Nitto

HYDRANAUTICS
Nitto Group Company

HYDRACoRe®

Nanofiltration Solutions for Color Removal, Dye Concentration and De-salting

Hydranautics' HYDRACoRe (Hydranautics Color Removal) membranes are sulfonated polyethersulfone-based spiral-wound, cross-flow elements that can be used for food or potable water as well as industrial applications in which color reduction with minimal removal of dissolved salts is desired. The key advantage of the HYDRACoRe technology is the membranes' superior chlorine tolerance. For example, HYDRACoRe membranes tolerate up to 100 ppm chlorine during short term cleansing.

HYDRACoRe cross-flow element systems can provide a cost-effective and environmentally friendly alternative to activated carbon-based color adjustment systems in a variety of applications. The membranes reject high molecular-weight organic compounds such as colorants and pass sugars, minerals, alcohol and flavor components into the finished product. They can also be used by colorant manufacturers to concentrate color and polish color from wastewater streams.

HYDRACoRe Product Offerings:

Hydranautics' HYDRACoRe nanofiltration membranes are offered with the following rejection profiles

HYDRACoRe10	10-20% NaCl	~3000 Daltons
HYDRACoRe50	50-60% NaCl	~1000 Daltons
HYDRACoRe70pHT	70-80% NaCl	~700 Daltons

Notice: Rejection efficiencies are dependent upon feed pressures; greater feed pressures typically yielding higher rejections. In addition to the studies done on coffee, grape juice, soy sauce, red wine and tea, additional studies have been completed on the rejection efficiencies of propylene glycol, glucose, sucrose and dyes.

Available Sizes and Configurations:

Fiberglass-wrapped elements

- 4040, 8040 with 30 or 46 mil feed spacer

Full-fit, net-wrapped elements

- 3838, 4040, 8038, 8040 with 30 or 46 mil feed spacer

Advantages of using HYDRACoRe vs. Activated Carbon (AC) Adsorption:

- Elimination of the AC as a waste stream
- Elimination of "trap filtration" to remove AC dust in the process stream
- Elimination of the need to receive, ship, change out and ship AC, as well as capture its dust in the atmosphere
- Elimination of AC performance-variability as the carbon reaches adsorption capacity

Key Benefits:

- Removes and adjusts color
- Tolerates pH variation well
- High temperature compatibility up to 70 ˚C for HYDRACoRe70pHT
- Rejects low molecular weight organics while passing salts, sugars, alcohol and water
- High and stable permeate flux
- Prevents scaling due to low salt rejection
- Reduces anti-scalant costs
- Eliminates permeate remineralization costs
- Tolerates chlorine well for increased cleaning efficiency
- Green technology

Food and Beverage Applications:

- Color removal/ adjustment for alcoholic beverages such as vodka, whiskey, brandy, rum, wine, port, sherry
- Concentration/ de-colorization of amino acids and sugars
- De-colorizing of corn syrup, glucose and dextrose-type syrups
- De-colorizing and concentrating of fish, meat and vegetable extracts for seasoning manufacturing (done by Nitto) for use in food-blending applications
- Removal of color in flavorings and extracts such as vanilla and almond for use in food blending applications
- Color removal/ adjustment of fruit juices and vegetable juices
- Color removal from liquid sugar, spices, and vegetable oils
- Concentration of oligosaccharides (done by Nitto)
- De-coloring of tabasco, worcestershire, fish extracts and soy sauces
- Color adjustment or removal from corn syrup, maple syrup, molasses, liquid coffee, tea, vinegar, wine vinegars

Drinking Water Applications:

- Color removal in municipal drinking water and ground water

Chemical Manufacturing Applications:

- De-colorizing in different types of fixed bed processes in chemical production
- Removal of color in fine chemicals

Industrial Applications:

- Color removal from kraft pulp mill water and paper waste streams, wastewaters in textile dyeing operations, tannery wastewater effluent and electroplating operations
- Reclaim spent caustic brine (1% caustic, 10% brine) from ion-exchange backwash for HYDRACoRe70pHT
- Removal of unwanted color compounds from dyes and colors from wastewater
- Flexigraphic ink and dye concentration

Solutions You Need.
Technologies You Trust!

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