

# A-100

## Anion Exchange Resin Weak Base Macroporous

### Technical Data

#### PRODUCT DESCRIPTION

**Purolite A-100** is a macroporous polystyrenic weak base anion resin having tertiary amine functionality. **Purolite A-100** is designed to exhibit high operating capacity in removing strong acids formed after decationizing water through a strong acid cation resin like **Purolite C100H**. Because of its special porosity characteristics **Purolite A-100** shows excellent properties for removal of naturally occurring organic species from waters along with superior elution efficiency of the organics during regeneration.

**Purolite A-100** also shows excellent resistance to osmotic shock as well as being physically resistant to mechanical breakage. Regeneration with caustic soda requires only 125% of the stoichiometric equivalent when related to the ionic loading on the resin at the exhaustion point. The rinse characteristics are good and minimum volumes of decationized water are required to rinse down to a conductivity of 50  $\mu$ S/cm.

Typical Physical & Chemical Characteristics	
Polymer Matrix Structure	Crosslinked Styrene-DVB Macroporous structure
Physical Form and Appearance	Hard Spherical Opaque Beads
Functional Groups	Weak Base Tertiary Amine
Ionic Form, as shipped	Free Base
Shipping Weight (approx.) Free Base form	660 g/l (40 lb/ft <sup>3</sup> )
Particle Size Range	+1200 microns <5%, -300 microns <2%
Moisture Retention	53 - 60%
Uniformity Coefficient	1.5 average
Reversible Swelling FB $\rightarrow$ Cl <sup>-</sup>	20% max.
Specific Gravity, Free Base form	1.06
Total Exchange Capacity	1.3 eq/l min.
Operating Temperature, Free Base form	100°C (212°F) max.
pH Range, Stability	0 - 14

Standard Operating Conditions				
Operation	Rate	Solution	Minutes	Amount
Service	8 - 40 BV/h 1 - 5 gpm/ft <sup>2</sup>	Effluent from Cation Exchanger	as per design	as per design
Backwash	5 - 7 m/h	Influent water 4° - 25°C	5 - 20	1.5 - 4 BV 12 - 30 g/ft <sup>3</sup>
Regeneration	4 BV/h 0.5 gpm/ft <sup>3</sup>	2 - 4% NaOH	30	32 - 96g NaOH/l 2 - 6 lb/ft <sup>3</sup>
Rinse, (slow)	4 BV/h	Decationized water	20	1 - 5 BV
Rinse, (fast)	16 BV/h	Decationized water	15	4 BV
Backwash Expansion 35% to 50%				
Design Rising Space 75%				
"Gallons" refer to U.S. Gallon = 3.785 litres				

## OPERATIONAL PROPERTIES

**Purolite A-100** is supplied in the fully regenerated form to be put into service immediately. We recommend, however, that the resin be backwashed to prevent channeling or pressure loss. A backwash expansion of 35 to 50% would be adequate. When **A-100** is followed by a

strong base resin (e.g. **A-400**), all or a portion of the regenerant can be used to regenerate the weak base resin. We recommend that this procedure be reviewed with us so that we can determine whether enough caustic is available to completely regenerate **A-100**.

### MINIMUM REGENERATION LEVELS FOR ALL REGENERANTS

	Regeneration Levels		Regeneration Concentration %
	g/l	lbs/ft <sup>3</sup>	
NaOH	44.8	2.8	2.4
NH <sub>3</sub>	20.8	1.3	2.0
Na <sub>2</sub> CO <sub>3</sub>	60.8	3.8	5.0

### DETERMINATION OF CAPACITY

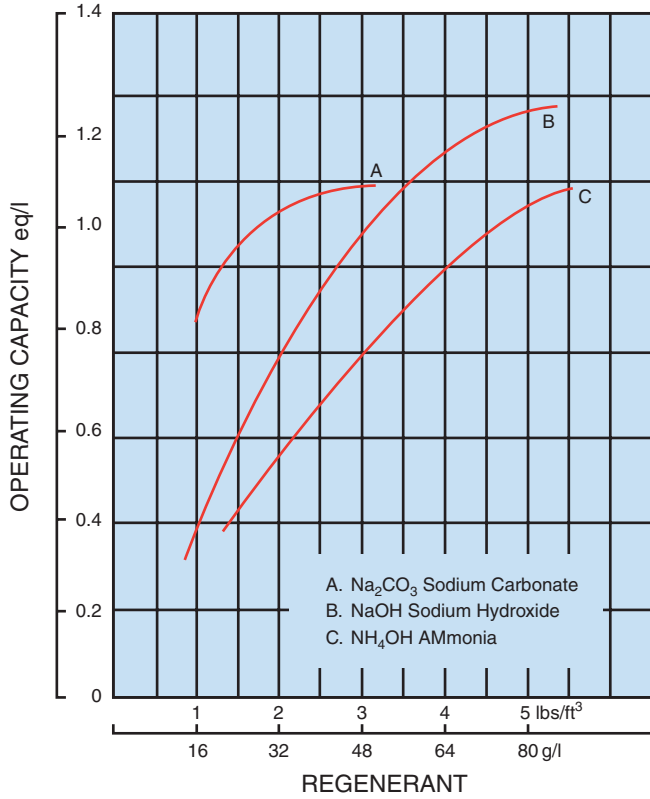
Multiply Base Operating Capacity (Fig. 1) by Flowrate Correction Factor (Table 1)

Table 1

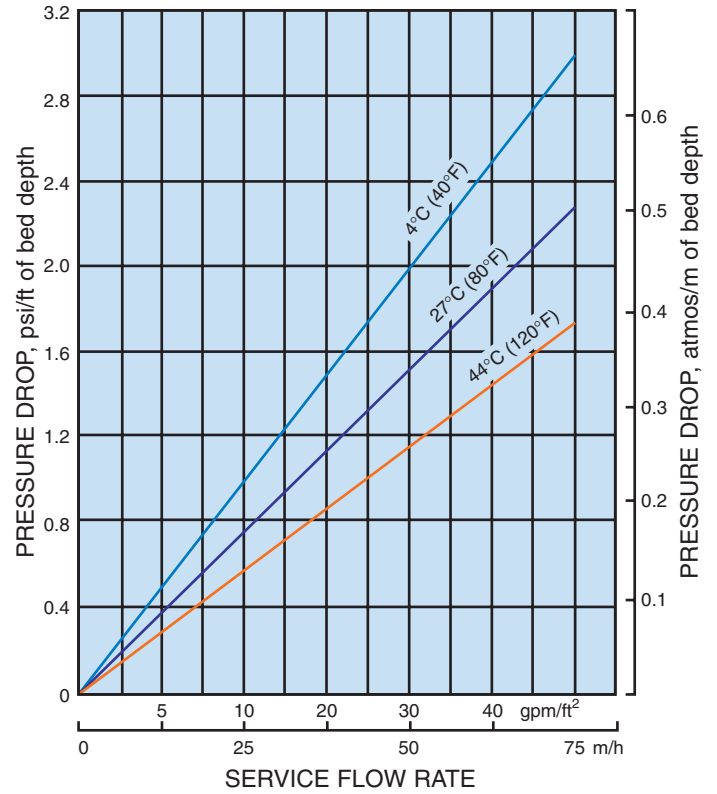
Flowrate Correction Factor										
Flowrate, m/h	2.5	5	7.5	10	12.5	15	17.5	20	22.5	25
Correction Factor	1.1	1.0	.93	.88	.84	.81	.77	.75	.73	.70

**Fig. 1 OPERATING CAPACITY**

INFLUENT 500 ppm HCl as CaCO<sub>3</sub>  
BED DEPTH - 600 mm

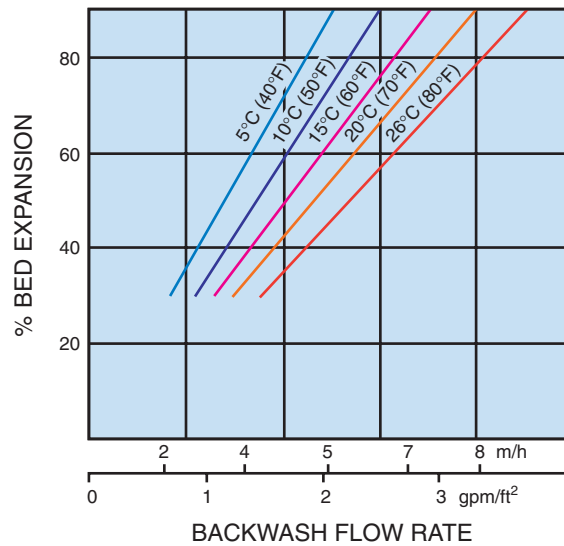


**Fig. 2 PRESSURE LOSS CHARACTERISTICS**



**Fig. 3 BACKWASH BED EXPANSION**

AT DIFFERENT FLOW RATES AND TEMPERATURES



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