

EXTRUDATE MORPHOLOGY OF ACRYLONITRILE BUTADIENE RUBBER AND ETHYLENE-METHYL ACRYLATE COPOLYMER BLENDS

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ABSTRACT

Extrudate morphology of mixes of Acrylonitrile Butadiene Rubber (NBR) and Ethylene-co- Methyl Acrylate polymer (EMA), having shifted extents of EMA from zero to hundred percent have been studied at three distinct temperatures (100°C, 120°C and 140°C) and also at diverse shear rates utilizing Scanning Electron Microscope (SEM) individually. The viscosities of the NBR/EMA mixes are diminishes consistently with increment in the shear rate recreating the pseudo plastic nature of the mixes. The impact of temperature on the liquefy thickness of the mixes was analysed and the shear rate–temperature superposition was produced. Pristine EMA exhibits improved surface finishes than its blends. Pristine NBR and NBR rich phases extrudates are rough and have the shape of a screwed thread. Topography of the surface relies upon the flow conduct and consequently on preparing conditions such as shear rate and temperature. Endeavours have been made to correlate the flow behaviour with extrudate morphology of the mixes.

KEYWORDS: Extrudate morphology, Pseudo plastic, Flow behaviour, Shear rate & Temperature