



DOWEX™ Retardion 11A8 50-100 Mesh

Amphoteric Resin Containing Both Weak Acid Cation and Strong Base Anion Functionality within the Same Resin

Product	Type	Matrix	Functional group
DOWEX™ Retardion 11A8 50-100 Mesh	Amphoteric resin	Styrene-DVB, gel	-COOH/-N(CH ₃) ₃

Guaranteed Sales Specifications		-COOH	-N(CH ₃) ₃
Total exchange capacity, min.	meq/mL	1.1	1.2
	kgr/ft ³	24.1	26.3
Residual anion capacity, max.	meq/mL		0.04
	kgr/ft ³		0.88
Water content	%		43 - 48
Whole uncracked beads, min.	%		90

Typical Physical and Chemical Properties

Particle size range	Mesh	50 - 100
Shipping weight**	g/L	720
	lbs/ft ³	44

Recommended Operating Conditions

- Maximum operating temperature 100°C (212°F)
- pH range 4 - 10
- Bed depth, min. 800 mm (2.6 ft)
- Flow rates:
 - Service 2 - 10 m/h (0.4 - 4 gpm/ft²)
 - Regeneration 2 - 10 m/h (0.4 - 4 gpm/ft²)
 - Rinse 2 - 10 m/h (0.4 - 4 gpm/ft²)
 - Backwash 3 - 4 m/h (0.6 - 0.8 gpm/ft²)
- Total rinse requirement 5 - 20 bed volumes
- Regenerant:
 - Type Water
 - Temperature Ambient or up to 90°C (195°F)

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

Typical Properties and Applications

DOWEX™ Retardion 11A8 resin is a unique resin product type prepared by exchanging and then polymerizing a cationic monomer inside the matrix of an anion resin. This yields a linear polymer trapped inside the Crosslinked ion exchange resin. The resulting resin system is physically and chemically stable, containing a mixture of cation and anion exchange sites, which are in very close proximity such that the functional groups can associate with each other and partially neutralize each other's electrical charge. These selfadsorbed sites have an attraction for mobile anions and cations from solutions which are passed through and can retain them from a bulk stream. Adsorbed ions can be displaced from the resin using water as the eluant.

DOWEX Retardion 11A8 resin is generally operational as an ion retardation resin at any pH above 4. At lower pH, this resin type will adsorb acids strongly, but excessive water is required to rinse an acid from the resin; under such conditions, ion removal and regeneration becomes impractical.

Since ion retardation is based upon the reversible adsorption of electrolytes, this resin is best utilized in a column operation. The solution to be treated is fed onto the resin bed until the ion-adsorbing capacity of the utilized. The adsorbed ions can then be eluted from the resin bed with water.

In applying the DOWEX Retardion 11A8 resin, the strength by which an ion is adsorbed by the resin varies with the type of ion, the concentration of the solution, the temperature of the operation, the rinse-out level of the resin and the flow rates applied. In general, the order of selectivity parallels the selectivity of the corresponding ion exchange resin. The ion retardation resin can be applied as a purification tool for the deionization and/of fractionation of a process stream in a number of applications such as:

- Removal of salts from organic solutions
- Salt removal from caustic in cell effluent
- Ion chromatographic separations

where either the ionic concentrations are too high for economical processing by ion exchange resins or to fractionate ionic mixtures where the costs of the eluting or regenerating chemicals would be too costly.

Packaging

5 cubic foot drums

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

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Warning: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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