DOWEX™ MR-5 LC NG

Mixed Ion Exchange Resin for Demineralization in Nuclear Water Applications

Product	Type	Matrix	Functional group
DOWEX™ MR-5 LC NG	1:1 by equivalents cation:anion	Styrene-DVB, gel	Sulfonic acid Quaternary amine

Guaranteed Sales Specifications		OH^- form	Li^{+7} form
Total exchange capacity, min.	eq/L	1.2	2.0 (H^+ form)
	kgr/ft³ as $CaCO_3$	26.2	43.7
Water content	%	60 max.	46 - 52 (H^+ form)
Bead size distribution†			
> 1,200 μm, max. (16 mesh)	%	2	2
< 420 μm, max. (40 mesh)	%	1	1
< 300 μm, max. (50 mesh)	%	0.2	0.1
Whole uncracked beads, min.	%	95	95
Crush strength			
Average, min.	g/bead	350	—
> 200 g/bead, min.	%	95	—

Ionic conversions

Cation resin					Li^{+7} 99%, min.
Anion resin	OH^- 95% min.	Cl^- 0.1% max.	CO_3^- 5% max.	$SO_4^=$ 0.1% max.	

Trace metals, ppm dry resin, max.

	Na	Fe	Cu	Al	Mg	Ca	Co	Pb	Hg	Heavy metals (as Pb)
Cation	50	50	10	50	50	50	30	10	10	10
Anion	40	50	10	50	50	50	30	10	10	10

Typical Physical and Chemical Properties		OH^- form	Li^{+7} form
Particle density	g/mL	1.08	1.22
Shipping weight**	g/L	660	
	lbs/ft³	41	

Recommended Operating Conditions

- Maximum operating temperature: 60°C (140°F)
- pH range: 0-14
- Bed depth, min.: 800 mm (2.6 ft)

† For additional particle size information, please refer to Particle Size Distribution Cross Reference Chart (Form No. 177-01775)

** As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Typical Properties and Applications

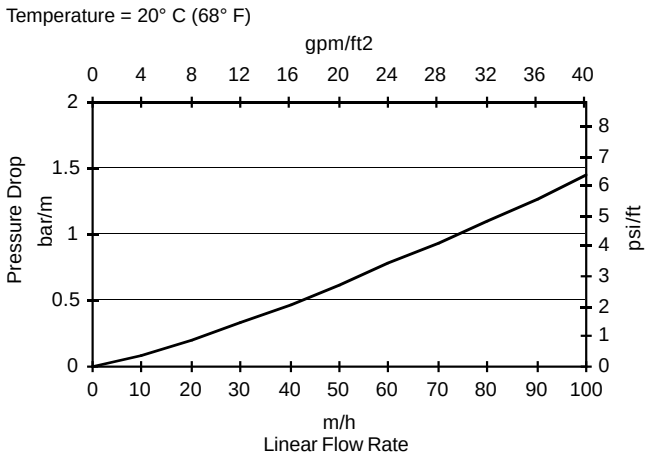
DOWEX™ MR-5 LC NG resin is an equivalent mixture of DOWEX HGR NG (Li^{+7}) and DOWEX SBR LC NG (OH) resins. DOWEX MR-5 LC NG resin has a low level of metallic impurities which makes it suitable for the production of high quality water. This resin is used for the purification of the chemical and volume control system in PWRs. The removal of radioactive species is accomplished without lowering the pH as $Li^{+7}OH$ is the normal pH control additive. The cation component, DOWEX HGR NG (Li^{+7}) resin, exhibits outstanding selectivity for Cs and Co isotopes resulting in high decontamination factors for these species. Applications include:

- reactor coolant clean-up
- spent fuel pond water deactivation
- radwaste treatment

Packaging

50 liter or 5 cubic foot fiber drums

Figure 1. Pressure Drop Data



For other temperatures use:

$P_T = P_{20°C} / (0.026\ T_{°C} + 0.48)$, where P ≡ bar/m
$P_T = P_{68°F} / (0.014\ T_{°F} + 0.05)$, where P ≡ psi/ft

DOWEX™ Ion Exchange Resins
For more information about DOWEX resins, call the Dow Water Solutions business:

North America:	1-800-447-4369
Latin America:	(+55) 11-5188-9222
Europe:	(+32) 3-450-2240
Pacific:	+60 3 7958 3392
Japan:	+813 5460 2100
China:	+86 21 2301 9000

http://www.dowwatersolutions.com

Form No. 177-01794-0209