

RESINTECH

INNOVATIONS IN ION EXCHANGE

CATION RESINS

RESINTECH PRODUCT SPECIFICATIONS



CG8

**CATION EXCHANGE RESIN
STRONG ACID GEL
8 % DVB, NA OR H FORM**

RESINTECH CG8 is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. *RESINTECH CG8* is intended for use in all water softening, dealkalization, deionization and chemical processing applications.



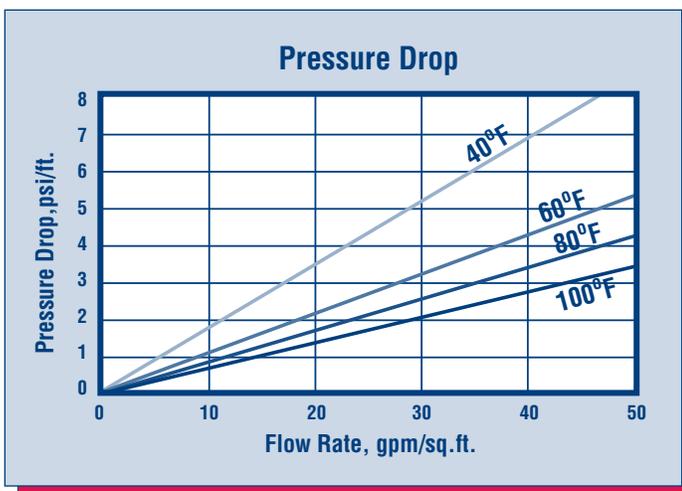
**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**
WQA Gold Seal Certified when ordered as CG8-HP

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS**
Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.*
- **COMPLIES WITH USDA REGULATIONS FOR POTABLE WATER SYSTEMS**
Meets standards for use in systems operating under the Federal meat and poultry products inspection program.
- **HIGHLY UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**
16 to plus 50 mesh range; giving a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
93% plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage.
- **LOW COLOR THROW**

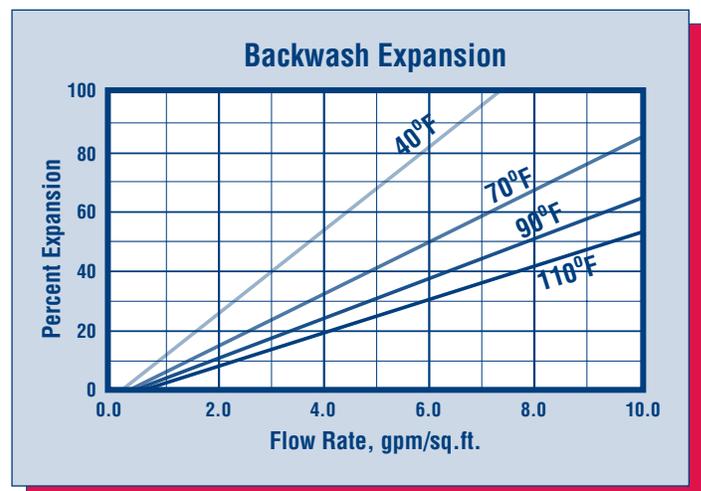
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CG8* in the sodium form.

RESINTECH® CG8

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50 (U.S. Std)
+16 mesh	< 5 percent
-50 mesh	< 1 percent
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Hydrogen Form	47 to 54 percent
Sodium Form	42 to 49 percent
Approximate Shipping Weight	
Hydrogen Form	50 lbs/cu.ft.
Sodium Form	52 lbs/cu.ft.
Total Capacity	
Sodium Form	1.9 meq/ml min
Hydrogen Form	1.8 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	250° F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75% Bed Expansion
Regenerant (NaCl or KCl)	
Concentration	10 to 15 percent
Flow Rate	0.5 to 1.5 gpm/cu.ft.
Contact Time	> 20 minutes
Level	4 to 15 pounds/cu.ft.
Displacement Rate	Same as Regen Flow Rate
Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	1 to 5 gpm/cu.ft.

Consult ResinTech Technical Support for operation outside the suggested conditions.

OPERATING CAPACITY

The Sodium cycle operating capacity of *RESINTECH CG8* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	19	11.5
7.5	23	12.8
10	25.3	13.6
15	28.1	14.5
20	29.7	15.0

The capacity data is based on an acid concentration of 2 percent in order to avoid calcium sulfate precipitation. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid the calcium problem.

APPLICATIONS

DEMINEERALIZATION –

RESINTECH CG8 can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as *RESINTECH SBG1P*, *SBMP1* and *RESINTECH SBG2*.

SOFTENING –

RESINTECH CG8 is ideally suited for industrial softening applications because of its high capacity and good physical stability.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

Material Safety Data Sheets (MSDS) are available for all ResinTech Inc. products. To obtain a copy, contact your local ResinTech sales representative or our corporate headquarters. They contain important health and safety information. That information may be needed to protect your employees and customers from any known health and safety hazards associated with our products. We recommend that you secure and study the pertinent MSDS for our products and any other products being used. These suggestions and data are based on information we believe to be reliable. They are offered in good faith. However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents; further we assume no liability for the consequences of any such actions.

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CG8rev022712



CG8-BL

**CATION EXCHANGE RESIN
STRONG ACID GEL
8 % DVB, NA OR H FORM**

RESINTECH CG8-BL is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. *RESINTECH CG8-BL* is intended for use in all water softening, dealkalization, deionization and chemical processing applications.



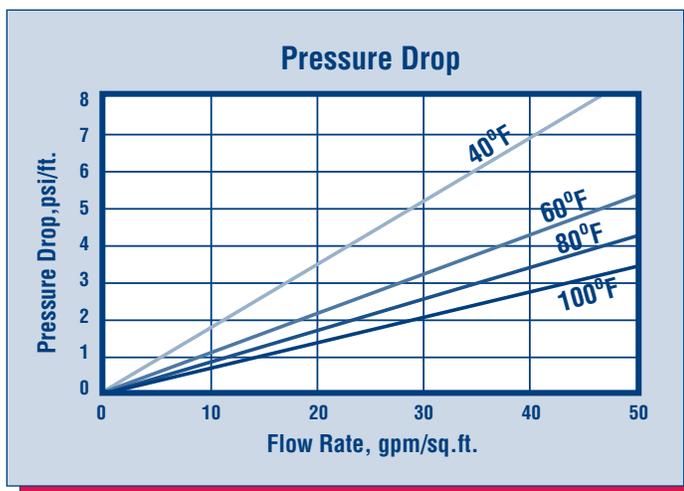
**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**
WQA Gold Seal Certified when ordered as CG8-BL-HP

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS**
Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.*
- **COMPLIES WITH USDA REGULATIONS FOR POTABLE WATER SYSTEMS**
Meets standards for use in systems operating under the Federal meat and poultry products inspection program.
- **HIGHLY UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**
16 to plus 50 mesh range; giving a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
93% plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage.
- **LOW COLOR THROW**

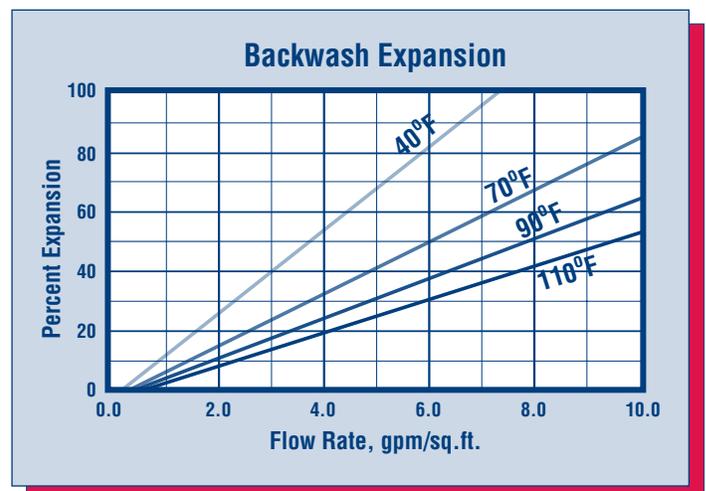
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CG8-BL* in the sodium form.

RESINTECH® CG8-BL

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50 (U.S. Std)
+16 mesh	< 5 percent
-50 mesh	< 1 percent
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Hydrogen Form	47 to 54 percent
Sodium Form	42 to 49 percent
Approximate Shipping Weight	
Hydrogen Form	50 lbs/cu.ft.
Sodium Form	52 lbs/cu.ft.
Total Capacity	
Sodium Form	1.9 meq/ml min
Hydrogen Form	1.8 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	250° F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75% Bed Expansion
Regenerant (NaCl or KCl)	
Concentration	10 to 15 percent
Flow Rate	0.5 to 1.5 gpm/cu.ft.
Contact Time	> 20 minutes
Level	4 to 15 pounds/cu.ft.
Displacement Rate	Same as Regen Flow Rate
Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	1 to 5 gpm/cu.ft.

Consult ResinTech Technical Support for operation outside the suggested conditions.

OPERATING CAPACITY

The Sodium cycle operating capacity of *RESINTECH CG8-BL* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	19	11.5
7.5	23	12.8
10	25.3	13.6
15	28.1	14.5
20	29.7	15.0

The capacity data is based on an acid concentration of 2 percent in order to avoid calcium sulfate precipitation. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid the calcium problem.

APPLICATIONS

DEMINEERALIZATION –

RESINTECH CG8-BL can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as *RESINTECH SBG1P*, *SBMP1* and *RESINTECH SBG2*.

SOFTENING –

RESINTECH CG8-BL is ideally suited for industrial softening applications because of its high capacity and good physical stability.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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CG8-BLrev022712



CG8-C

**CATION EXCHANGE RESIN
COURSE MESH STRONG ACID
8 % DVB, Na or H FORM**

RESINTECH CG8-C is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. *RESINTECH CG8-C* is intended for use in all water softening, dealkalization, deionization and chemical processing applications. It has a bead size range of 16x30 mesh which provides reduced pressure losses than standard 16 x 50 mesh resins which makes it especially useful in high flowrate applications.



**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**

WQA Gold Seal Certified when ordered as CG8-C-HP

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS**

Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.*

- **COMPLIES WITH USDA REGULATIONS FOR POTABLE WATER SYSTEMS**

Meets standards for use in systems operating under the Federal meat and poultry products inspection program.

- **HIGHLY UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**

90 percent of all beads are in the 16 to plus 30 mesh range; giving LOW PRESSURE DROP.

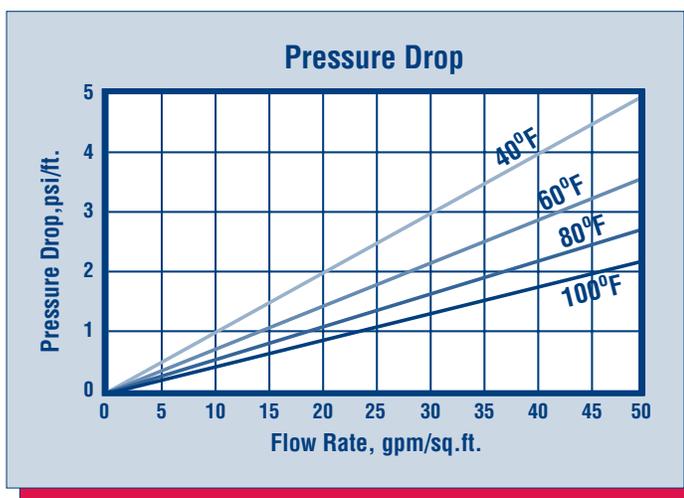
- **SUPERIOR PHYSICAL STABILITY**

93 percent plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage.

- **LOW COLOR THROW**

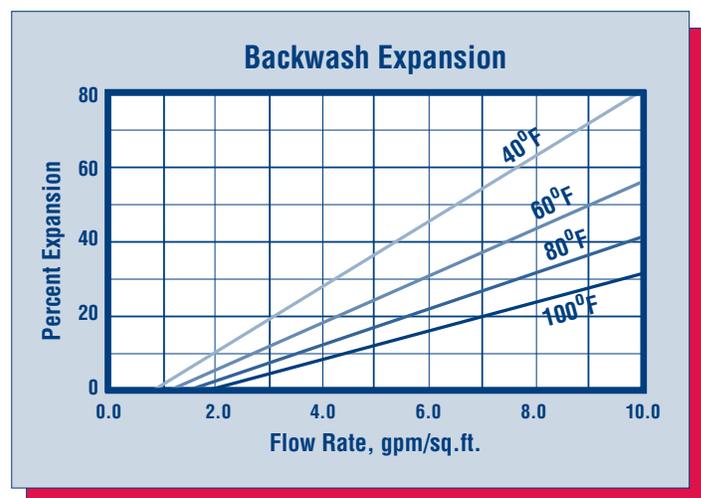
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to ensure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CG8-C* in the sodium form.

RESINTECH® CG8-C

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ^{-M+}
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 10 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Hydrogen Form	47 to 54 percent
Sodium Form	42 to 49 percent
Solubility	Insoluble
Approximate Shipping Weight	
Hydrogen Form	50 lbs/cu.ft.
Sodium Form	52 lbs/cu.ft.
Swelling Ca ⁺² or Na ⁺ to H ⁺	5 to 9 percent
Total Capacity	
Sodium Form	1.9 meq/ml min
Hydrogen Form	1.8 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	280°F
Hydrogen Form	265°F
Minimum Bed Depth	24 inches
Backwash Rate	25 to 50% Bed Expansion
Regenerant Concentration	
Hydrogen Cycle	10% HCl or 1 to 8% H ₂ SO ₄
Sodium Cycle	10% to 15% NaCl
Regenerant Flow Rate	0.5 to 1.5 gpm/cu.ft.
Regenerant Contact Time	At least 20 Minutes
Regenerant Level	4 to 15 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	2 to 10 gpm/cu.ft.

OPERATING CAPACITY

The Sodium cycle operating capacity of *RESINTECH CG8-C* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	19	11.5
7.5	23	12.8
10	25.3	13.6
15	28.1	14.5
20	29.7	15.0

The capacity data is based on an acid concentration of 2 percent in order to avoid calcium sulfate precipitation. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid the calcium problem.

APPLICATIONS

DEMINEERALIZATION –

RESINTECH CG8-C can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as *RESINTECH SBG1P*, *SBMP1* and *RESINTECH SBG2*.

SOFTENING –

RESINTECH CG8-C is ideally suited for industrial softening applications because of its high capacity and good physical stability.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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CG8-Crev022712



CG8-F

**CATION EXCHANGE RESIN
FINE MESH STRONG ACID
8 % DVB, Na or H FORM**

RESINTECH CG8-F is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. *RESINTECH CG8-F* is intended for use in all water softening, dealkalization, deionization and chemical processing applications.



**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**
WQA Gold Seal Certified when ordered as CG8-F-HP

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS**

Conforms to paragraph 21CFR173.125 of the Food Additives Regulations of the F.D.A.*

- **COMPLIES WITH USDA REGULATIONS FOR POTABLE WATER SYSTEMS**

Meets standards for use in systems operating under the Federal meat and poultry products inspection program.

- **HIGHLY UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**

90 percent of all beads are in the minus 30 to plus 50 mesh range; giving LOW PRESSURE DROP.

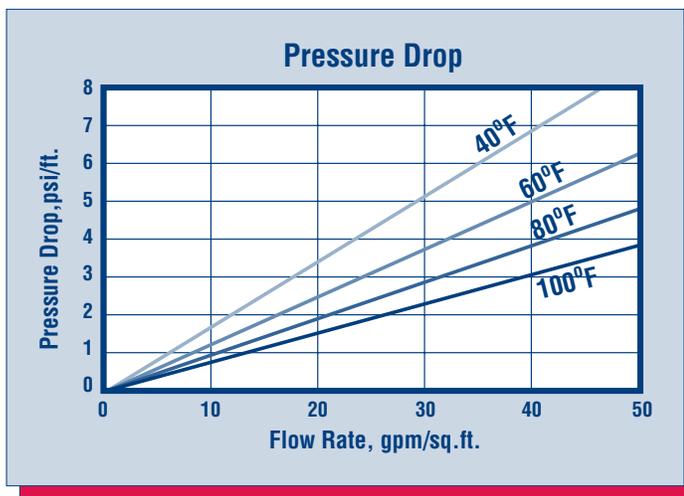
- **SUPERIOR PHYSICAL STABILITY**

93 percent plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage.

- **LOW COLOR THROW**

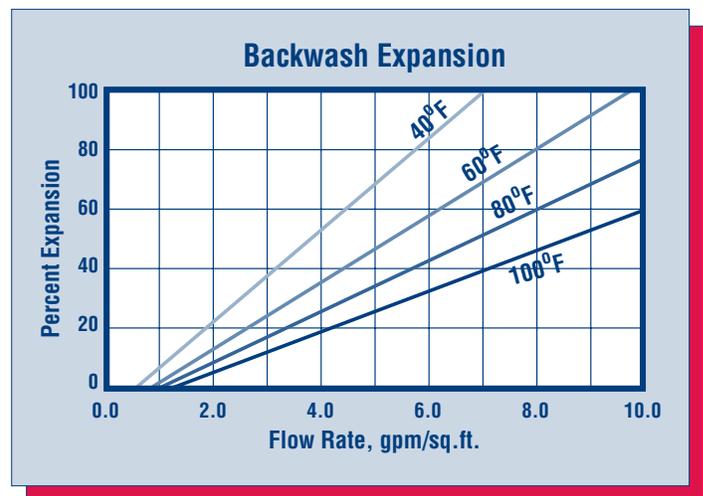
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to ensure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CG8-F* in the sodium form.

RESINTECH® CG8-F

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	30 to 50
+16 mesh (U.S. Std)	< 15 percent
-50 mesh (U.S. Std)	< 5 percent
pH Range	0 to 14
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Hydrogen Form	47 to 54 percent
Sodium Form	42 to 49 percent
Solubility Insoluble	
Approximate Shipping Weight	
Hydrogen Form	50 lbs/cu.ft.
Sodium Form	52 lbs/cu.ft.
Swelling Ca ⁺² or Na ⁺ to H ⁺	5 to 9 percent
Total Capacity	
Sodium Form	1.9 meq/ml min
Hydrogen Form	1.8 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	280°F
Hydrogen Form	265°F
Minimum Bed Depth	24 inches
Backwash Rate	25 to 50% Bed Expansion
Regenerant Concentration	
Hydrogen Cycle	10% HCl or 1 to 8% H ₂ SO ₄
Sodium Cycle	10% to 15% NaCl
Regenerant Flow Rate	0.5 to 1.5 gpm/cu.ft.
Regenerant Contact Time	At least 20 Minutes
Regenerant Level	4 to 15 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	2 to 10 gpm/cu.ft.

OPERATING CAPACITY

The Sodium cycle operating capacity of *RESINTECH CG8-F* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	19	11.5
7.5	23	12.8
10	25.3	13.6
15	28.1	14.5
20	29.7	15.0

The capacity data is based on an acid concentration of 2 percent in order to avoid calcium sulfate precipitation. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid the calcium problem.

APPLICATIONS

Demineralization –

RESINTECH CG8-F can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as *RESINTECH SBG1P*, *SBMP1* and *RESINTECH SBG2*.

Softening –

RESINTECH CG8-F is ideally suited for industrial softening applications because of its high capacity and good physical stability.

***CAUTION:DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials,such as ion exchange resins.

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CG8-frev022712



CG10

**CATION EXCHANGE RESIN
STRONG ACID
10 % DVB, Na or H FORM**

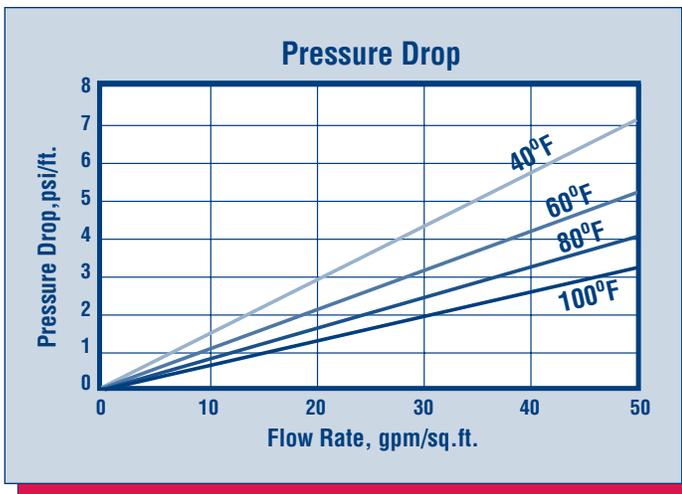
RESINTECH CG10 is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. RESINTECH CG10 is intended for use in all water softening, dealkalization, deionization and chemical processing applications.

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS**
Conforms to paragraph 21CFR173.125 of the Food Additives Regulations of the F.D.A.*
- **10% DIVINYLBENZENE**
Will give greatly increased life where resin degradation due to oxidative effects are anticipated such as in condensate softening.
- **HIGHLY UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**
16 to plus 50 mesh range; giving a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
93 percent plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage.
- **LOW COLOR THROW**

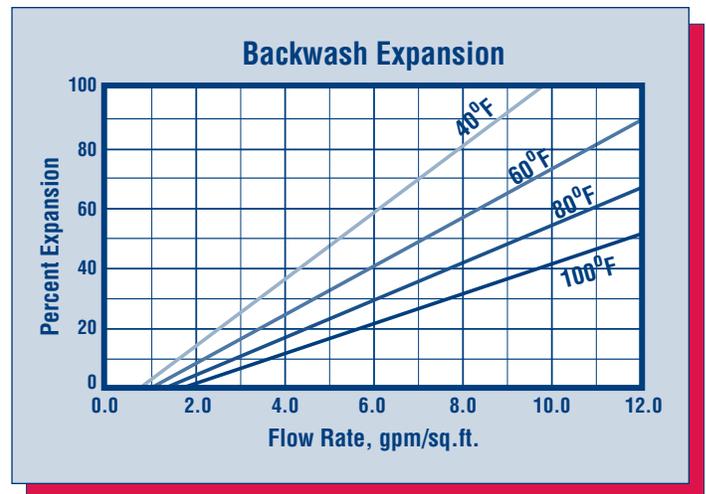
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CG10* in the sodium form.

RESINTECH® CG10

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Hydrogen Form	46 to 52 percent
Sodium Form	39 to 45 percent
Solubility	Insoluble
Approximate Shipping Weight	
Hydrogen Form	52 lbs/cu.ft.
Sodium Form	54 lbs/cu.ft.
Swelling Ca ⁺² or Na ⁺ to H ⁺	approx/ 5 percent
Total Capacity	
Sodium Form	2.2 meq/ml min
Hydrogen Form	2.1 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	280°F
Hydrogen Form	265°F
Minimum Bed Depth	24 inches
Backwash Rate	25 to 50% Bed Expansion
Regenerant Concentration	
Hydrogen Cycle	10% HCl or 1 to 8% H ₂ SO ₄
Sodium Cycle	10% to 15 % NaCl
Regenerant Flow Rate	0.5 to 1.5 gpm/cu.ft.
Regenerant Contact Time	At least 20 Minutes
Regenerant Level	4 to 15 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	2 to 10 gpm/cu.ft.

OPERATING CAPACITY

The Sodium cycle operating capacity of *RESINTECH CG10* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	21.0
7.5	27.0
10	30.9
15	35.4

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant:

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	20.0	12.1
7.5	24.5	13.6
10	27.0	14.6
15	30.1	15.5
20	30.7	16.0

The capacity data is based on an acid concentration of 2 percent in order to avoid calcium sulfate precipitation. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid the calcium problem.

APPLICATIONS

Demineralization –

RESINTECH CG10 can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as *RESINTECH SBG1P*, *SBMP1* and *RESINTECH SBG2*. *RESINTECH CG10* has a higher density than *RESINTECH CG8* and is often the preferred cation resin in mixed bed demineralization because it provides easier separation during the regeneration procedure.

Softening –

RESINTECH CG10 is ideally suited for industrial softening applications. It has a higher level of DVB than *RESINTECH CG8*. This gives *RESINTECH CG10* a longer service life when softening aggressive waters.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

Material Safety Data Sheets (MSDS) are available for all ResinTech Inc. products. To obtain a copy, contact your local ResinTech sales representative or our corporate headquarters. They contain important health and safety information. That information may be needed to protect your employees and customers from any known health and safety hazards associated with our products. We recommend that you secure and study the pertinent MSDS for our products and any other products being used. These suggestions and data are based on information we believe to be reliable. They are offered in good faith. However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents; further we assume no liability for the consequences of any such actions.

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CG10serv050502



CGS-BL

**CATION EXCHANGE RESIN
SOFTENING GRADE
Na FORM**

RESINTeCH CGS-BL is a dark colored, high capacity, gel type, sulfonated strongly acidic, polystyrene cation resin supplied in the sodium form as moist, tough, uniform spherical beads. *ResinTech CGS-BL* is intended for use in all water softening applications, including potable water and water used for food processing and beverages.

(Also available as a light colored product – *ResinTech CGS* – with identical properties.)

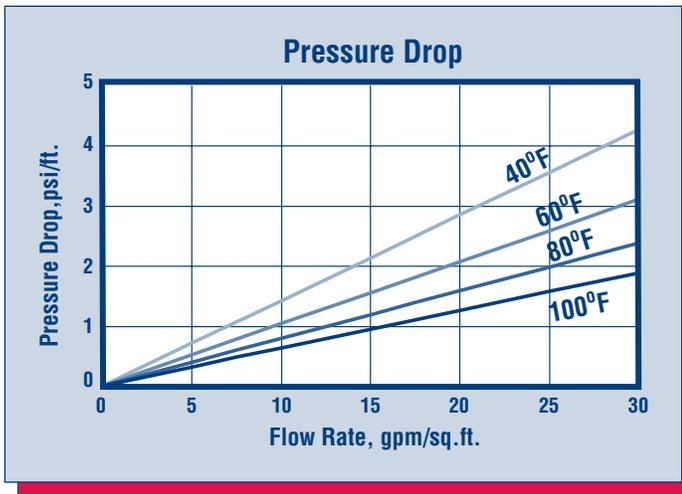


**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**

FEATURES & BENEFITS

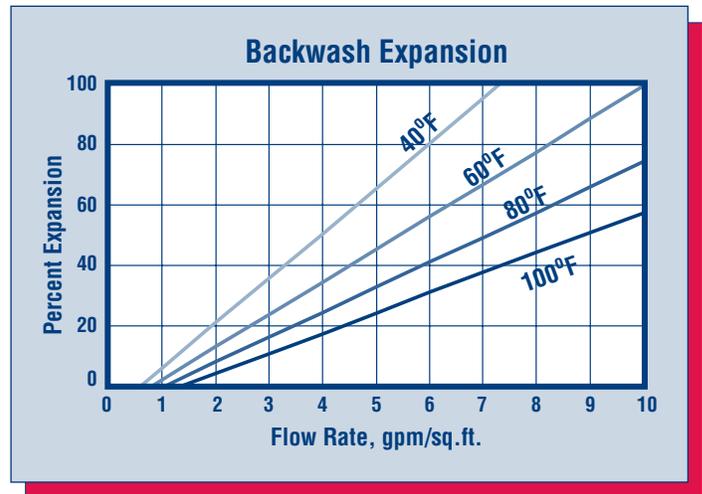
- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS**
Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.
- **CONTROLLED PARTICLE SIZE**
16 to plus 50 mesh range; gives a lower pressure drop while maintaining superior kinetics.
- **SUPERIOR PHYSICAL STABILITY**
90% plus sphericity and high crush strength provides greater resistance to bead breakage while maintaining low pressure drops.
- **FREE FLOWING**
Easy to load vessels using a hopper or funnel.
- **EXTREMELY LOW COLOR THROW**

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CGS-BL* in the sodium form.

RESINTECH® CGS-BL

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Sodium Form	46 to 50 percent
Solubility	Insoluble
Shipping Weight	
Sodium Form	50 lbs./cu.ft.
Total Capacity	
Sodium Form	1.90 meq/ml min.

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	250° F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75% Bed Expansion
Regenerant (NaCl or KCl)	
Concentration	10 to 15 percent
Flow Rate	0.5 to 1.5 gpm/cu.ft.
Contact Time	> 20 minutes
Level	4 to 15 pounds/cu.ft.
Displacement Rate	Same as Regen Flow Rate
Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	1 to 10 gpm/cu.ft.*

Consult ResinTech technical support for operation outside the suggested conditions.

OPERATING CAPACITY

SODIUM CHLORIDE (NaCl) REGENERATION -

The sodium cycle operating capacity of *ResinTech CGS-BL* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

POTASSIUM CHLORIDE (KCl) REGENERATION -

The potassium cycle operating capacity of *ResinTech CGS-BL* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds KCl/cu.ft.	Capacity Kilograins/cu.ft.
5	16.6
7.5	21.8
10	26.6
15	31.2

APPLICATIONS

SOFTENING -

ResinTech CGS-BL is ideally suited for commercial or residential softening applications because of its high capacity, carefully controlled particle size and good physical stability.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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CGS-BL022712



CGS

**CATION EXCHANGE RESIN
SOFTENING GRADE
Na FORM**

RESINTECH CGS is a light colored, high capacity, gel type, sulfonated strongly acidic, polystyrene cation resin supplied in the sodium form as moist, tough, uniform spherical beads. *ResinTech CGS* is intended for use in all water softening applications, including potable water and water used for food processing and beverages.

(Also available as a dark colored product – *ResinTech CGS-BL* – with identical properties.)

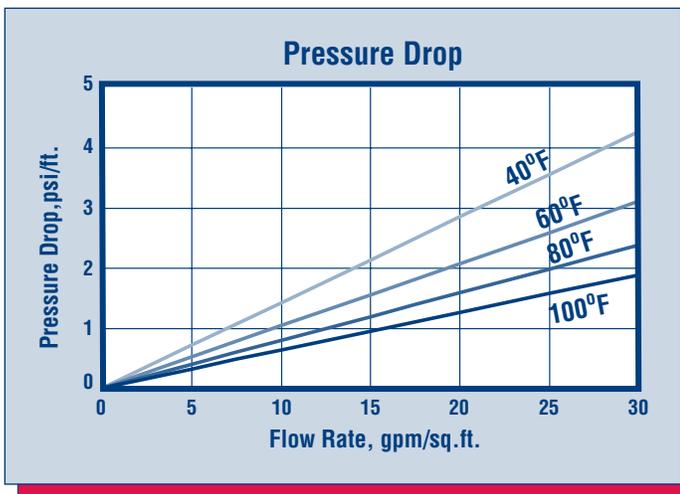


**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**

FEATURES & BENEFITS

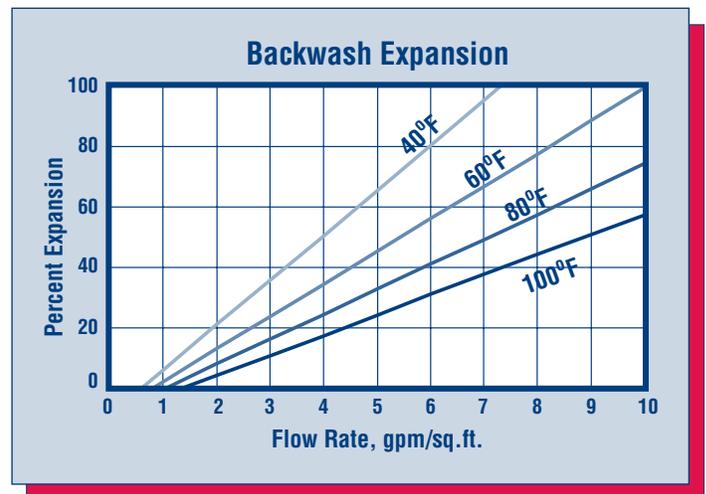
- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS**
Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.
- **CONTROLLED PARTICLE SIZE**
16 to plus 50 mesh range; gives a lower pressure drop while maintaining superior kinetics.
- **SUPERIOR PHYSICAL STABILITY**
90% plus sphericity and high crush strength provides greater resistance to bead breakage while maintaining low pressure drops.
- **FREE FLOWING**
Easy to load vessels using a hopper or funnel.
- **EXTREMELY LOW COLOR THROW**

HYDRAULIC PROPERTIES



PRESSURE DROP -

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



BACKWASH -

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech CGS* in the sodium form.

RESINTECH® CGS

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Sodium Form	46 to 50 percent
Solubility	Insoluble
Shipping Weight	
Sodium Form	50 lbs./cu.ft.
Total Capacity	
Sodium Form	1.90 meq/ml min.

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	250° F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75% Bed Expansion
Regenerant (NaCl or KCl)	
Concentration	10 to 15 percent
Flow Rate	0.5 to 1.5 gpm/cu.ft.
Contact Time	> 20 minutes
Level	4 to 15 pounds/cu.ft.
Displacement Rate	Same as Regen Flow Rate
Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	1 to 10 gpm/cu.ft.*

Consult ResinTech technical support for operation outside the suggested conditions.

OPERATING CAPACITY

SODIUM CHLORIDE (NaCl) REGENERATION -

The sodium cycle operating capacity of *ResinTech CGS* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

POTASSIUM CHLORIDE (KCl) REGENERATION -

The potassium cycle operating capacity of *ResinTech CGS* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds KCl/cu.ft.	Capacity Kilograins/cu.ft.
5	16.6
7.5	21.8
10	26.6
15	31.2

APPLICATIONS

SOFTENING -

ResinTech CGS is ideally suited for commercial or residential softening applications because of its high capacity, carefully controlled particle size and good physical stability.

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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CGS022712

RESINTECH SACMP is a premium grade, highly cross-linked, macroporous strong acid cation exchange resin based on sulfonated polystyrene, cross linked with DVB. The DVB content in *RESINTECH SACMP* is double the amount found in standard gel-type resins. The higher DVB content together with its macroporous structure gives *RESINTECH SACMP* increased resistance to thermal, chemical and physical shocks and enhances overall stability. *RESINTECH SACMP* is supplied in the sodium (Na) or hydrogen (H) form as moist, tough, uniform spherical beads.

RESINTECH SACMP is intended for use in water softening, deionization and chemical processing applications. It is ideally suited for use in severe operating conditions, especially where standard grade resins are known to fail due to thermal, osmotic or oxidative attack.



**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**
WQA Gold Seal Certified when ordered as CG8-HP

FEATURES & BENEFITS

- **MACROPOROUS STRUCTURE**

Unique macroporous structure provides greatly increased life in stressful applications such as condensate softening where resin degradation due to thermal and oxidative effects is anticipated.

- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS**

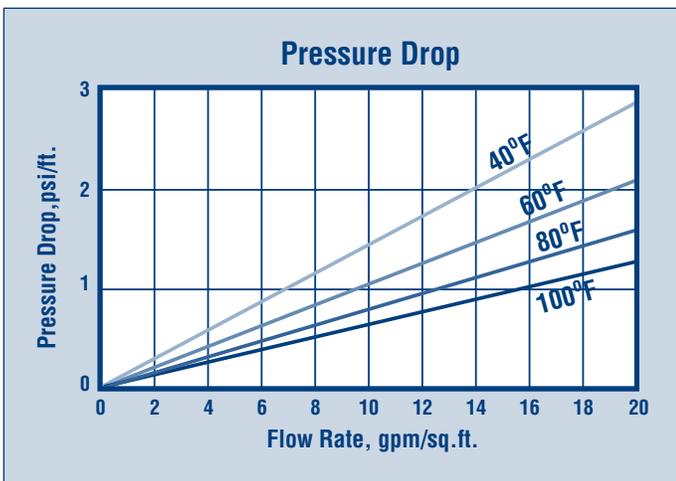
Conforms to paragraph 21 CFR173.25 of the Food Additives Regulations of the F. D. A. *

- **SUPERIOR CHEMICAL & PHYSICAL STABILITY**

95% plus sphericity combined with macroporous structure, higher crosslinker (DVB) levels, high crush strength and highly uniform particle size provides greater physical, chemical, and thermal stability.

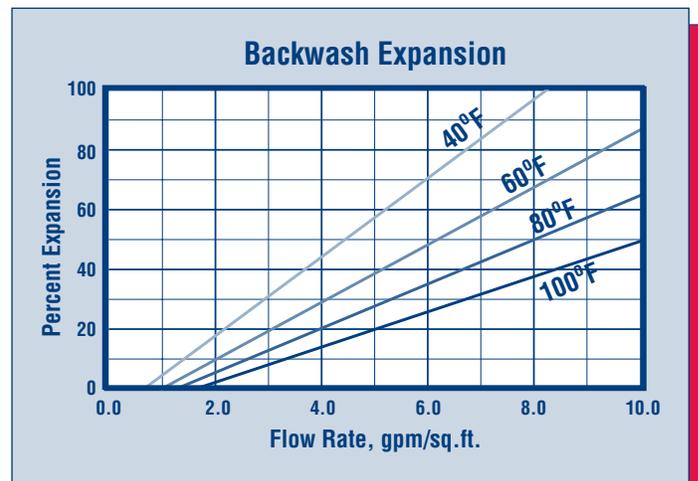
* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *RESINTECH SACMP*.

RESINTECH® SACMP

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO ₃) ⁻ M ⁺
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16-50 Nominal
+16 mesh	< 3 percent
-50 mesh	< 1 percent
pH Range	0 to 14
Sphericity	95+%
Water Retention	
Sodium Form	42 to 50 percent
Hydrogen Form	45 to 55 percent
Solubility	Insoluble
Approximate Shipping Weight	
Hydrogen Form	48 lbs/cu.ft.
Sodium Form	50 lbs/cu.ft.
Swelling	
Ca ⁺² or Na ⁺ to H ⁺	Approx. 3 to 5 percent
Total Capacity	
Sodium Form	> 1.65 meq/mL
Hydrogen Form	> 1.55 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	300°F
Hydrogen Form	285°F
Minimum Bed Depth	24 inches
Backwash	50 to 75% Bed Expansion
Regenerant Concentration*	
Hydrogen Cycle*	5 to 10% HCl or 1 to 8% H ₂ SO ₄
Sodium Cycle*	10% to 15% NaCl
Regenerant Flow Rate	0.5 to 1.5 gpm/cu.ft.
Regenerant Contact Time	At least 20 Minutes
Regenerant Level	4 to 15 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 Gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gal/cu.ft.
Service Flow Rate	2 to 10 gpm/cu.ft.

OPERATING CAPACITY

The sodium cycle operating capacity of *RESINTECH SACMP* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO₃, is shown in the following table:

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	17.0
7.5	21.6
10	24.6
15	28.0

The following table shows the hydrogen cycle relationship between operating capacity and regeneration level when using 2% sulfuric acid as the regenerant. Higher operating capacities could be obtained using a stepwise increase in acid concentration to avoid calcium sulfate precipitation problems.

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins / cu.ft.	
	500 ppm as CaCO ₃ NaCl	500 ppm as CaCO ₃ CaCl ₂
5	16.2	9.8
7.5	19.6	10.9
10	21.5	11.6
15	23.8	12.3
20	25.2	12.7

APPLICATIONS

Demineralization -

RESINTECH SACMP is widely used in mixed bed demineralizers where high hydraulic demands exist and high resistance to mechanical, thermal and oxidative stresses are required. Such applications include condensate polishing, chemical processing, process stream purification, and bath rectification such as in hard chrome plating bath recoveries.

Single use scavenging of trace cations -

RESINTECH SACMP has an extremely high selectivity for certain cations such as radium and barium. In single use applications it can provide throughput volumes between resin change outs that are 2 to 5 times higher than other strong acid cation exchangers. The major benefit is the extra degree of compaction, which reduces disposal costs proportionately. Disposal costs are typically several times the purchase cost of the resin.

Softening -

RESINTECH SACMP has a high level of DVB, which gives longer life when softening aggressive waters where moderate de-crosslinking is anticipated (such as a hot process softener).

***CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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SACMPPrev022712



WACG

WEAK ACID GEL CARBOXYLIC
CATION EXCHANGE RESIN
Na or H FORM

RESINTECH WACG is a premium grade, high capacity, weak acid gel type cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. Ion exchange activity is based on its carboxylic functional group. *RESINTECH WACG* is intended for use in dealkalization, deionization, and chemical processing applications.

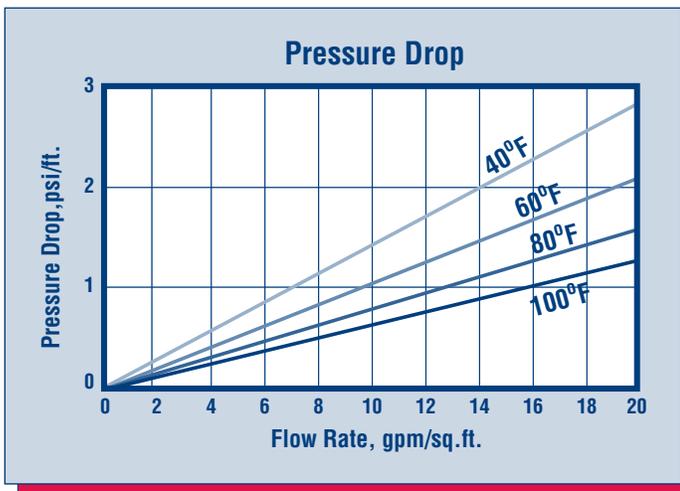


**NSF/ANSI-61 CERTIFIED FOR
MATERIAL SAFETY**
WQA Gold Seal Certified when ordered as WACG-HP

FEATURES & BENEFITS

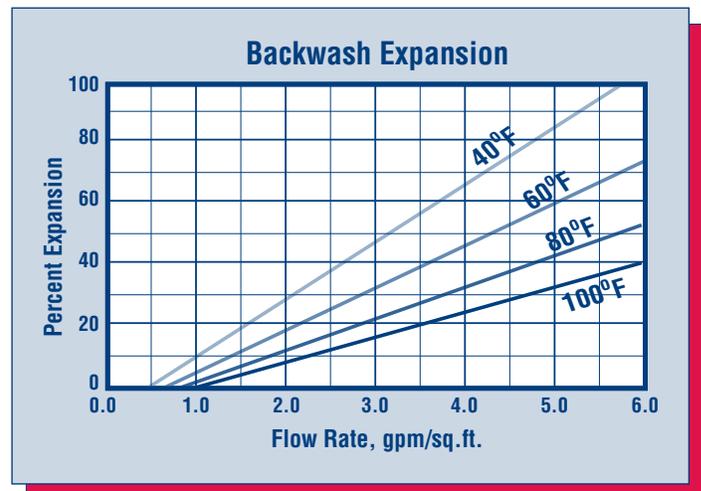
- **HIGH CAPACITY**
Over 80 kilograins total capacity per cubic foot assures maximum operating efficiency and capacity compared with other carboxylic type resins.
- **CARBOXYLIC FUNCTIONAL GROUPS**
Gives extremely high regeneration efficiencies and high operating capacities.
- **HIGHLY UNIFORM PARTICLE SIZE**
16 to plus 50 mesh range; gives a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
90% plus sphericity together with a uniform gel structure and a very uniform particle size provide greater resistance to bead breakage.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *RESINTECH WACG* in the hydrogen form.

TYPICAL PROPERTIES

Polymer Structure	Acrylic/Divinylbenzene
Functional Group	R ⁻ (COOH) ⁻
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std.)	< 10 percent
- 50 mesh (U.S. Std.)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Water Retention	43 to 60 percent
Solubility	Insoluble
Approximate Shipping Weight	
Sodium Form	44
Hydrogen Form	47
Swelling H ⁺ to Na ⁺	Approx. 100 percent
Total Capacity	
Sodium Form	2.0 meq/mL
Hydrogen Form	>4.0 meq/mL

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	250° F
Minimum Bed Depth	30 inches
Backwash Rate	50-75 Percent Bed Expansion
Regenerant Concentration*	
HCl	1 to 4 percent
H ₂ SO ₄	0.8 to 8 percent
Regenerant Flow Rate	0.3 to 0.75 gpm/cu. ft.
Regenerant Contact Time	At least 30 Minutes
Regenerant Level	Depends on Alkalinity
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 Gallons/cu. ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gal/cu. ft.
Service Flow Rate	2 to 5 gpm/cu. ft.

APPLICATIONS

DEMINERALIZATION -

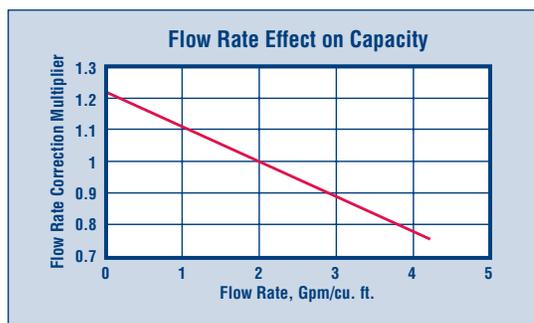
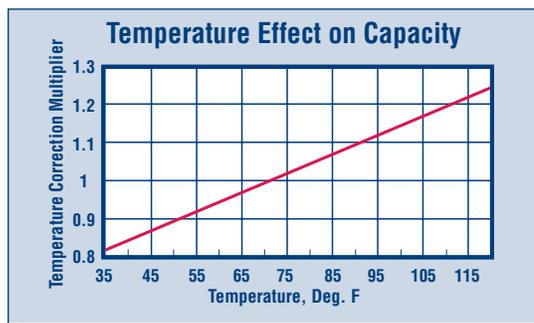
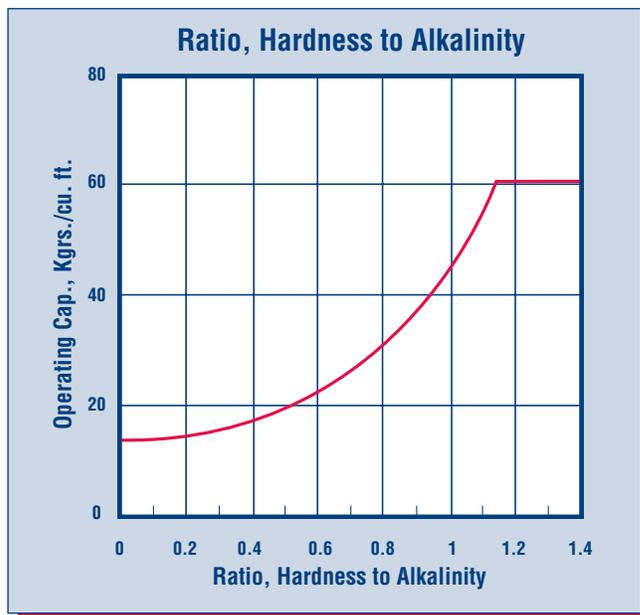
RESINTECH WACG can be used to remove cations associated with alkalinity in multiple bed demineralizers.

SOFTENING -

RESINTECH WACG can be operated as a softener, in the sodium cycle. This requires a two stage regeneration using a strong acid first stage to remove multivalent ions from the bed followed by a neutralization rinse with an alkali.

DEALKALIZATION -

Bicarbonate alkalinity associated with multivalent cations such as hardness can be effectively removed using RESINTECH WACG in the hydrogen form. When operated in this manner both hardness and alkalinity are removed. The reaction is limited by the amount of alkalinity and the ratio of hardness (multivalent cations) to alkalinity. The three graphs below show the base operating capacity according to the ratio of hardness to alkalinity and the effects of exhaustion flow rate and temperature, to a 10% alkalinity leakage endpoint.



***CAUTION:DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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WACMP

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

RESINTECH WACMP is a premium grade, weak acid, macroporous, cation resin supplied in the hydrogen form as moist, tough, uniform, spherical beads. Its ion exchange functionality is derived from the carboxylic group, which is easily converted to the hydrogen form and has a high affinity for divalent ions.

RESINTECH WACMP is intended for use in hydrogen cycle dealkalization, deionization, and chemical processing applications. *RESINTECH WACMP* can also be supplied in the sodium form for use in sodium cycle applications such as softening and removal of heavy metal cations.

FEATURES & BENEFITS

- **CARBOXYLIC FUNCTIONAL GROUPS**

Gives extremely high regeneration efficiencies and high operating capacities.

- **METALS REMOVAL**

Useful as a scavenger for copper, nickel, hardness and most multivalent ions.

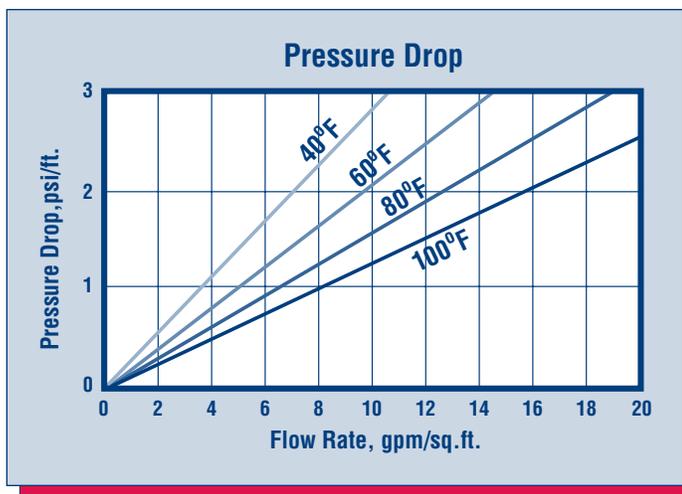
- **UNIFORM PARTICLE SIZE, LOW PRESSURE DROP**

16 to 50 mesh range; giving a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.

- **SUPERIOR PHYSICAL STABILITY**

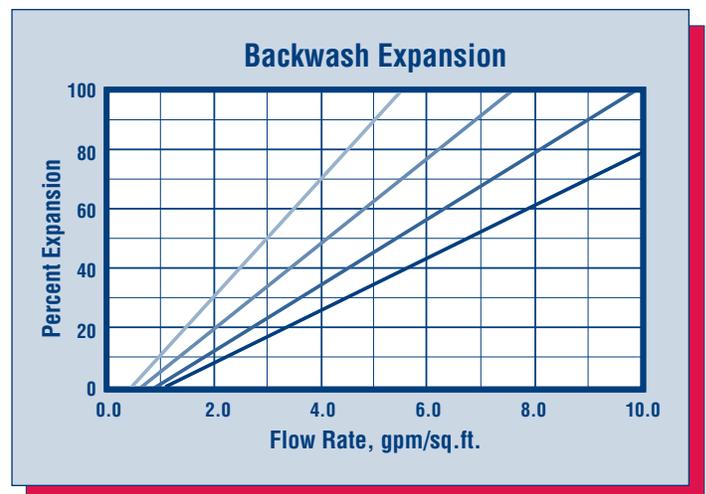
95% plus sphericity and low swelling together with a macroporous structure and a very uniform particle size provide greater resistance to bead breakage.

HYDRAULIC PROPERTIES



PRESSURE DROP

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



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech WACMP* in the sodium form.

RESINTECH® WACMP

TYPICAL PROPERTIES

Polymer Structure	Acrylic/Divinylbenzene
Functional Group	R ⁻ (COOH) ⁻
Ionic Form, as shipped	H (can be ordered as Na)
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 10 percent
- 50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Water Retention	
Hydrogen Form	46 to 56 percent
Sodium Form	57 to 67 percent
Solubility	Insoluble
Shipping Weight	
Hydrogen Form	47 Lbs/cu. ft.
Sodium Form	50 Lbs/cu. ft.
Swelling	
H ⁺ to Na ⁺	Aprox. 80 percent
Ca ⁺² to Na ⁺	Aprox. 30 percent
Total Capacity	
Hydrogen Form	> 3.8 meq/mL
Sodium Form	> 2.0 meq/mL

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	250° F
Minimum Bed Depth	30 inches
Backwash Rate	50 to 75 Percent Bed Expansion
Regenerant Concentration	5 to 10 % HCl or 0.8 % H ₂ SO ₄
Regenerant Flow Rate	0.3 to 0.75 gpm/cu. ft.
Regenerant Contact Time	At least 30 Minutes
Regenerant Level	Depends on Alkalinity
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 Gallons/cu. ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gal/cu. ft.
Service Flow Rate	2 to 5 gpm/cu. ft.

APPLICATIONS

DEALKALIZATION -

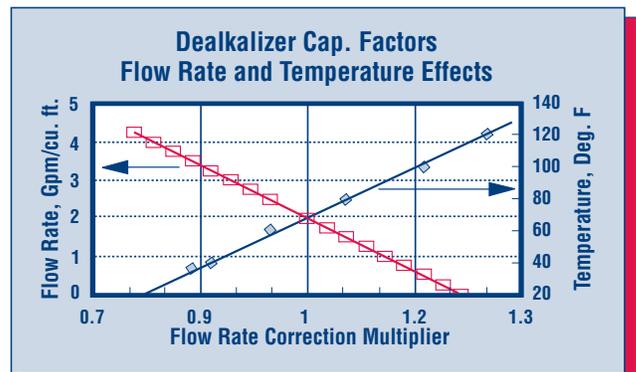
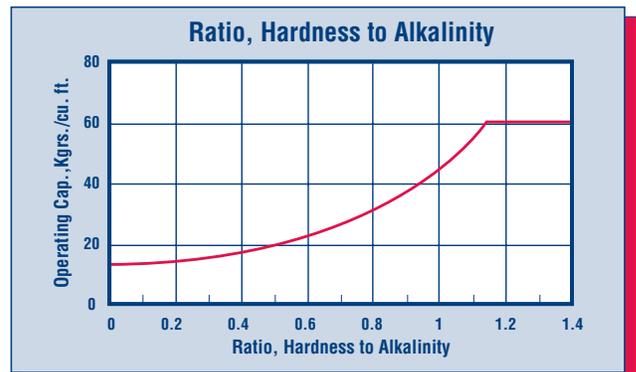
Bicarbonate alkalinity associated with multivalent cations such as hardness can be effectively removed using *RESINTECH WACMP* in the Hydrogen form. When operated in this manner both hardness and alkalinity are removed. The reaction is limited by the amount of alkalinity and the ratio of hardness (multivalent cations) to alkalinity. The graphs to the right show the base operating capacity according to the ratio of hardness to alkalinity and the effects of exhaustion flow rate and temperature. When the hardness to alkalinity ratio is greater than 1.0, *RESINTECH WACMP* will produce some free mineral acidity during the first 10% of the service exchange. Alkalinity leakage will occur after approximately 60 to 70% of the run. The operating capacity is based on 10% alkalinity leakage at the end of the run.

SOFTENING -

RESINTECH WACMP can be operated as a softener in the sodium cycle. This requires a two stage regeneration process using a strong acid first and then a neutralization rinse to put the resin into the sodium form and is especially effective in high solids softening applications.

METAL REMOVAL -

RESINTECH WACMP can be operated in the sodium or hydrogen cycle to remove heavy metals from waste streams with a pH above 5.5 in the absence of hardness. Operation in the sodium form provides a neutral pH effluent but requires a two stage regeneration as described above.



Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.

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