



## **DOWEX™ Ion Exchange Resins**

Recommendations for De-Mixing a DOWEX Layered Anion Resin Bed

### **Procedure**

The layered bed grade resins are designed for optimal separation, but if as a consequence of a transitory hydraulic upset (e.g., failure of the compaction pump, uneven distribution, etc.) or heavy fouling of the weak base anion component causes the resins to become excessively mixed, the following procedure can be applied to restore the original condition:

1. Proceed with a cleaning treatment (if the resin is fouled) and then a double regeneration. Allow the bed to settle.
2. Backwash the bed at 1-2 m/h for about 2-4 hours. (The weak base anion resin will be expanded while the strong base anion resin will remain in place. The strong base anion resin beads within the expanded weak base anion resin bed will settle downward.)
3. Compact the bed.
4. Reduce the flow down to 2-3 m/h and backwash the bed at this velocity for about 2-4 hours. (The weak base anion resin will stay compacted while the strong base anion resin will settle. The weak base anion resin beads within the expanded strong base anion resin will rise.)
5. Stop the flow and let the whole bed settle down.
6. Proceed with a double regeneration.

An alternative to this procedure makes use of the fact that an 8-10% NaCl brine solution has a density between those of the weak base and strong base anion resins (1.06-1.07 g/mL). This procedure is then as follows:

1. Proceed with a single regeneration.
2. Introduce an 8-10% NaCl brine solution, if possible from the bottom, making sure that all the resin is in contact with the right concentration (about 2 bed volumes).
3. Allow a few hours for separation, if possible overnight. Periodic agitation of the bed using 15 minute air-brushing (see [Form No. 177-01852](#)) may help with resin movement.
4. Displace the brine with demineralized water (from the top).
5. Proceed with a double regeneration.

**DOWEX™ Ion Exchange Resins**  
**For more information about DOWEX**  
**resins, call the Dow Liquid Separations**  
**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.dowex.com>

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.

Notice: No freedom from any patent owned by Seller or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Seller assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

