

ABSTRACT

A battery separator which is a laminated polyolefin microporous membrane, comprising a polyolefin microporous membrane, and a modifying porous layer comprising a water-soluble resin or water-dispersible resin, and fine particles, the modifying porous layer being laminated on at least one surface of the polyolefin microporous membrane, wherein the polyolefin microporous membrane comprises a polyethylene resin and has (a) a shutdown temperature (a temperature at which an air resistance measured while heating the polyolefin microporous membrane at a temperature rise rate of 5°C/min reaches 1×10^5 sec/100 cc) of 135°C or lower, (b) a rate of air resistance change (a gradient of a curve representing dependency of the air resistance on temperature at an air resistance of 1×10^4 sec/100 cc) of 1×10^4 sec/100 cc/°C or more, (c) a transverse shrinkage rate at 130°C (measured by thermomechanical analysis under a load of 2 gf at a temperature rise rate of 5°C/min) of 20% or less, and a thickness of 16 µm or less, the shutdown temperature difference between the polyolefin microporous membrane and the laminated polyolefin microporous membrane being 4.0°C or less. A method of producing the same.

Provided is a battery separator with excellent adhesion and shutdown properties comprising a modifying porous layer and a polyolefin microporous membrane.