

## Effects of Various Types of Fillers on the Rigid Polyurethane Foams

강민정, 강지웅, 김지문, 김우년\*

고려대학교

(kimwn@korea.ac.kr\*)

We investigated the thermal insulating and mechanical properties of rigid polyurethane foams with various types of fillers. PUFs were prepared from polyether polyols, polymeric 4,4'-diphenylmethane diisocyanate, silicone surfactant, amine catalysts, distilled water and cyclopentane as blowing agents. Properties of the PUFs were obtained by thermal conductivity analyzer and scanning electron microscopy and universal testing machine. When the liquid type fillers were added, the cell size and thermal conductivity of the PUFs found to decrease with the filler content up to 3wt% compared the PUFs added solid type fillers. In addition, when the hydrophilic solid filler was added, thermal conductivity and the cell size of the PUFs were decreased.

Acknowledgement: This research was supported by a grant (code BB3-101) from Carbon Dioxide Reduction & Sequestration Research Center, one of the 21st Century Frontier Programs funded by the Ministry of Science and Technology of Korea Government.