



Z G C 151

Macroporous Strong Acid Cation Exchange Resin

DESCRIPTION

“Zheng Guang” Brand ZGC 151 is a premium grade, macroporous strong acid cation exchange resin, supplied in the sodium(Na) or hydrogen(H) form. It is a copolymer of styrene and divinylbenzene with sulfonic acid exchange groups. The unique structure allows for high operating capacity and excellent chemical and physical stability. Its matrix promotes better kinetics and better diffusion rates into and out of the bead. It is mainly used in production of pure water, ultra-pure water and condensate polishing. It can also be used in waste water treatment and recovery of heavy metals.

The series of ZGC 151 contains four products: ZGC 151, for general use; ZGC 151 FC for the system of double compartment bed or floating bed; ZGC 151SC for dual bed; ZGC 151MB for mixed bed, especially condensate water with high flow rate in mixed bed.

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.

- **MACROPOROUS STRUCTURE**

The unique macroporous structure provides greatly increased useful life. It also possesses high resistance to mechanical and osmotic stresses.

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

95% of all beads are in the assignation range; giving a lower pressure drop.

- **SUPERIOR PHYSICAL AND CHEMICAL STABILITY**

The macroporous matrix makes it have excellent resistance to bead breakage and oxidation.

ZGC 151 PROPERTIES

Item	ZGC 151	ZGC 151 FC	ZGC 151 SC	ZGC 151 MB
Polymer Matrix Structure	Polystyrene crosslinked with DVB			
Type	Macroporous strong acid resin			
Appearance	Brown opaque spherical beads			
Ionic Form	Sodium(Na) or hydrogen(H)			
Moisture Content %	45~55			
Total Capacity meq/g	≥ 4.35 (Na)			
meq/ml	≥ 1.7 (Na)			
Screen Size Range (U.S. standard screen)	45~16 ≥ 95	40~16 ≥ 95	28~16 ≥ 95	
Sphericity %	≥ 93			
Uniformity Coefficient, Approx.	≤ 1.6			
Shipping Weight, Approx. lb/ft ³	48~50			
Swelling, Ca ⁺⁺ or Na ⁺ → H ⁺ %	4~7			

SUGGESTED OPERATING CONDITIONS

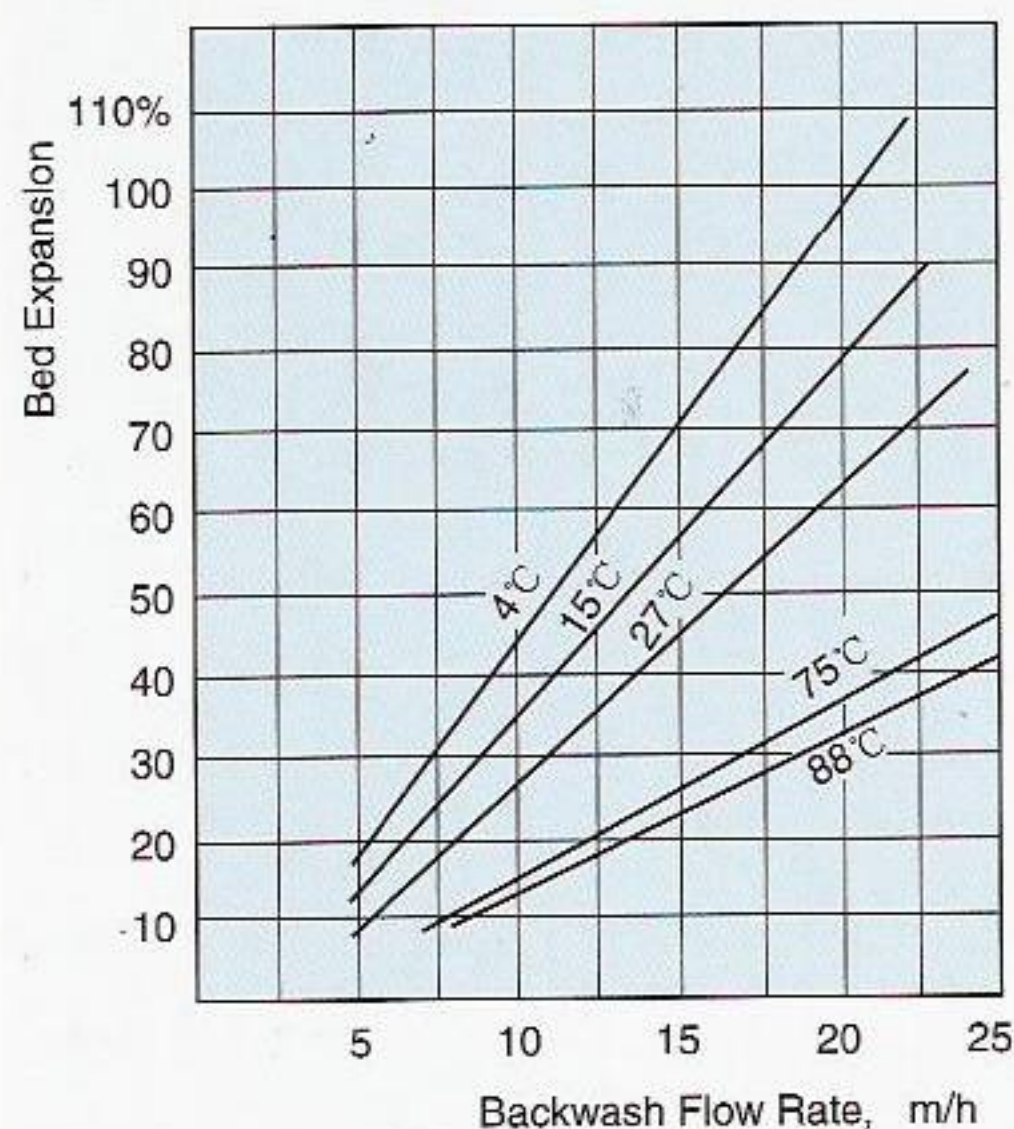
Maximum Temperature	
Sodium Form	300 °F
Hydrogen Form	300 °F
Backwash Rate	50~75% Bed Expansion
pH range	1~14
Swelling, Na ⁺ → H ⁺	≤ 10%
Bed depth(in industry)	1 m
Regenerant	HCl or H ₂ SO ₄
Regenerant Flow Rate	3~7 m/h
Regenerant Contact Time	> 30 min
Regenerant Level	45~100 g/eq
Regenerant Temperature	R.T.
Displacement Rinse Rate	3~8 m/h
Service Flow Rate	20~100 m/h

HYDRAULIC PROPERTIES

After each cycle, the resin bed should be backwashed at a rate that expands the bed 50 to 75%, in order to free it from any particulate matter in the influent solution, to clear the bed of bubbles and voids and to reclassify the resin particles as much as possible ensuring minimum resistance to flow.

The pressure drop(headloss) across a bed of ion exchange resin depends on the particle size distribution, bed depth, operating water temperature and downflow or upflow.

Fig. PRESSURE DROP VS FLOW RATE



PHYSICAL AND CHEMICAL STABILITY

The porosity of an ion exchange resin affects not only the kinetics properties but also the stability. In cation resins macro pores allow higher DVB levels. This gives greater oxidation resistance, thermal and physical stability. Macroporous cation resins is most often used in "in-site" regenerated condensate polishers of high pressure boilers and all kinds of water with high temperature or high flow rate.

ZGC 151 macroporous cation exchange resin has a high degree of crosslinking that makes it particularly well suited to physically demanding applications. The resin exhibits high resistance to mechanical, thermal and osmotic stresses. As a result, ZGC 151 has greater physical strength which will lead to a longer operating life.

ZGC 151 is insoluble in acids, alkali and all common solvents. However, exposure to free chlorine and other strong oxidizing agents over a long period of time will gradually decrosslink the resin.

APPLICATIONS

SOFTENING AND DEIONIZATION

ZGC 151 macroporous strong acid resin is suitable for all kinds of water treatment such as softening, deionization and waste water treatment. It has a longer service life in aggressive waters treatment such as condensate waters, chlorinated waters, and waters with high temperatures or high low rates.

ZGC 151 together with weak acidic cationic resin used in cationic double compartment bed, cationic double compartment floating bed to prepare pure water, ultra-pure water.

CATALYST

ZGC 151 with a macroporous structure because of its superior kinetics, large surface area and proper porosity, is used as a catalyst in many chemical processes.