

TULSION® T-40

STRONG ACID CATION EXCHANGE RESIN FOR SOFTENING

Tulsion® T-40 is a strong acid cation exchange resin of polystyrene sulfonated type, supplied in sodium form, specially developed for industrial and domestic softening applications. TULSION® T-40 combines properties of high exchange capacity, combined with excellent physical and chemical properties under varied operating conditions.

TYPICAL CHARACTERISTICS

Type	: Strong Acid Cation Exchange Resin
Matrix structure	: Cross- linked Polystyrene
Functional group	: Sulfonic Acid
Physical form	: Moist Spherical Beads
Ionic form	: Sodium
Screen size U.S.S.(wet)	: 16 to 50
Particle size	: 0.3 to 1.2 mm
Total Exchange Capacity	: 1.8 meq/ml
Swelling (approx.)	: Na ⁺ to H ⁺ 10%
Moisture content (approx.)	: 50%
pH range	: 0 to 14
Solubility	: Insoluble in all common solvents
Backwash settled density	: 810 to 850 g/l
Shipping Weight	: 0.83 kg / lit (approx.)

TYPICAL OPERATING CONDITIONS

Maximum operating temp. : 140° C (280° F)

Resin bed depth (minimum) : 24" (600 mm)

Maximum Service flow : 60 m³/hr/m³

Backwash expansion space : 40 to 75%

Backwash flow rate for 40 to 75% expansion at 25° C (77° F) : 10 to 16 m³/hr/m²

Regenerant : NaCl

Regeneration level 100% NaCl : 60 to 160 g/l

Regenerant flow rate : 1 to 4 m³ /hr/m³

Regeneration time : 20 to 40 minutes

Regenerant concentration : 5 to 15 %

Rinse flow rate : Slow : At regenerant flow rate

Fast : At service flow rate

Rinse volume : 3 to 5 m³/m³

Influent Limitations

Free chlorine : Not traceable

Turbidity : Less than 2 N. T. U.

Iron and heavy metals : Less than 0.1 ppm.

Operating Capacity and Leakage in Sodium Cycle

In softening, the hardness which comprises of calcium and magnesium ions is replaced by more soluble sodium ions. When the resin is exhausted with calcium and magnesium ions, it is regenerated using sodium chloride solution. Regeneration with 10 to 15% brine

solution (sodium chloride solution) gives optimum capacity. The operating capacity of TULSION T-40 is governed by

- Regeneration level, concentration, contact time
- Service flow rate
- Composition of raw water (% of sodium to total cations present in raw water, TDS and total hardness)

Operating Capacity and Treated Water Quality at Sodium/ Total Cation Ratio of 20% and Total Hardness of 500 ppm.					
Regeneration level		Operating capacity at at 5 gpm/ft ³ (40 m ³ /hr/m ³)		Hardness Leakage as ppm CaCO ₃	
lbs/ft ³	g/l	Kgrs (CaCO ₃)/ft ³	g(CaCO ₃)/l		
3.75	60	15.7	36	6	
5.0	80	18.8	43	3	
6.25	100	21.8	50	2	
7.5	120	24.0	55	1.5	
10.0	160	28.8	66	<1	

PACKING :

Fibre/MS drums	140 / 180
lits	

HDPE lined bags 25 / 30 lits

Fibre drums	5 / 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. We recommend that the user should determine the performance of the product by testing on his own processing equipment. We assume no liability or responsibility for patent infringement resulting from the use of this product.