

The effects of carbon black, silica and calcium carbonate in virgin PE/ recyclePE/EPDM blends: Thermal properties & swelling analysis

Abstract

The effects of carbon black (CB), silica and calcium carbonate (CaCO₃) in virgin polyethylene (vPE)/recycle polyethylene (rPE)/ethylene propylene diene terpolymer (EPDM) blends were investigated. rPE was melt blended with EPDM in different ratio by using a Haake Rheomix. The characterization such as swelling analysis and thermal properties were examined. Results indicated that, vPE/rPE/EPDM blend with CB show best oil (ASTM IRM 903) and toluene resistant and also thermal properties compared with silica and CaCO₃.

Keywords

EPDM; rPE; Swelling analysis; Thermal properties; vPE