RESINTECH INC.
INNOVATIONS IN ION EXCHANGE

WACG-HP

CATION EXCHANGE RESIN
WEAK ACID GEL
H OR Na FORM

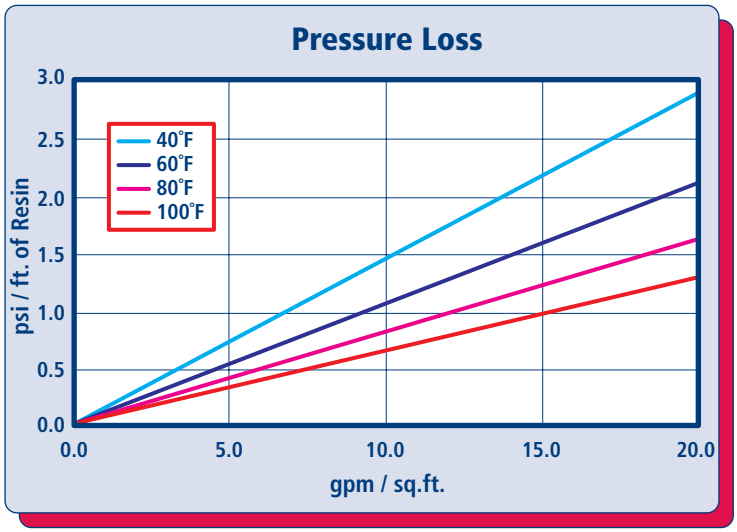
RESINTECH WACG-HP is a hydrogen form gel weak acid cation resin. *WACG-HP* has exceptionally high capacity and can be regenerated at close to 100% acid efficiency. *WACG-HP* is intended for all hydrogen cycle dealkalizer applications, as a component resin in demineralizers, and for metals removal in waste treatment applications (when ordered in the sodium form). *RESINTECH WACG-HP* is available in the hydrogen form, in the buffered form for potable water applications (when ordered as WACG-HP), and in the sodium form (when ordered as WACG-HP-Na).

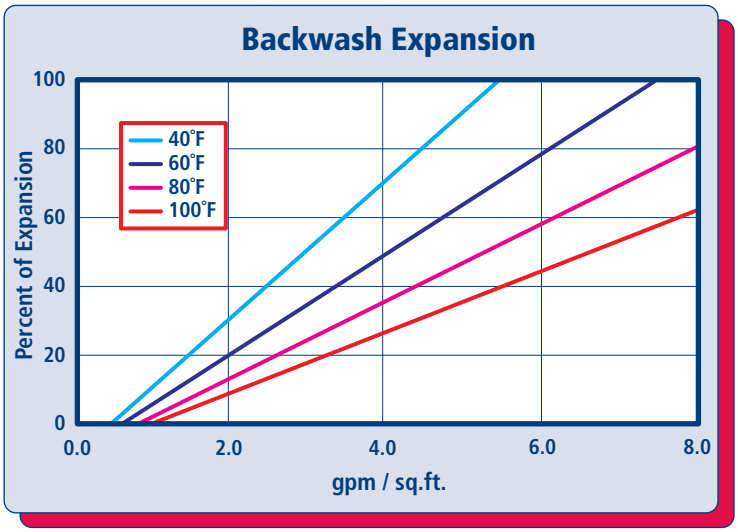
C US
NSF/ANSI-61 CERTIFIED FOR MATERIAL SAFETY
WQA Gold Seal Certified when ordered as WACG-HP

FEATURES & BENEFITS

- **HIGH CAPACITY**
  Over 90 kilograins per cubic foot total capacity
- **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

HYDRAULIC PROPERTIES





PRESSURE LOSS

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

BACKWASH

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

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RESINTECH® WACG-HP

PHYSICAL PROPERTIES

Polymer Structure	Acrylic/DVB
Polymer Type	Gel
Functional Group	Carboxylic acid
Physical Form	Spherical beads
Ionic Form as shipped	Hydrogen
Total Capacity	
Hydrogen form	>4.0 meq/mL
Sodium form	>2.0 meq/mL
Water Retention	
Hydrogen form	43 to 60 percent
Approximate Shipping Weight	
Hydrogen form	48 lbs./cu.ft.
Sodium form	48 lbs./cu.ft.
Swelling, H to Na	80 to 100 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

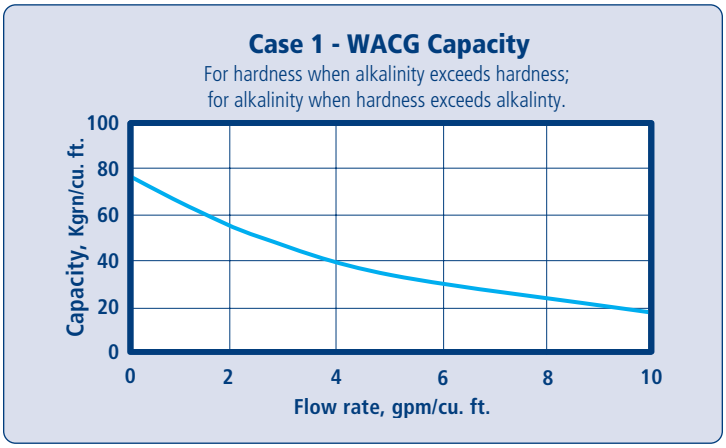
Note: Physical properties can be certified on a per lot basis, available upon request

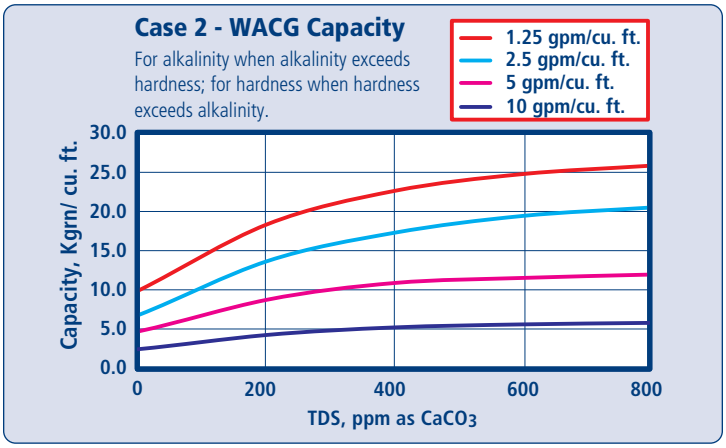
SUGGESTED OPERATING CONDITIONS

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 volume	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 WACG-HP (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 WACG-HP can be operated as a softener in the sodium cycle. Selectivity for hardness compared to sodium is 5 to 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

WACG-HP-Na has higher selectivity for divalent transition metals as compared to hardness ions.