



# ZG A 352

## Macroporous Strong Base Type II Anion Exchange Resin

### DESCRIPTION

“Zheng Guang” Brand ZGA 352 is a Type II macroporous strong-base anion exchange resin based on polystyrene. ZGA 352 has a unique pore structure which can remove the large molecules, but still maintain a high capacity for the removal of ions. It provides better regeneration efficiency and higher capacities because of its low basicity. ZGA 352 is mainly used in preparation of pure water, especially for the incoming water containing high ratio of mineral.

ZGA 352 series is consist of three products: ZGA 352 for fixed bed system; ZGA 352 FC for double department bed and floating bed system; ZGA 352 SC for dual bed system.

### FEATURES & BENEFITS

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

Conforms to paragraph 21CFR 173.25 of the Food Additives Regulations of the F.D.A.

- **UNIFORM PARTICLE SIZE**

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

- **SUPERIOR PHYSICAL STABILITY**

Over 93% sphericity combined with high crush strengths and uniform particle size provide greater resistance to bead breakage due to mechanical, thermal or osmotic stresses.

- **ORGANIC FOULING RESISTANCE**

The Type II functionality provides higher regeneration efficiency and superior resistance to organic fouling

### ZGA 352 PROPERTIES

Item	ZGA 352	ZGA 352 FC	ZGA 352 SC
Polymer Matrix Structure	Polystyrene crosslinked with DVB		
Type	Strong base Type II		
Appearance	Light yellow or milky opaque spherical beads		
Functional Group	R-N <sup>+</sup> (CH <sub>3</sub> ) <sub>2</sub> (C <sub>2</sub> H <sub>4</sub> OH)X <sup>-</sup>		
Moisture Content %	47~58 (CI)		
Total Exchange Capacity meq/g	≥ 3.6 (CI)		
meq/ml	≥ 1.2 (CI)		
Strong Base Capacity meq/g	≥ 3.3 (CI)		
Screen Size Range	55~16	40~16	28~16
(U.S. standard screen)	≥ 95	≥ 95	≥ 95
Sphericity %	≥ 93		
Uniformity Coefficient, Approx.	≤ 1.6		
Shipping Weight, Approx. lb/ft <sup>3</sup>	41~44		

## SUGGESTED OPERATING CONDITIONS

### Maximum Temperature

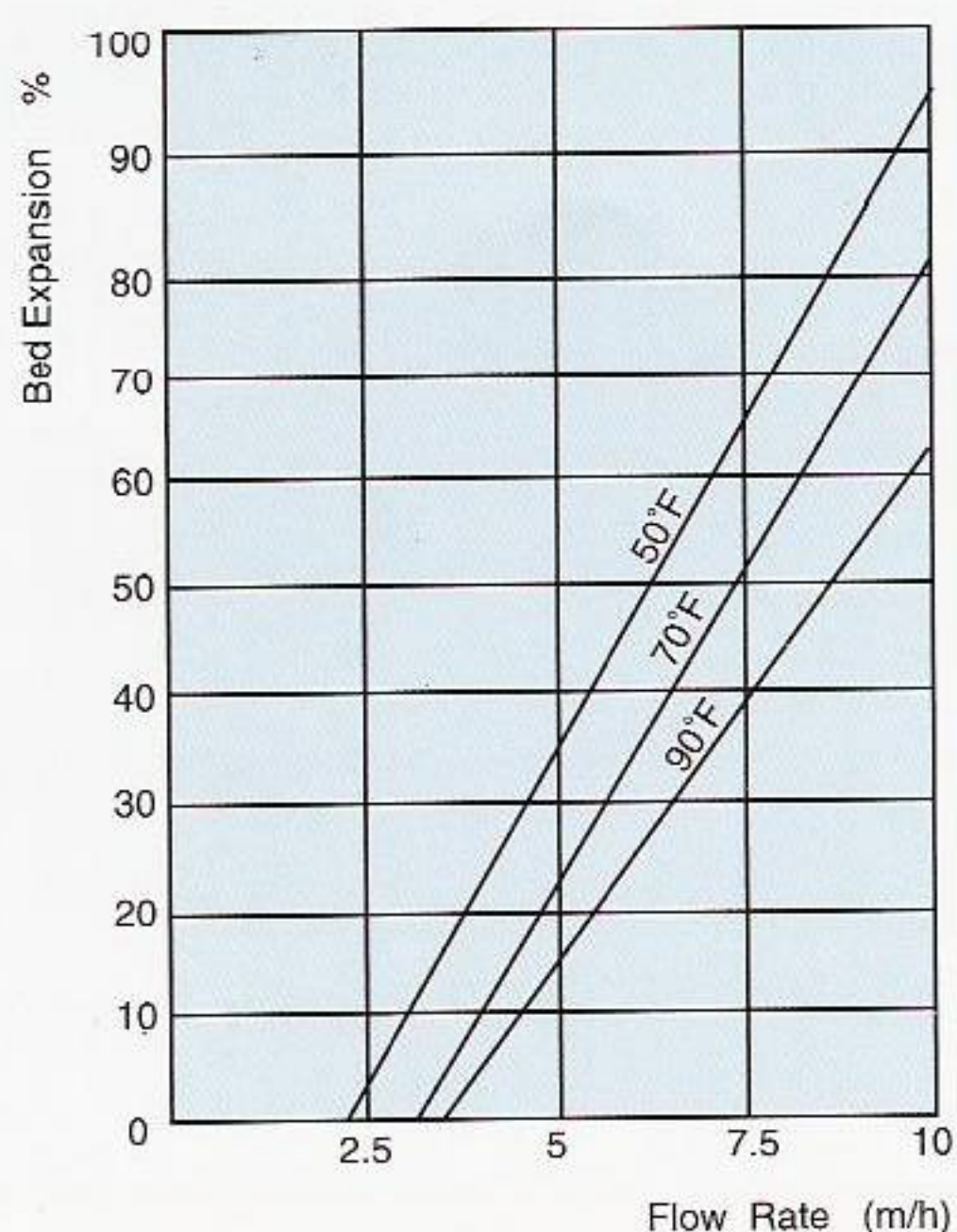
Chloride Form	140 °F
Hydroxide Form	104 °F
Backwash Rate	50~75% Bed Expansion
pH range	1~14
Swelling, Cl <sup>-</sup> → OH <sup>-</sup>	≤ 12%
Bed Depth(Industry)	1~3 m
Regenerant	NaOH
Regenerant Flow Rate	2~5 m/h
Regenerant Contact Time	> 30 min
Regenerant Level	90~120 g/eq
Counter Regeneration	50~65 g/eq
Displacement Rinse Rate	3~5 m/h
Service Flow Rate	15~30 m/h
Mixed Bed Flow Rate	20~40 m/h

## HYDRAULIC PROPERTIES

### BACKWASH BED EXPANSION

After each cycle the resin bed should be backwashed in order to remove any insoluble impurities in the bed. Normally the backwash bed expands about the bed 50~75% for 10~60 minutes or still the effluent is clear.

The graph below shows the expansion characteristics of ZGA 352. The expansion rate is a function of water temperature and backwash flow rate.



## APPLICATIONS

### DEMINERALIZATION

The performance of an ion exchange resin also depends on the nature of the functional group, the polymer matrix which is a gel or macroporous. The macroporous structure gives ZGA 352 strong base resin improved organic fouling resistance and greater physical stability. It is generally used in both multiple and mixed bed deionization systems where its tremendous operating capacity is best utilized. In mixed bed operations, both cation and anion are mixed in a single unit to produce pure water.

ZGA 352 series is especially used for production of pure or ultra-pure water in double compartment bed, dual bed and mixed bed systems. It is suited to treat incoming water containing high ratio of ions.

### DECOLORIZATION

ZGA 352 with macroporous structure has high resistance to organic fouling and higher regeneration efficiency. The resin is most often used for color removal and organic scavenging. It provides higher quality water with low TOC values, especially for incoming water with higher salt content and lower TOC effluents. In some applications that also require water of low taste and odor, such as in pharmaceutical, cosmetics, food processing and humidification, the Type II resin will still be selected because it has less odor.

ZGA 352 is usually used in decolorization of cane sugar and corn syrup and in pharmaceutical industry. It can be suitable for separation and purification of biochemicals and antibiotics from ferment liquid.

### OTHER APPLICATIONS

ZGA 352 can be used in the chloride cycle to reduce nitrates. In the sulfite form it can be used to remove oxygen from demineralized or distilled water.