

ABSTRACT**IONIC POLYMER MEMBRANES**

Compositions and processes are disclosed for economical separation of fluid mixtures. Broadly, the present invention discloses ionic polymer compositions that are useful for perm-selective membrane separations. More particularly, ionic polymers of the invention comprise a plurality of repeating structural units having as a constituent part thereof organic ionic moieties consisting of nitrogen containing anions and/or cations. In the form of non-porous membranes, ionic polymers of the invention facilitate recovery of purified organic and inorganic products from fluid mixtures by means of perm-selective membrane separations. The present invention also provides methods for forming the ionic polymers, for example by treating selected nitrogen-containing organic polymers with acids, or treating a polymeric material comprising a plurality of carboxylate groups with an amine. Ionic polymer compositions of the invention are particularly useful for simultaneous recovery of a permeate product of an increased concentration, and a desired non-permeate stream, from a fluid mixture containing at least two compounds of different boiling point temperatures.
