



Z G C 258

Macroporous Weak Acid Cation Exchange Resin

DESCRIPTION

“Zheng Guang” Brand ZGC 258 is an acrylic-based macroporous weak-acid cation exchange resin containing carboxylic groups. It can be used in the cases of softening, dealkalizing, deionization and chemical processing. It is ideally suited for softening of high TDS water and for special applications such as treatment of aqueous organic solutions and selective separation of heavy metal cations. It can also be used for isolating and purification of biochemical and pharmaceutical substances.

ZGC 258 has high operating capacity for divalent cations and extremely high regeneration efficiency. This resin is supplied in the hydrogen(H) form or in the sodium(Na) form for special applications. ZGC 258 series contains three products: ZGC 258 for general applications; ZGC 258 FC for double compartment bed and floating bed system; ZGC 258 SC for dual bed system.

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.

- **CARBOXYLIC FUNCTIONAL GROUPS**

Give extremely high regeneration efficiencies and high operating capacities.

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

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

- **SUPERIOR PHYSICAL STABILITY**

93% sphericity, combined with low swelling, macroporous structure, high crush strength, and uniform particle size provide greater resistance to bead breakage due to mechanical, thermal or osmotic stresses.

ZG C 258 PROPERTIES

Item	ZGC 258	ZGC 258 FC	ZGC 258 SC	ZGC 258 MB
Polymer Matrix Structure	Polyacrylic			
Type	Macroporous weak acid resin			
Appearance	Milky or light yellow opaque spherical beads			
Ionic Form	Sodium(Na) or hydrogen(H)			
Moisture Content %	45~55			
Total Capacity meq/g	≥ 11.0 (H)			
meq/ml	≥ 4.2 (H)			
Screen Size Range mesh	55~16	40~16		28~55
(U.S. standard screen)	≥ 95	≥ 95		≥ 95
Uniformity Coefficient, Approx.	≤ 1.60	≤ 1.50		≤ 1.40
Shipping Weight, Approx. lb/ft ³	45~50			
Swelling, H ⁺ → Na ⁺ %	≤ 65			

SUGGESTED OPERATING CONDITIONS

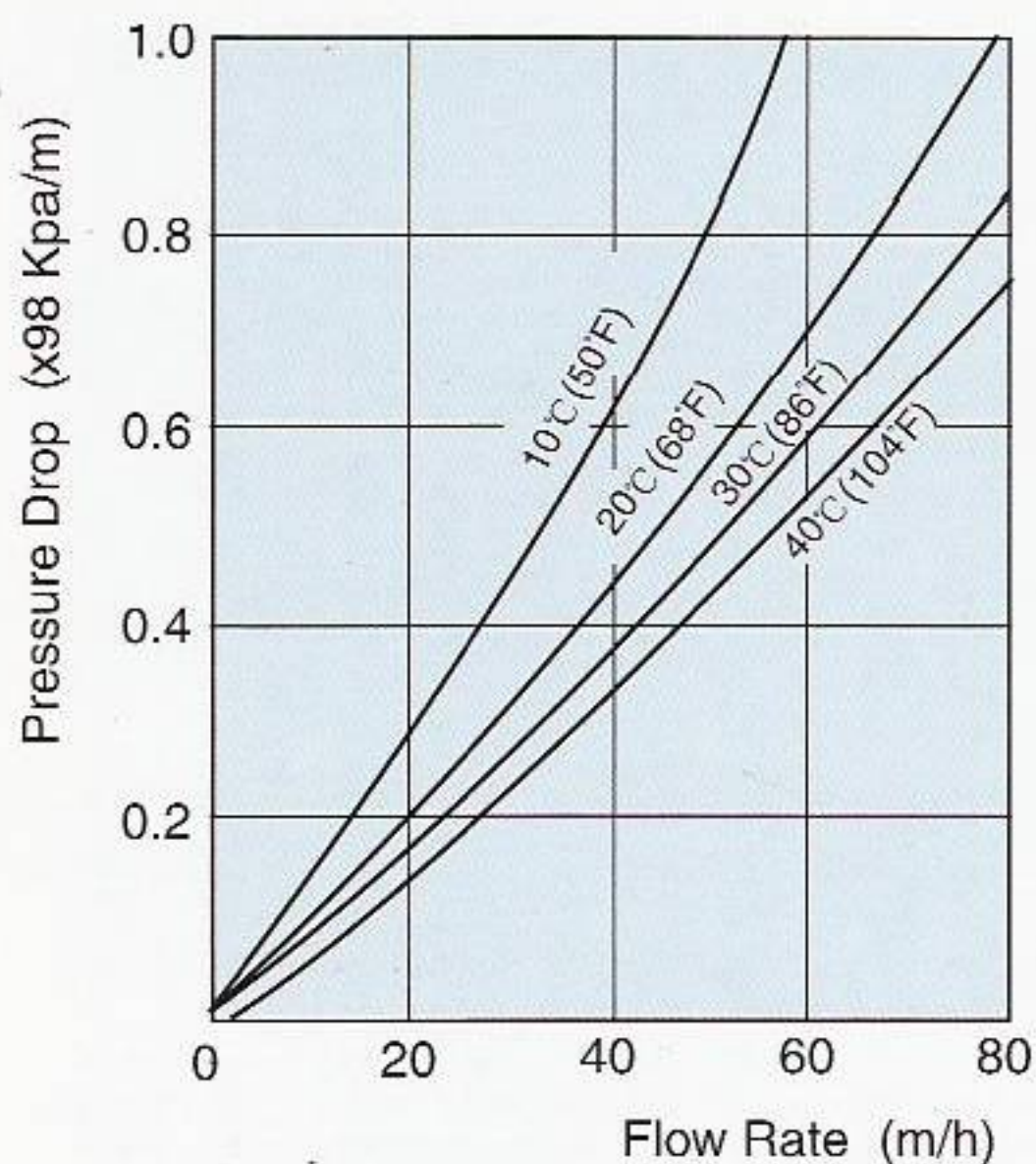
Maximum Temperature	
Sodium Form	250 °F
Hydrogen Form	250 °F
Backwash Rate	50~75% Bed Expansion
pH range	4~14
Bed depth(in industry)	0.6~2.0 m
Regenerant	HCl or H ₂ SO ₄
Regenerant Flow Rate	4~10 m/h
Regenerant Contact Time	> 30 min
Regenerant Level	
HCl	40~55 g/eq
H ₂ SO ₄	60~75 g/eq
Regenerant Temperature	R.T.
Displacement Rinse Rate	4 ~6 m/h
Service Flow Rate	15 ~40 m/h

HYDRAULIC PROPERTIES

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.1 shows the expected pressure loss per meter of bed depth as a function of flow rate at various water temperatures.

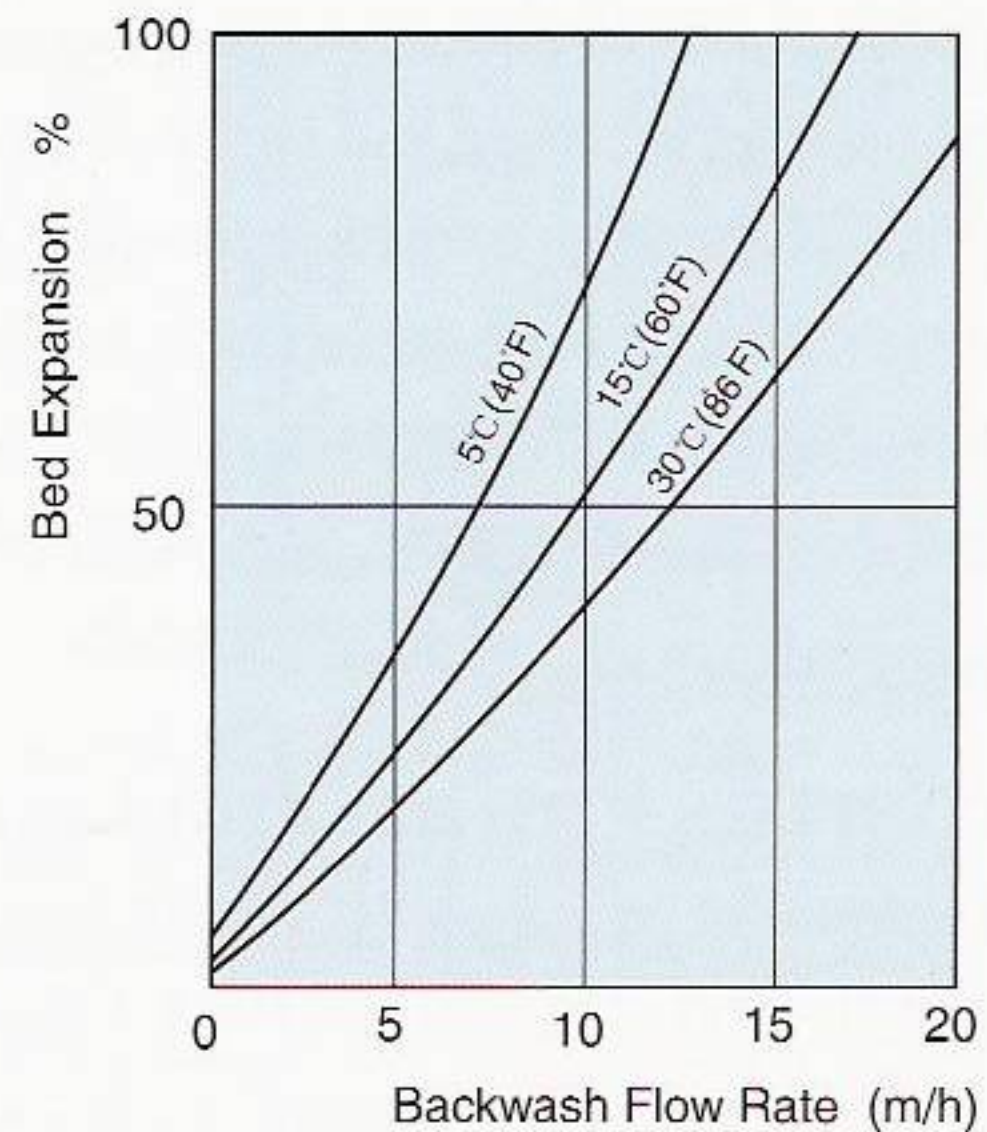
Fig.1 PRESSURE DROP VS FLOW RATE



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75%. This will remove any granular, insoluble impurities and reclassify the bed. Fig.2 shows the bed expansion characteristics of ZGC 258 in the hydrogen form.

Fig. 2 BACKWASH EXPANSION



APPLICATIONS

WATER TREATMENT

ZGC 258 in the hydrogen form can be used to remove divalent cations associated with alkalinity when operated as the primary cation unit in multiple bed demineralizers. The weak acid resin can be economically regenerated using the waste acid from the secondary cation unit.

PHARMACEUTICAL SEPARATIONS

ZGC 258 is used to separate certain antibiotics from the fermentation broths in which they are produced, and also in their final purification. It can be suitable for separation and purification of the amino- acids and many kinds of biochemicals.

METALS REMOVAL

ZGC 258 can be operated in the sodium or hydrogen cycle to remove heavy metals from waste streams with a pH above 5.5 in the absence of hardness. Operation in the sodium form provides a neutral pH effluent but requires a two stage regeneration.