

# Preparation and Physicomechanical behaviour of EPDM and LLDPE Blends

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**Abstract**—The present investigation is aimed to prepare blends comprising of Ethylene Propylene Diene Monomer (EPDM) and Linear Low Density Polyethylene (LLDPE) with the help of two roll mill by melt blending process. The results of mechanical properties reveal that there is significant increase in tensile strength, hardness and puncture resistance with increase of LLDPE content in EPDM. The elongation at break for the blend increase with increasing EPDM content. The reason might be attributed to chemical cross linking of EPDM which restricts the mobility of the polymer chain and the amount of ductile LLDPE decreases. The reduction in tensile property, hardness and puncture resistance at higher content of EPDM might be because rubbery nature of EPDM. In addition, it is also observed that the increase of LLDPE content in EPDM matrix improves thermal stability of the blends. The improvement in thermal properties may be because of the increase chemical cross-linking in to blends.

**Keywords:** LLDPE, EPDM, Puncture resistance, Tensile strength, Thermal stability.