

Leachables

A natural characteristic of all ion-exchange resins is the leaching (bleeding) of trace levels of compounds (extractables). At some level, all materials leach. If you look hard enough at low enough detection limits, you'll find something. Some of the most likely chemicals that can leach from strong acid cation resins are:

4-phenolsulfonic acid, 4-sulfobenzoic acid, 4-sulfobenzoate esters, and sulfonated polystyrene.

Anion resins generally leach more than cation resins.

Chemicals that can leach from anion resins are: trimethylamine from Type 1 anion resin, dimethylamine from weak base anion resin, and acetaldehyde from Type 2 anion resin. Trimethylamine gives Type 1 anion resins their characteristic fishy odor and acetaldehyde gives Type 2 anion resins a fruity or alcohol-like odor.

New resins can initially leach as much as several parts per million of organic chemicals. Properly seasoned resins leach very little, as little as a few parts per billion. In addition, new resins contain traces of chemicals used in the manufacturing process such as zinc chloride (or other catalysts) and ethylene dichloride (or other solvents). Poorly manufactured resins can contain unreacted divinylbenzene, styrene and/or other ingredients.

Also See: TDS - Conditioning of Ion Exchange Resins

