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Episode 8 Show Notes – Mixing Resins for Fun & Sport

This episode is about mixing resins not Mixed Bed Resin.

- Anion Resin – Chloride form specialty resin used to remove sulfates, nitrates, tannins, alkalinity
- Cation Resin – sodium form softening resin used to remove hardness – calcium, magnesium

When these resins are in separate tanks the cation always goes ahead of the anion tank. As a result, the hardness minerals are removed before the water goes through the anion resin.

Both are regenerated with sodium chloride – salt. Sodium (Na) exchanges with hardness minerals; Chloride (Cl) exchanges with anions – sulfate, nitrate, etc. Use of this common regenerant creates the opportunity to combine the resins in one tank. Anion resin is lighter and rests at the top of the resin bed; cation is beneath it.

A potential problem may occur as a result if the water hardness is above 6-8 grains hardness.

- During regeneration the ion "exchange" happens. The minerals (calcium) are being washed away and the salts (contaminant varies depending on desired outcome) are also being washed away. These "waste" products foul the anion resin and combine to create calcium carbonate, a cement like substance which blocks the drain line.

How to avoid the problem.

- Use separate tanks for cation and anion.
- Add phosphoric acid to the brine. By acidifying the calcium remains in solution.
    - Pro Res Care Easy Feeder (Manufactured by Pro Products may purchase direct or from local supplier)
    - Res Up Feeder (Manufactured by Clack – purchase only from local supplier)

How to repair.

- Clean the drain line by breaking up the calcification.
- Portions of seal pack and injectors may need to be replaced. Best to rebuild the valve before putting back in service.

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