REV 0421

Capacity Estimations

Here is a quick method for estimating resin throughput capacities from conductivity in micromhos/cm.

Assumptions:

1. PH = 6 to 8
2. Each ppm as Calcium Carbonate ($CaCO_3$) = 2 micromhos/cm, so micromho/cm divided by 34 equals loading in grains/gal. (Each grain per gallon equals 17.1 ppm as $CaCO_3$).
3. Assume 90% of capacity is used, mixed bed endpoint is 1 megohm and two bed endpoint is 100,000 ohm.

TYPE OF RESIN	RESINTECH NAME	CAPACITY IN KILOGRAINS/CU.F.	
		90%	90%
Cation Resin	CG8-H	36	32
Anion Resin	SBG1-OH	23.5	21
Mixed Bed	MBD-10	12	10.7

To calculate the capacity from the conductivity reading, multiply the resin's capacity times 34 times 1000, all divided by the conductivity.

EXAMPLES

What is the cation resin capacity of a water with 250 micromhos conductivity?

Using 90%: (36 X 34 X 1000)/250 = 4896 gallons per cubic foot CG8-H

What is the anion resin capacity of a water with 250 micromhos conductivity?

Using 90%: (23.5 X 34 X 1000)/250 = 3196 gallons per cubic foot SBG1-OH

What is the mixed bed resin capacity of a water with 250 micromhos conductivity?

Using 90%: (12 X 34 X 1000)/250 = 1632 gallons per cubic foot MBD-10

1. A grain is an archaic way of expressing weight. 7000 grains = 1 pound 17.1 ppm (as $CaCO_3$) = 1 grain/gallon
   Resins are rated in thousands of grains per cubic foot (or kilograins - kgrns)
2. The conversion from eq/liter (or meg/ml) to kilograins/cu ft is 1 meq/ml = 21.8 kgrn/cu ft

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INNOVATIONS IN ION EXCHANGE

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