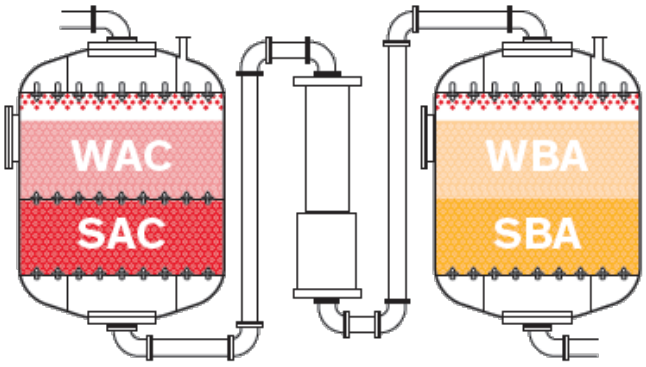
AmberLite™ Ion Exchange Resins for Layered Bed Systems



Key benefits of a layered resin bed include:

- Significant capital cost and footprint savings compared to using the weak and strong resins in two separate vessels.
- Higher throughput capacity versus a single bed strong base anion (SBA)/ strong acid cation (SAC) because the weak base anion (WBA) / weak acid cation (WAC) has a higher capacity and better regeneration efficiency than the SBA/SAC
- Efficient use of the same chemicals to regenerate both the SBA /SAC then the WBA/WAC
- Lower operating costs compared to a single SBA/SAC bed
- WBA resins remove organic matter more efficiently, protecting the SBA and maintaining system performance

Overall efficiency and throughput of a demineralization system can be improved by utilizing weak resins in combination with strong resins. Using weak and strong resins in a layered bed configuration in a single vessel provides significant capital cost and footprint savings compared to using the resins in two separate vessels.
Selecting the right ion exchange resin for layered beds is crucial as the design configuration is made possible by the density and particle size differences between the weak and strong resins used. Upon exhaustion, the backwashing operation separates the resin layers that may have become partially mixed during service. In order for the full advantages of a layered bed to be realized, good resin separation is important

Recommended AmberLite™ Ion Exchange Resin Pairs for Layered Beds	AmberLite™ **HPR1300 H**	AmberLite™ **HPR1300 Na**	AmberLite™ **HPR2800 H**	AmberLite™ **HPR4200 Cl**	AmberLite™ **HPR4200 OH**	AmberLite™ **HPR4580 Cl**
DuPont™ AmberLite™ **HPR8300 H**	**P**	**A**	**P**			
DuPont™ AmberLite™ **HPR9600**				**P**	**P**	**P**
DuPont™ AmberLite™ **HPR9500**				**P**	**P**	**P**

P = Promoted A = Acceptable

Use of inert may be required depending on system design.

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