*, 이윤우, 김현수¹
서울대학교; ¹국방과학연구소
(jongmin@snu.ac.kr*)

Gas Anti-Solvent (GAS) process is a useful method for the recrystallization process. Properties like size and shape of the particle can be controlled by this process to make desired product. In this work recrystallization of Cyclotetramethylenetetranitramine (HMX) into beta-phase crystall with GAS process is designed and optimized. HMX is a powerful and relatively insensitive explosive which used in various industrial application. Since its particle size and shape are important properties for explosive materials, GAS process is an effective way to its treatment. The main purpose of this study is to develop a process flowsheet model for large-scale GAS processes and determine optimal process economics. The proposed process consists of a reactor, a separator, and recycle of carbon dioxide. An optimal operating point is also determined.