RALEX® MEMBRANE AMHPP

ANION-EXCHANGE MEMBRANE FOR **ELECTRODIALYSIS, ELECTRODEIONIZATION** AND **MEMBRANE ELECTROLYSIS**.
COMES IN 3 VERSIONS: ROLLS, SHEET.

BASIC MATERIAL SPECIFICATION

Ion-exchange group	$R-(CH_3)_3N^+$	quaternary ammonium
Ionic form – counter ion	Cl^-	chloride
Basic binder on base	PE	polyethylene
Fitting fabrics	PP	polypropylene

MECHANICAL PROPERTIES

Thickness of dry membrane		tl_s [mm]	< 0.45
Thickness of swelled membrane		tl_z [mm]	< 0.70
Swelled differences Δ (in demi-water)	thickness	Δ tl [%]	< 50
	length	Δ l [%]	< 7
	width	Δ w [%]	< 10
	weight	Δ m [%]	< 65
Hydrodynamic permeability for water	Δ P = 1 bar	[l/h.m^2]	0

ELECTROCHEMICAL PROPERTIES

Resistance in 0.5 M NaCl	surface	R_A [Ω.cm^2]	< 8
(measured under DC current)	specific	R_S [Ω.cm]	< 120
Transport number	0.5/0.1M KCl	t^M	> 0.95
Permselectivity	0.5/0.1M KCl	P_{STAT} [%]	> 90

OTHER PROPERTIES

Good thermal resistance:	
outside membrane stack (regeneration, sanitation)	up to 1 hour 90 °C, more than 1 hour 65 °C
inside membrane stack	under DC current 40 °C, for a short time 45 °C
Resistance against aggressive chemicals and fouling materials	
Long-term pH stability on a scale of 0 to 14, excluding strong oxidizing chemicals	
Possibility of frequent regeneration by acidic and alkaline chemicals	
High resistance against some industrial membrane poisons	
Long life cycle	

CERTIFICATES

MEGA is ISO-certified by TÜV.

Material is ROHS compliant (European Union Directive 2011/65/EU).

Material is REACH compliant (European Union Regulation No. 1907/2006).

AMHPP have Sanitary and Epidemiology Certificate for whey and drinking water.

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RALEX® MEMBRANE: BASIC INFORMATION

The ion-exchange membrane RALEX® could be used in a variety of applications with a wide pH scale, in temperatures from 10 °C to 50 °C. Suitability of use of the RALEX® membrane must be always consulted with MEGA.

STORAGE

The membrane is shipped dry. If shipped wet, the membrane must remain sealed and refrigerated before use. Membrane should be stored in a **cool, dry place**.

HANDLING

Any handling with the RALEX® membrane is recommended in the swelled state when it is flexible and less prone to deformation. It is necessary to minimize its removing from the swelling solution to prevent drying out, which causes dimensional changes that can lead to significant defects. The RALEX® membrane can exceptionally dry out and swell again, but MEGA does not recommend this procedure. It is necessary to prevent any damage to the membranes by careless handling (ruptures, breaks, tears, etc.).

SWELLING BASIC INFORMATION

Before using the RALEX© membrane is essential **to prepare the membrane for operating service** by swelling. During the process of swelling the physical, mechanical and electrochemical properties of the membrane are changing and the membrane becomes ion-conductive. During this time membrane will change its dimensions slightly. Once the membrane reaches its steady state with no further changes in the properties, it is ready for use.

STANDARD SWELLING

Standard swelling of the RALEX® membrane takes place in demineralized water (or at least in potable water, after prior consultation with MEGA) in temperatures from 25 °C to 45 °C for no less than **48 hours**. Place the membrane into the water or swelling solution of prescribed quality and let it rest for the required period. During the process of swelling, it is necessary to check if the membrane is completely immersed and it is essential to eliminate air bubbles from the surface of the membrane.

SPECIAL SWELLING WITH A CHANGE OF THE ORIGINAL ION-EXCHANGE MEMBRANE

Special swelling takes place in a proper swelling solution with subsequent conditioning and equilibration of the membrane. Procedures can differ with regards to the specific use of the membrane and must be consulted with MEGA.

CAUTION

To prevent damage and deterioration of the membrane, avoid contact with surface-active substances (detergents), organic substances, oxidants and other so-called membrane poisons that can irreversibly contaminate the membrane material.

SUMMARY

For use in the electro-membrane processes, the RALEX® membranes must be in the swelled "working state." Subsequent operations with the membranes, especially their installation to technology, are much impacted by the perfection of swelling. Therefore, it is necessary to pay undivided attention to the entire process of swelling.

For further versions, additional information and technological support, please contact our sales department at **sales@mega.cz**.

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