

Mechanical properties of alumina trihydrate filled polypropylene/ethylene propylene diene monomer composites for cable applications.

ABSTRACT

Polymeric materials such as polypropylene (PP), polyethylene (PE) and ethylene propylene diene monomer (EPDM) are widely used as insulators for cable applications. We investigated the effect of alumina trihydrate (ATH) loading on the mechanical properties of PP/EPDM blend. Preliminary study showed that PP/EPDM (60:40) was the optimum composition. ATH filled PP/EPDM composites was prepared by using twin screw extruder. In this study, the tensile properties and hardness of the composites were evaluated. The tensile modulus and hardness increased while elongation at break and tensile strength decreased with increasing ATH content. Scanning electron microscope was used to study the morphology of ATH in PP/EPDM blend.

Keyword: Alumina trihydrate; Composites; Mechanical properties; PP/EPDM blend.