THERMAX

TULSION® A-23 UPS

'Crack Free' Strong Base Anion Exchange Resin Type I

TULSION® A 23 UPS is a specially developed, premium grade, strongly basic anion exchange resin based on polystyrene matrix containing quaternary ammonium Type- I groups with excellent physical and chemical stability for use in condensate polishing and mixed bed applications. TULSION® A-23 UPS is supplied as moist robust beads in chloride form and has a controlled particle size cut for minimizing pressure loss in high flow column operations It is used with TULSION® T- 42 UPS for better results in mixed bed applications.

TYPICAL CHARACTERISTICS – Tulsion® A- 23 UPS

Type	:	Strong Base Anion Exchange Resin
Matrix structure	:	Cross-linked polystyrene
Functional group	:	Quaternary Ammonium Type I
Physical form	:	Moist spherical beads
Ionic form	:	Chloride
Uniformity coefficient (max.)	:	1.3
Harmonic mean size mm	:	0.58 (± 0.05 mm)
Total exchange capacity (minm.)	:	1.3 meq/ ml
Swelling (approx.)	:	Cl- to OH- 20%
Moisture content	:	53 ± 3%
Backwash settled density	:	42 to 44 lbs/ ft^3 (670 to 710 g/l)
Thermal stability °C/ °F	:	60 °C (140 °F)
pH range	:	0 to 14
Solubility	:	Insoluble in all common solvents

OPERATING CONDITIONS – Tulsion® A- 23 UPS

Operating temperature	max. °C	:	60
Resin bed depth (minm.)	mm	:	800
Service flow rate	max.	:	60 m^3/hr/ m^3
Backwash flow rate		:	5 to10 m^3/hr/ m^3
Back wash expansion		:	50 to 70%
Regenerant		:	Na OH ,
Regeneration levels.		:	40 to 160 gms NaOH / lit
Regeneration concentration		:	4 - 5% Na OH
Regeneration contact time	minm.	:	30 to 60 minm.
Regeneration flow rate		:	5 to 10 m^3/hr/ m^3
Regeneration slow rinse		:	2 BV minm.
Fast rinse		:	Service flow rate
Fast rinse volume		:	4 to 6 BV

HYDRAULIC CHARACTERISTICS

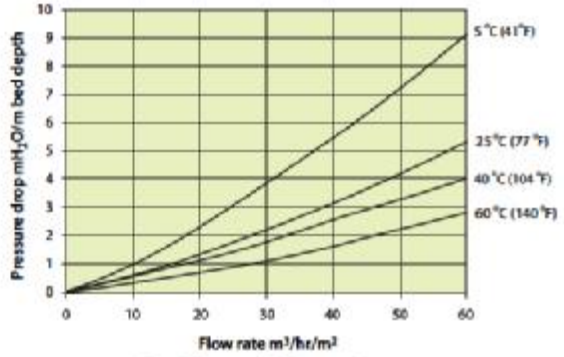

Fig. 1 Flow rate Vs Pressure Drop

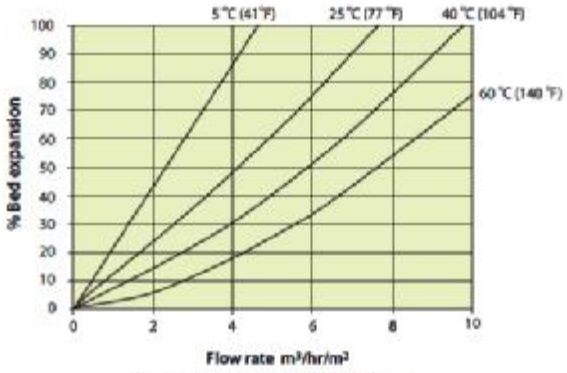

Fig. 2 Flow rate Vs % Bed expansion

TESTING

The sampling and testing of ion exchange resins is done as per standard testing procedures, namely ASTMD-2187 and IS-7330, 1998.

PACKING

Super sacks	1000 liters
MS drums	180 liters
HDPE lined bags	25 liters

Super sacks	35 cft
Fiber drums	7 cft
HDPE lined bags	1 cft

For Handling, Safety and Storage requirements please refer to the individual Material Safety Data Sheets available at our offices. The data included herein are based on test information obtained by Thermax Limited. These data are believed to be reliable, but do not imply any warranty or performance guarantee. Tolerances for characteristics are as per BIS/ASTM. We recommend that the user should determine the performance of the product by testing on own processing equipment.

For further information, please contact:

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