

## DESCRIPTION

ZHENG GUANG ZGC108FMDQ is a premium grade, high capacity, gelular, sulfonated, polystyrene cation resin supplied in the sodium or hydrogen form as moist, tough, uniform, spherical beads. ZhengGuang ZGC108FMDQ 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.\*

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

95 percent of all beads are in the minus 0.2mm to plus 0.45mm size range; giving LOW PRESSURE DROP.

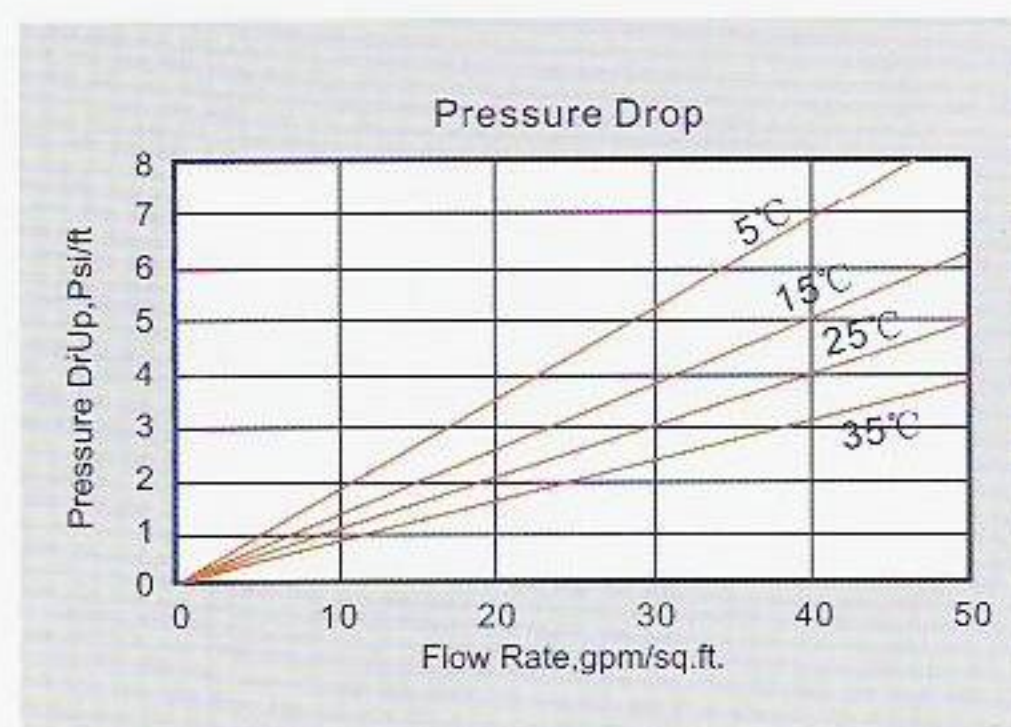
- **SUPERIOR PHYSICAL STABILITY**

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

- **LOW COLOR THROW**

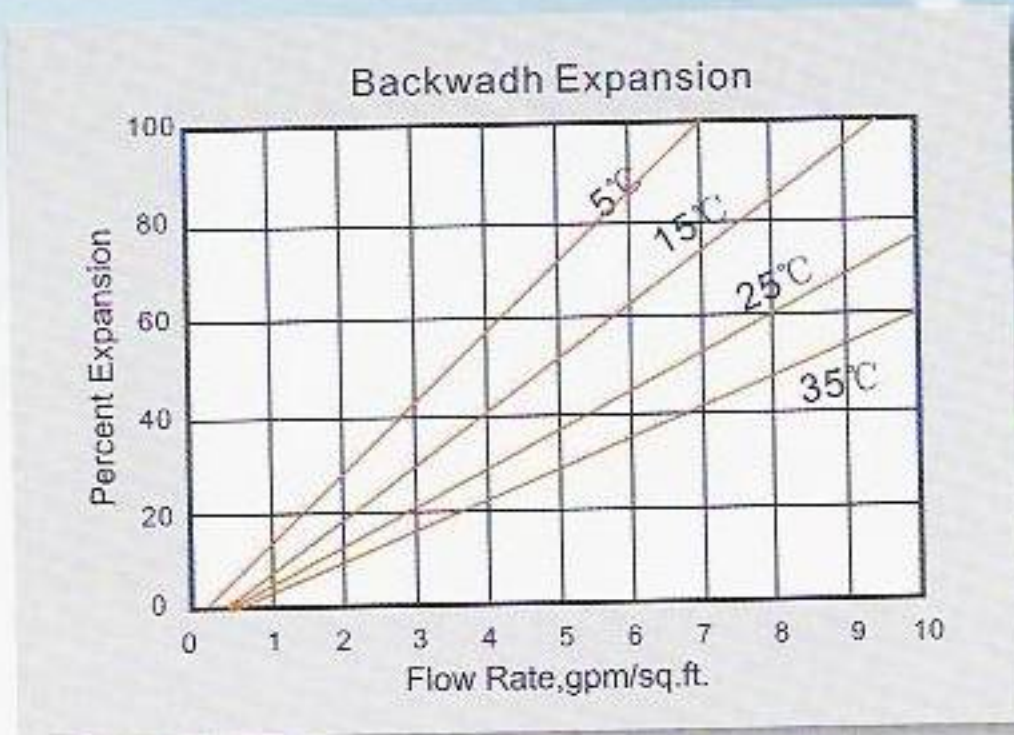
IFor potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to ensure compliance with extractable levels.

## HYDRAULIC PROPERTIES



### PRESSURE DROP--

The graph 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 shows the expansion characteristics of **ZhengGuang ZGC108FMDQ** in the sodium form.

## ZHENG GUANG ZGC108FMDQ

### PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-(SO <sub>3</sub> )M <sup>+</sup>
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	0.2mm to 0.45mm
>0.45mm	< 5 percent
<0.2mm	< 1 percent
PH Range	0 - 14
Sphericity	> 95 percent
Uniformity Coefficient	Approx. 1.4
Water Retention	
Hydrogen Form	50 to 57 percent
Sodium Form	42 to 50 percent
Solubility	Insoluble
Approximate Shipping Weight	
Hydrogen Form	0.72~0.82g/ml
Sodium Form	0.78~0.88g/ml
Swelling Ca <sup>2+</sup> or Na <sup>+</sup> to H <sup>+</sup>	≤10 percent
Total Capacity	
Sodium Form	2.0 mmol/ml min
Hydrogen Form	1.9 mmol/ml min

### SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	≤120°C
Hydrogen Form	≤100°C

Minimum Bed Depth	600mm
Backwash Rate	25 to 50% Bed Expansion
Regenerant Concentration	
Hydrogen Cycle	10% HCl or 1 to 8% H <sub>2</sub> SO <sub>4</sub>
Sodium Cycle	5% to 8% NaCl
Regenerant Flow Rate	4 to 5 m/h
Regenerant Contact Time	At least 30 Minutes
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Time	20 to 30 min
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Time	10 to 20 min
Service Flow Rate	15 to 30 m/h

## OPERATING CAPACITY

The Sodium cycle operating capacity of ZhengGuang ZGC108FMDQ for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO<sub>3</sub>, 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 <sub>2</sub> SO <sub>4</sub> /cu.ft.	Capacity Kilograins /cu.ft.	
	500 ppm as CaCO <sub>3</sub> NaCl	500 ppm as CaCO <sub>3</sub> CaCl <sub>2</sub>
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 -**

ZhengGuang ZGC108FMDQ can be used in multiple and mixed bed demineralizers with strongly basic anion exchangers such as ZhengGuang ZGA307FM, ZGA351FM and ZhengGuang ZGA302 FM.

### **Softening -**

ZhengGuang ZGC108FMDQ is ideally suited for industrial softening applications because of its high capacity and good physical stability.

**All our products are produced in ISO 9001-2000 certified manufacturing facilities.**

**\*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 ZhengGuang Resin Co., Ltd .products. To obtain a copy, contact your local ZhengGuang 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. Our 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.