



Z G A 351

Macroporous Strong Base Type I Anion Exchange Resin

DESCRIPTION

“Zheng Guang” Brand ZGA 351 is a macroporous strong-base Type I anion exchange resin based on polystyrene with quaternary amine groups. It has a unique macroporous structure which contributes its high capacity and excellent physical and chemical stability. Its resistance to organic fouling is superior to gel resin because of its large pore structure. The resin is mainly used in preparation of pure water, ultra-pure water and condensation polishing. It can be used for waste water treatment, recovery of metals and many chemical processing applications.

ZGA 351 series has four products: ZGA 351 for general use; ZGA 351 FC for double compartment bed and floating bed system; ZGA 351 SC for dual bed and ZGA 351 MB for mixed bed system, especially in condensate polishers with high flow rate.

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 to mechanical, thermal or osmotic stresses.

- **ORGANIC FOULING RESISTANCE**

The unique macroporous structure provides higher removal capacity and greater elution of large organic molecules increasing resistance to organic fouling.

ZGA 351 PROPERTIES

Item	ZGA 351	ZGA 351 FC	ZGA 351 SC	ZGA 351 MB
Polymer Matrix Structure	Polystyrene crosslinked with DVB			
Type	Strong base Type I			
Appearance	Light yellow or milky opaque spherical beads			
Functional Group	$R-N^+(CH_3)_3X^-$			
Moisture Content %	50~60			
Total Exchange Capacity meq/g	≥ 3.8 (CI)			
meq/ml	≥ 1.15		≥ 1.10	≥ 1.15
Strong Base Capacity meq/g	≥ 3.7 (CI)			
Screen Size Range	55~16	40~16	28~16	40~20
(U.S. standard screen)	≥ 95	≥ 95	≥ 95	≥ 95
Sphericity %	≥ 93			
Uniformity Coefficient, Approx.	≤ 1.6			
Shipping Weight, Approx. lb/ft ³	41~44			

SUGGESTED OPERATING CONDITIONS

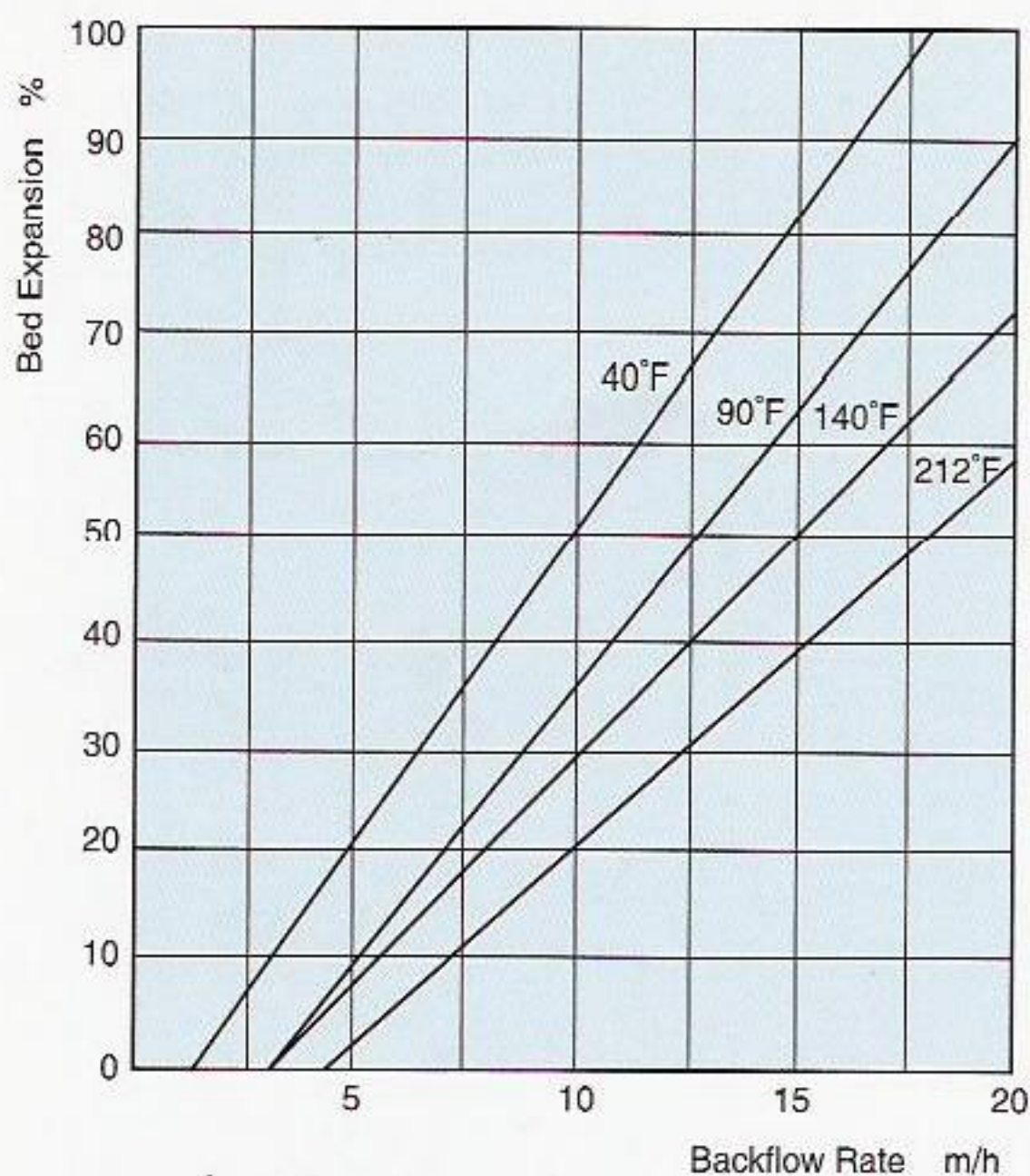
Maximum Temperature	
Chloride Form	170°F
Hydroxide Form	140°F
Backwash Rate	50~75% Bed Expansion
pH range	1~14
Swelling, $\text{Cl}^- \rightarrow \text{OH}^-$	$\leq 20\%$
Regenerant	NaOH
Regenerant Flow Rate	2~5 m/h
Regenerant Contact Time	> 30 min
Regenerant Level	100~120 g/eq
Counter Regeneration	55~65 g/eq
Displacement Rinse Rate	2~5 m/h
Service Flow Rate	15~40 m/h
Mixed Bed Flow Rate	20~100 m/h

HYDRAULIC PROPERTIES

BACKWASH BED EXPANSION

After each cycle, the resin bed should be backwashed. The bed expansion depends on the backwash flow rate and water temperature.

The graph below shows the bed expansion as a function of water temperature and backwash flow rate.



APPLICATIONS

DEIONIZATION AND DEMINERALIZATION

ZGA 351 can be used in both multiple and mixed bed demineralizers wherever all kinds of ions and organic will be removed. The resin has longer service life and higher quality effluents in mixed bed demineralizers such as condensate polishers, because it has unique structure with a high resistance to the corresponding mechanical, thermal and osmotic stresses and also features of excellent separability during regeneration due to its low density and opaque appearance.

ZGA 351 AS ORGANIC SCAVENGER RESIN

ZGA 351 with unique macroporous structure provides the capability of reversibly adsorbing naturally occurring organic substances that tend to foul anion resins. It gives higher operating capacity and higher quality effluents when an influent containing much more organic materials is used.

PHYSICAL STABILITY

Type 1 anion exchange resin has greater thermal and oxidation resistance than other types of strong base resins and can be operated at higher temperatures to insure low silica leakages. ZGA 351 with macroporous structure and Type I functionality can be chosen where the incoming water temperature is in excess of 85°F or where the combination of carbon dioxide plus silica exceed 40% of the total anions.

OTHER APPLICATIONS

ZGA 351 macroporous strong base Type I anion exchange resin can also be used in many fields such as hydro-metallurgy, decolouring in food industry, decoloring cane sugar and corn syrup, separation and purification of biochemicals and in pharmaceutical industry.