



Sulfonated Pentablock Copolymer

Molder: None given

Moldmaker: None given

Material Supplier: None given

Designer : None given

OEM: Membrane Technologies B.V.

Supporting Documentation:

[ANTEC 2009](#)

[General Sulfonation Presentation](#)

Product Entry Description

A new sulfonated copolymer has recently been developed at Kraton Polymers and is being commercialized in 2009 to serve a number of industries that have responded favorably to sampling and testing. The key attributes are very high rate of water and ion transport that support a number of emerging applications described below. Technical description: The precursor polymer prior to sulfonation is a poly (t-butyl styrene-b-(ethylene-r-propylene)-b-styrene-b-(ethylene-r-propylene)-b-(t-butyl styrene) copolymer). (tBS-EP-S-EP-tBS). The styrene block is selectively sulfonated via acyl sulfate chemistry. Sulfonation levels (ion exchange capacity or IEC) from 0.4 to 2.0 meq/g polymer were made. Two grades are currently available as a solution and cast membrane: MD9200 (2.0 IEC) and MD9150 (1.5 IEC) The development of this patented new polymer and post-treating sulfonation process has required significant resources in terms of capital and manpower over the course of the last four years. A number of technical hurdles



have been addressed and overcome and we are pleased to be prepared to commercialize the products in 2009.

When cast onto Innovative Membrane Technologies 7Bore[®] hollow fiber membranes, Kraton Sulfonated Polymers create a layer which can achieve nanofiltration of water sources. Multiple 7Bore membranes are contained in a filter element which combines unique properties of high strength, high water flux rates, and chemical resistance, allowing for efficient, effective water treatment as part of a larger water purification or desalination plant.

Why was this process chosen ?

Innovative Membrane Technologies (IMT) patented process for creating 7-bore hollow fiber tubing offers an ultrafiltration membrane that combines the properties of high strength and hydrophilicity, resulting in very low energy consumption rates for water purification. When Nexar sulfonated polymers from Kraton Polymers are cast onto the membrane, it creates a nanofiltration membrane useful in water purification and other applications where higher levels of filtration are necessary.