Effect of the Mn substitution on the hydrogen storage properties in Ti-V-Cr based metal hydride alloys

정헌도*
한국에너지기술연구원
(hdjung@kier.re.kr*)

The effect of partial substitution of Mn for V in the Ti-V-Cr alloy on the properties was investigated. When Mn was substituted for V in the Ti-V-Cr based metal hydride alloy, the Mn substituted Ti-V-Cr based metal hydride alloy had both a BCC phase and a C14 type of Laves phase through Ti-Mn bonding. The Laves phase with a C14 type of the Hexagonal Close-Packed (HCP) structure rapidly activated the metal alloy and then expanded the plateau pressure range. At the same time, the hydrogen storage capacity was increased because of increasing the hydrogen storage site. It was also revealed that the effect of Mn addition on the Ti-V-Cr based metal hydride alloy retarded pulverization and improved durability of Ti-V-Cr based metal hydride alloy.