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(54) Microporous polyethylene film with good property of strength and permeability at high temperature

(57) The present invention relates to a microporous polyethylene film for use as battery separator. The microporous polyethylene film according to the present invention is characterized by having a film thickness of 5-40 μm, a porosity of 35-55%, a permeability from 2.5×10^{-5} to 10.0×10^{-5} Darcy, a puncture strength of at least 0.10 N/μm at 90 °C, a puncture angle of at least 30° at 90 °C, and a permeability from 2.0×10^{-5} to 8.0×10^{-5} Darcy after shrinking freely at 120 °C for 1 hour. The microporous polyethylene film in accordance with the present invention has very superior puncture strength and thermal stability at high temperature and takes place of less decrease of permeability due to low thermal shrinkage at high temperature, as well as superior permeability. Therefore, it can be usefully applied in a high-capacity, high-power battery to improve thermal stability and long-term stability of the battery.

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