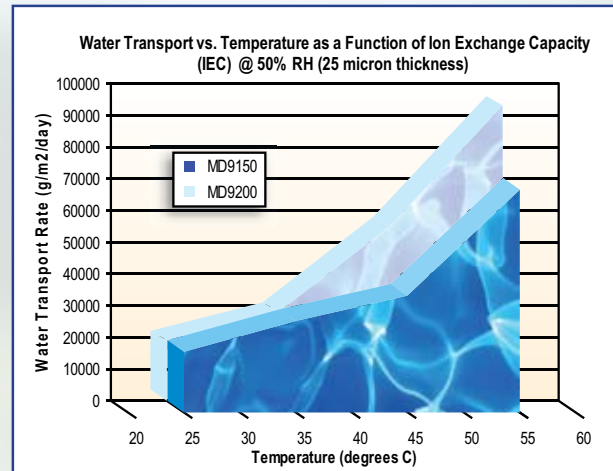


Humidification and Dehumidification

NEXAR™ polymers' high Moisture Vapor Transmission Rate (MVTR) makes it the material of choice for humidification and dehumidification applications. The removal or addition of moisture in industrial, medical, commercial and residential applications is important to health, equipment reliability and lower energy usage. NEXAR™ polymers' water vapor transport attributes sets a new standard for performance of non-porous membranes.

Key Benefits of NEXAR™ Polymers:

- Flexibility of design and compatibility of existing processes
- High moisture vapor transmission rate (latent heat transfer)
- Excellent chlorine resistance



Membrane Properties:

Membranes cast from the above solutions offer excellent dry and wet strength. NEXAR™ polymers do not require any special packaging and can be shipped dry without causing any performance issues. Water transport rates greater than 25k g/m²/day are possible with our membrane. The lower IEC films still offer excellent water transport but also pick up less water and provide better dimensional stability. Due to the structure of the NEXAR™ polymer molecule, continuous ionic domains form during the casting process, providing a pathway for water and ion transport. In addition, these unique polymers offer good general chemical resistance and are resistant to chlorine attack. The following tables list some of the performance properties measured for our commercially available grades.

Film/Property	IEC meq/g	Young's Modulus (MPa)	Tensile @ Yield (MPa)	Elongation @ Yield (%)	Tensile @ Break (MPa)	Elongation @ Break (%)
MD9200 Dry	2.0	340	9	4.5	7	57
MD9150 Dry	1.5	480	13	4	10	100
MD9200 Wet	2.0	30	No Yield	-	3.4	90
MD9150 Dry	1.5	75	No Yield	-	3.1	70

Solution Properties:

Kraton Polymers offer two polymer grades to meet your product requirements. Our proven technology has been tested on commercial casting lines. The following table lists the properties of our current polymer solutions:

Product	Polymer Content (wt %)	Solvent	VOC (wt %)	Flash Point (PMCC)	Solution Viscosity (0.2-20°C and 1% IEC* Shear rate)	Specific Gravity
2.0 IEC MD9200	10 min - 12 max	Cyclohexane Heptane	89 ± 2	-4 °F	500-3000	0.77-0.80
1.5 IEC* MD9150						

*IEC = Ion Exchange Capacity (meq/g)



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Legal Disclaimer:

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Delivering
New Solutions
 Today



Polymers
 Designed for
 Your Success

NEXAR™ polymers offer a new set of key performance attributes that can be used to unlock the solutions in a myriad of applications ranging from water desalination to improved performance textiles and clothing to industrial separation applications.

Contact us to discuss how NEXAR™ polymers and membranes can fulfill your critical needs.

Delivering New Solutions for Critical Challenges



NEXAR™ polymers offer a new set of features and benefits for water transport, filtration and separation.

NEXAR™ polymers offer a new set of features and benefits for water transport, filtration and separation. Today's challenges require material solutions that can perform these tasks better, more efficiently, and more economically. Kraton introduces new NEXAR™ sulfonated polymer membrane technology.

Kraton Polymers LLC introduces the first two polymer grades in the NEXAR™ product family for water transport, filtration, and separation applications: NEXAR™ MD9200 and MD9150 are available as either a polymer in solution or a polymer membrane. MD9200 has an ion exchange capacity (IEC) of 2.0 meg/g and MD9150 has an IEC of 1.5 meg/g. MD9200 and MD9150 are the first grades in a developing family of sulfonated block copolymers. This new polymer architecture demonstrates outstanding capabilities. Whether used to coat or laminate a substrate, or cast as a pure membrane film, NEXAR™ polymers feature:

- High water flux rate
- Ion selectivity
- Chemical resistance to chlorine
- Low electrical resistance
- High water transport rates
- Mechanical strength (both wet and dry)
- Good dimensional stability in wet and dry conditions
- The membranes are stable under ambient conditions and do not require special packaging for shipment
- NEXAR™ polymers can be applied using current commercial coating and laminating lines

Water Management

Increasing global demand for water, coupled with a finite supply, has resulted in an urgent need for tomorrow's solutions, today. NEXAR™ membranes offer advanced material properties for today's challenging application requirements. Today's solutions often require complex multi-stage equipment and pretreatment because they lack the chlorine resistance and high flux rates required to efficiently and economically process water. These challenges require a solution that reduces system cost while increasing throughput, thus allowing efficiency at a lower energy cost.

NEXAR™ Polymers Offer a Performance Breakthrough:

Significant increase of chlorine resistance and higher rates of flux, thus optimizing the process, and reducing cost and energy requirements. NEXAR™ polymers are the clear choice for water system designers.



Key Benefits of NEXAR™ Polymers:

- High flux
- Good selectivity
- Lower energy costs for water processing
- Improved chlorine resistance
- Excellent mechanical strength, wet and dry
- Good mechanical properties at both high and low pH ranges
- Low electrical resistance
- Dimensional stability

NEXAR™ membranes offer advanced material properties for today's challenging application requirements.

High Performance Breathable Fabrics

Perspiration is the body's way of protecting itself from overheating. In order to maintain the energy balance of the human body, moisture must be transported quickly to the outside. NEXAR™ selectively permeable membranes and coatings provide a unique solution to this problem by allowing large amounts of moisture to be moved away from the skin quickly, maintaining a comfortable microclimate for your body. NEXAR™ polymers also mean performance reliability. NEXAR™ polymers can be formed into nonporous membranes which allow optimum moisture management performance over time. NEXAR™ polymers also have the unique ability to selectively control what it will allow through its membrane. The selective permeability allows a tremendous amount of water to pass through while blocking potentially harmful chemicals.

NEXAR™ polymers unique chemistry also allows you to select the equipment and process used for application that best suits your business – no new equipment or processes to deal with. NEXAR™ has been engineered to perform well in both direct or transfer coating applications, as laminated membranes or as a composite lamination system.

Endless Possibilities for Textile Innovators:

- High performance athletic apparel and footwear
- Outdoor survival gear (tents, sleeping bags, etc.)
- Military uniforms and protective biochemical garments
- Industrial chemical protective suits
- Medical fabrics for barrier protection
- Foul weather clothing
- Geotextile applications

Key Benefits of NEXAR™ Polymers in Breathable Fabrics:

- Excellent moisture transmission rates
- Processing freedom - Can be applied using current commercial equipment
- High strength in wet or dry environments
- As temperature increases so does our performance
- Light-weight flexible membrane
- Bleach resistance

