



# Z G A 302

## Strong Base Type II Anion Exchange Resin

### DESCRIPTION

“Zheng Guang” Brand ZGA 302 is a bead-form standard gel strong base Type II quaternary ammonium anion exchange resin with a styrene-DVB copolymer matrix. It has both high operating capacity and superior regeneration efficiency. This resin provides greater resistance to organic fouling than Type II strongly basic exchangers. It is suitable for the incoming water containing high level of mineral and organic substances. ZGA302 can be used in all types demineralizers.

### FEATURES & BENEFITS

- **COMPLES WITH FDA REGULATIONS FOR POTALE WATER APPLICATIONS**

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

- **UNIFORM PARTICLE SIZE**

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

- **ORGANIC FOULING RESISTANCE AND HIGH OPERATING CAPACITY**

The resin provides a higher regeneration efficiency and superior resistance to organic fouling compared with other types of strongly basic anion exchanger resins due to its Type II functional group.

- **SUPRIOR PHYSICAL STABILITY**

The resin combined with high crush strengths and uniform particle size provide excellent mechanical, thermal and osmotic stability and dynamic properties.

### ZGA 302 PROPERTIES

Appearance	Light yellow semitransparent spherical beads
Polymer Matrix Structure	Polystyrene crosslinked with DVB
Type	Gel strong basic Type II anion exchange resin
Functional Group	$R-N^+(CH_3)_2(C_2H_4OH)X^-$
Moisture Retention %	36~46
Total Capacity meq/g	$\geq 3.4$ (Cl)
meq/ml	$\geq 1.45$ (Cl)
Strong Base Capacity meq/g	$\geq 3.2$ (Cl)
Screen Size Range	55~16
(U.S. standard screen)	$\geq 95$
Sphericity %	$\geq 93$
Uniformity Coefficient, Approx.	$\leq 1.6$
Shipping Weight, Approx. lb/ft <sup>3</sup>	42~47
pH Range	1~14

## SUGGESTED OPERATING CONDITIONS

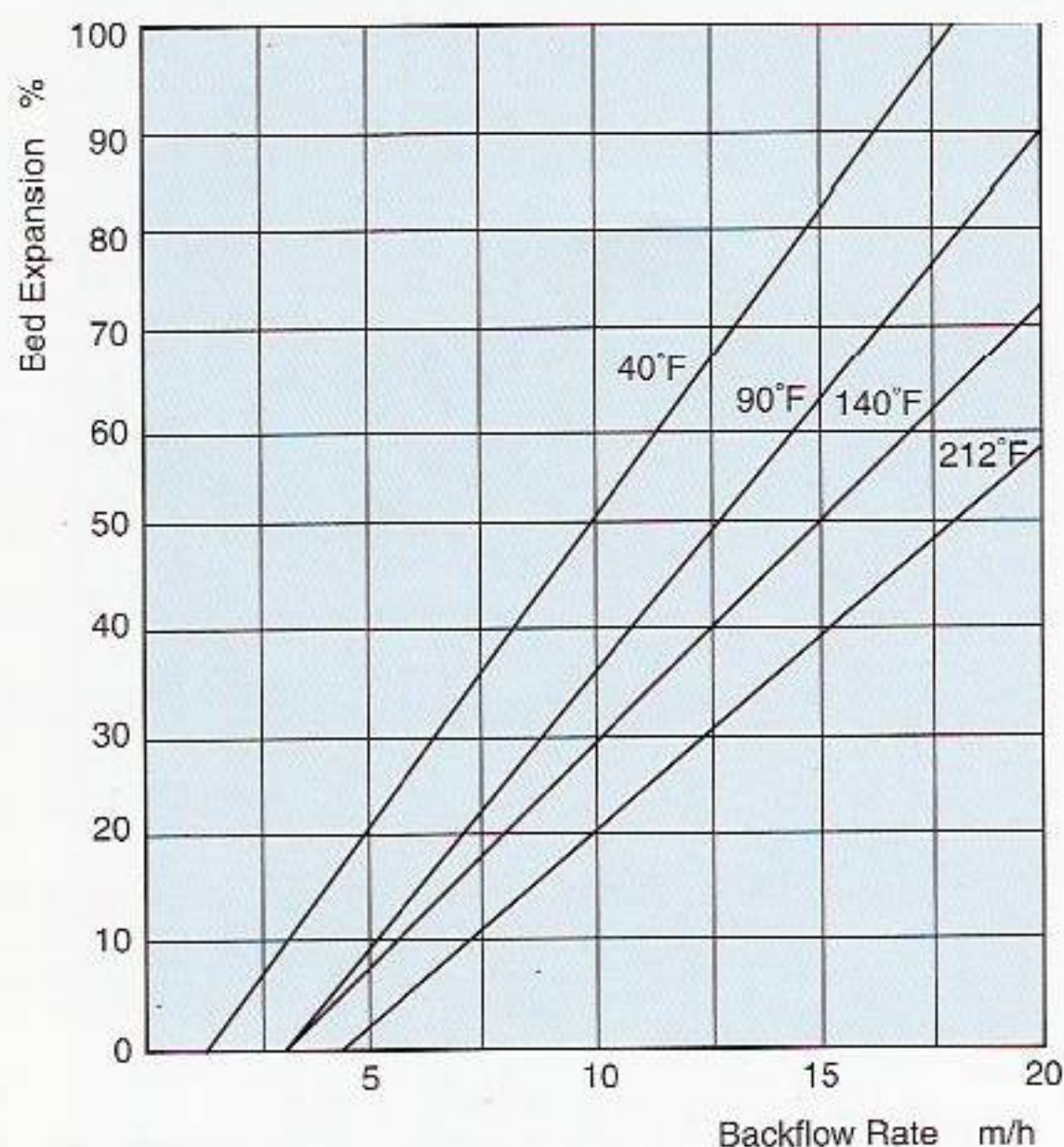
Maximum Temperature	
Chloride Form	170°F
Hydroxide Form	105°F
Backwash Rate	50~75% Bed Expansion
pH range	1~14
Swelling, $Cl^- \rightarrow OH^-$	$\leq 15\%$
Bed Depth(Industry)	1~3 m
Regenerant	NaOH
Regenerant Flow Rate	
Downflow	4~5 m/h
Upflow	2~5 m/h
Regenerant Contact Time	> 30 min
Regenerant Level	
Downflow	90~120 g/eq
Upflow	50~65
Displacement Rinse Rate	3~5 m/h
Service Flow Rate	15~30 m/h

## HYDRAULIC PROPERTIES

After each cycle, the resin bed should be backwashed to remove all particulate matter filtered out by the exchanger and reclassify the bed eliminating any channels which may have formed.

The graph below shows the expansion characteristics of ZGA302 in the chloride form.

**Fig.1 BACKWASH BED EXPANSION**



## APPLICATIONS

ZGA302 has both excellent physical and chemical stability and greater regeneration efficiency. Its superior resistance to organic fouling provides a longer service life especially in treatment incoming water containing high level of mineral and organic substances.

The resin is a Type II strong base anion exchange resin devoid of taste and odor and meets the requirements of paragraph 173.25 of the FDA Code of Federal Regulations no.21. It can be used in the food industry and preparation of beverage and potable water. In some applications that also require water of low taste and odor, such as in pharmaceutical, cosmetics, good processing and humidification, the Type II resin will still be selected due to less odor.

ZGA302 is generally used in both multiple and mixed bed deionization systems where its tremendous operating capacity is best utilized. In multiple bed deionization systems, the incoming water supply is first passed through a cation exchange resin bed. In mixed bed operations, both cation and anion resins are mixed in a single unit to provide the ultimate in high purity from a deionization system.

The resin can be regenerated with sodium chloride and used to remove alkalinity. It is also used in the chloride cycle to reduce nitrates and in the sulfite form to remove oxygen from demineralized or distilled water.

ZGA302 strong base type II anion exchange resin is suitable for preparation of pure water, especially for water source with higher salt content and separation of biochemicals.

ZGA302 is usually used in decolorization of cane sugar and corn syrup and in pharmaceutical industry. It is suitable for separation and purification of antibiotics from ferment liquid.