

**RESINTECH WACMP** is a hydrogen form macroporous weak acid cation resin. WACMP is an exceptionally high capacity resin and can be regenerated at close to 100% acid efficiency. *RESINTECH WACMP* has low swelling and high physical strength when compared to gel weak acid cation resins. It is intended for all hydrogen cycle dealkalizer applications, as a component resin in complex demineralizers, and for metals removal in waste treatment applications (when ordered in the sodium form). *RESINTECH WACMP* is available in the hydrogen form or in the sodium form (when ordered as WACMP-Na).

## FEATURES & BENEFITS

- **MACROPOROUS STRUCTURE**

Gives greatly increased life in stressful applications where resin degradation due to thermal and oxidative effects is anticipated

- **HIGH REGENERATION EFFICIENCY**

Carboxylic functional groups yield high operating capacities and almost 100% regeneration efficiency

- **SUPERIOR PHYSICAL STABILITY**

93% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop

- **CONTROLLED PARTICLE SIZE**

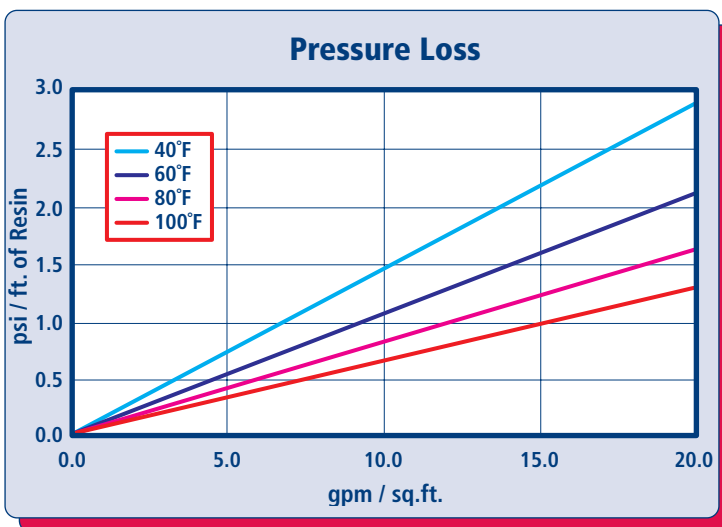
16 to 50 mesh size provides a low pressure drop and superior kinetics

- **COMPLIES WITH US FDA REGULATIONS**

Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the US FDA

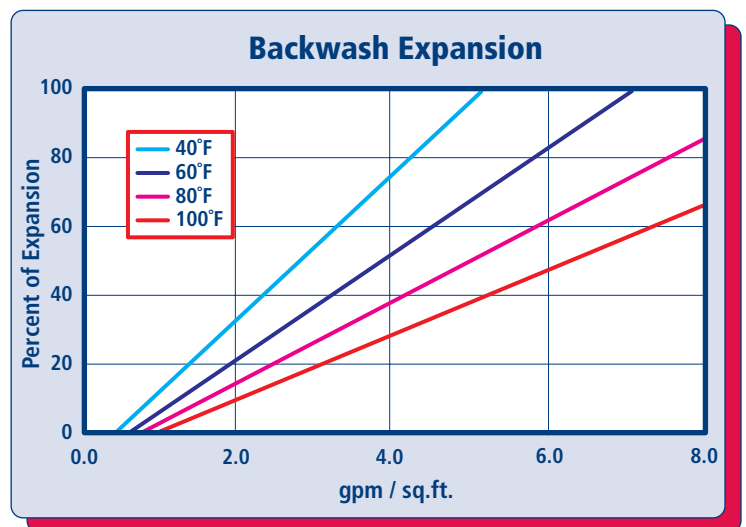
Prior to first use for potable water, resin should be backwashed for a minimum of 20 minutes, followed by 10 bed volumes of downflow rinse.

## HYDRAULIC PROPERTIES



### PRESSURE DROP

The graph above shows the expected pressure loss of *ResinTech WACMP* per foot of bed depth as a function of flow rate at various temperatures.



### BACKWASH

The graph above shows the expansion characteristics of *ResinTech WACMP* as a function of flow rate at various temperatures.

## PHYSICAL PROPERTIES

Polymer Structure	Acrylic/DVB
Polymer Type	Macroporous
Functional Group	Carboxylic acid
Physical Form	Spherical beads
Ionic Form as shipped	Hydrogen
Total Capacity	
Hydrogen form	>3.8 meq/mL
Sodium form	>2.5 meq/mL
Water Retention	
Hydrogen form	43 to 60 percent
Approximate Shipping Weight	
Hydrogen form	47 lbs./cu.ft.
Sodium form	47 lbs./cu.ft.
Swelling, H to Na	50 to 60 percent
Screen Size Distribution (U.S. mesh)	16 to 50
Maximum Fines Content (<50 mesh)	1 percent
Minimum Sphericity	93 percent
Uniformity Coefficient	1.7 approx.
Resin Color	White to Tan

Note: Physical properties can be certified on a per lot basis, available upon request

## SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature	
Hydrogen form	212°F
Sodium form	180°F
Minimum bed depth	30 inches
Backwash expansion	25 to 50 percent
Minimum operating pH	>5 SU
Regenerant Concentration	
Hydrogen cycle	1 to 5 percent HCl
Hydrogen cycle	0.8 to 8 percent H <sub>2</sub> SO <sub>4</sub>
Regenerant level	Approx 120% of theoretical
Regenerant flow rate	0.3 to 1.5 gpm/cu.ft.
Regenerant contact time	>30 minutes
Displacement flow rate	Same as dilution water
Displacement volume	10 to 15 gallons/cu.ft.
Rinse flow rate	Same as service flow
Rinse volumet	35 to 60 gallons/cu.ft.
Service flow rate	1 to 5 gpm/cu.ft.

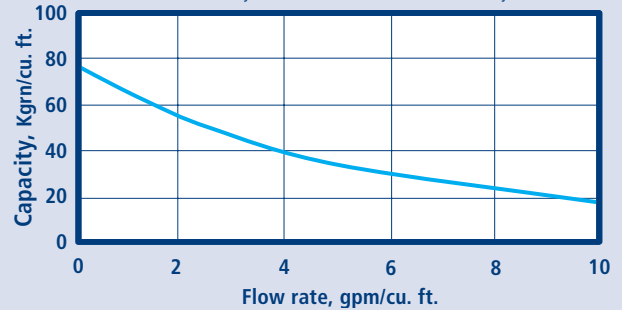
Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.

For operation outside these guidelines, contact ResinTech Technical Support

## APPLICATIONS

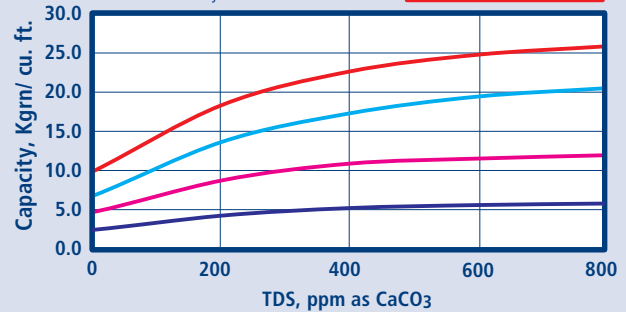
### Case - 1 WACMP Capacity

For hardness when alkalinity exceeds hardness;  
for alkalinity when hardness exceeds alkalinity.



### Case 2 - WACMP Capacity

For alkalinity when alkalinity exceeds hardness; for hardness when hardness exceeds alkalinity.



Resin capacity is affected by flow rate and temperature. No engineering downgrade has been applied.

### DEALKALIZER

RESINTECH WACMP (H form) removes hardness from water by neutralizing alkalinity from HCO<sub>3</sub> to CO<sub>2</sub>. The carbon dioxide can then be removed in a degassifier. For complete removal of hardness, a strong acid cation type softener is needed. For complete conversion of HCO<sub>3</sub> alkalinity to CO<sub>2</sub>, a hydrogen form cation may be needed.

### HIGH TDS SOFTENING

RESINTECH WACMP can be operated as a softener in the sodium cycle. Selectivity for hardness compared to sodium is between 5 and 10 times higher than conventional softening resins. Regeneration requires acid followed by caustic, salt can not be used. Sodium form weak acid resins can be used to soften high TDS waters up to approximately 50,000 ppm.

### METALS REMOVAL

RESINTECH WACMP has higher selectivity for divalent transition metals as compared to hardness ions.