RESINTECH® INC.
INNOVATIONS IN ION EXCHANGE

# WACMP

**CATION EXCHANGE RESIN**
**WEAK ACID MACROPOROUS**
**H OR Na FORM**

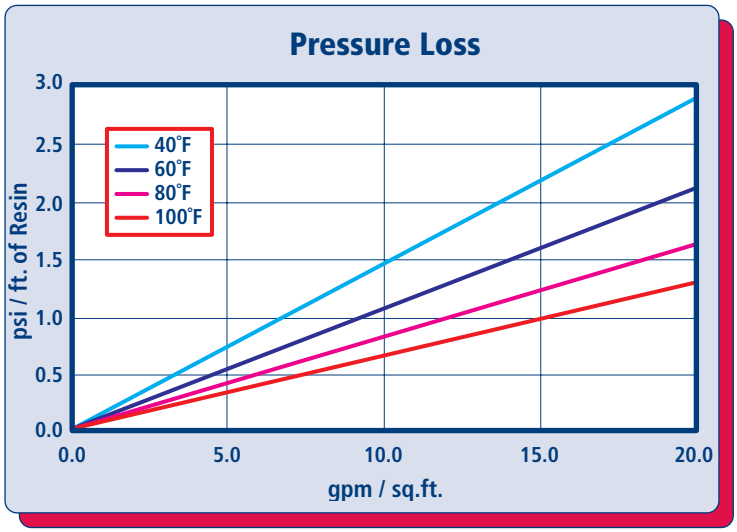
**ResinTech WACMP** is a hydrogen form macroporous weak acid cation resin. WACMP is an exceptionally high capacity resin and can be regenerated at close to 100% acid efficiency. *ResinTech WACMP* has low swelling and high physical strength when compared to gel weak acid cation resins. It is intended 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).

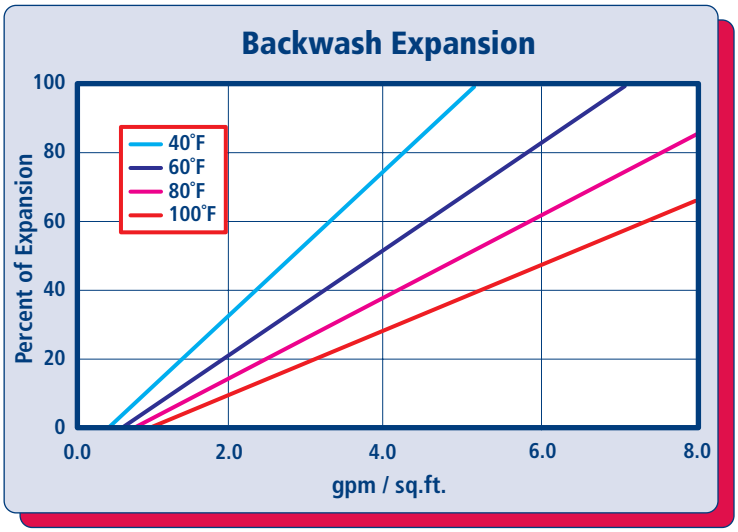
## FEATURES & BENEFITS

- **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.

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# RESINTECH® WACMP

## 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 |

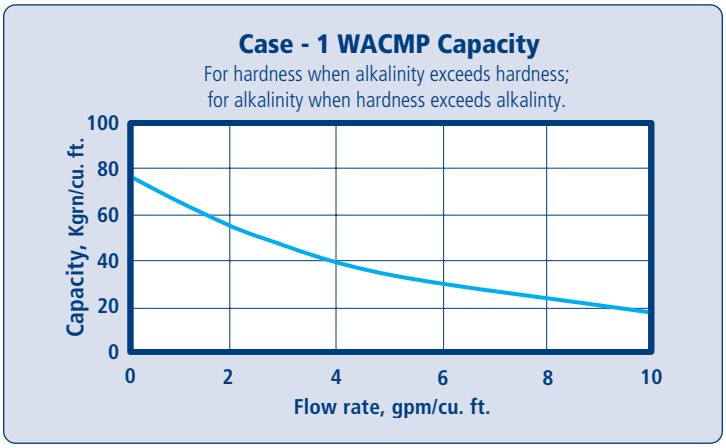
Note: Physical properties can be certified on a per lot basis, available upon request

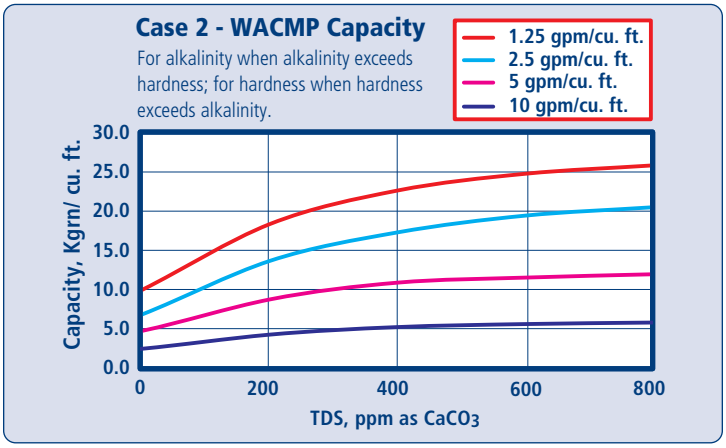
## SUGGESTED OPERATING CONDITIONS

| | |
|---|---|
| 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 $H_2SO_4$ |
| 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




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 $HCO_3$ to $CO_2$. 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 $HCO_3$ alkalinity to $CO_2$, 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.

Resin Products