

# TULSION<sup>®</sup> T-52

## Premium Strong Acid Cation Exchange Resin

**TULSION<sup>®</sup> T-52** is a premium quality strong acid cation exchange resin, having excellent resistance to oxidizing agents for use in industrial water softening, demineralization, condensate polishing and other process applications involving rigorous operating conditions. It is a higher crosslinked product.

**TULSION<sup>®</sup> T-52** is produced as moist spherical beads, containing nuclear sulphonic acid groups, having excellent physical and chemical characteristics.

### TYPICAL CHARACTERISTICS – TULSION<sup>®</sup> T-52

Matrix structure	:	Polystyrene copolymer
Functional group	:	Nuclear sulphonic
Physical form	:	Moist spherical beads
Ionic form	:	Hydrogen
Screen size U.S.S (wet)	:	16 to 50
Particle size (minm. 95%)	:	0.3 to 1.2 mm
Total exchange capacity (minm.)	:	1.9 meq/ml (H <sup>+</sup> ), 2.1 meq/ml (Na <sup>+</sup> )
Swelling (approx.)	:	Na <sup>+</sup> to H <sup>+</sup> 6%
Moisture content	:	48 ± 3% H form.
Backwash settled density	:	830 to 860 g/l (52 - 54 lbs/cft) (H <sup>+</sup> )
Thermal stability	:	248° F / 120° C
pH range	:	0 to 14
Solubility	:	Insoluble in all common solvents

### TYPICAL OPERATING CONDTION – TULSION<sup>®</sup> T-52

Maximum operating temperature	:	120° C (250° F) in H <sup>+</sup> form 140° C (280° F) in Na <sup>+</sup> form
Resin bed depth ( minm.)	:	600 mm (24")
Maximum service flow	:	120 m <sup>3</sup> /hr/m <sup>3</sup> (15 gpm /ft <sup>3</sup> )
Backwash expansion space	:	40 to 75 %
Backwash flow rate for 40 – 70 % expansion	:	9 to 25 m <sup>3</sup> /hr/m <sup>3</sup> (4 to 10 gpm/ft <sup>2</sup> )
Regenerant	:	HCL and H <sub>2</sub> SO <sub>4</sub> for 'H' form and NaCl for 'Na' form
Regeneration level	:	30 - 160 g HCl/l (1.9 to 1.0 lbs HCl/ft <sup>3</sup> ) 40 - 250 g H <sub>2</sub> SO <sub>4</sub> /l (2.5 to 15.6 lbs HCl/ft <sup>3</sup> ) 60 - 160 g NaCl/l (3.7 to 1.0 lbs HCl/ft <sup>3</sup> )
Regenerant concentration	:	1.5 to 5% for H <sub>2</sub> SO <sub>4</sub> , 3.0 to 5.0% HCl & 5.0 – 15.0% NaCl
Regenerant flow rate	:	2 to 16 m <sup>3</sup> /hr/m <sup>3</sup> (0.25 to 2 gpm/ft <sup>3</sup> )
Regeneration time	:	20 to 60 mins.
Rinse flow rate : Slow	:	At regeneration flow rate
: Fast	:	At service flow rate
Rinse volume	:	3 to 5 m <sup>3</sup> /m <sup>3</sup> (25 to 40 gal/ft <sup>3</sup> )

## INFLUENT LIMITATION

Free chlorine	:	Not traceable
Turbidity	:	Less than 2 NTU
Iron and heavy metals	:	Less than 0.1 ppm

## HYDRAULIC CHARACTERISTICS

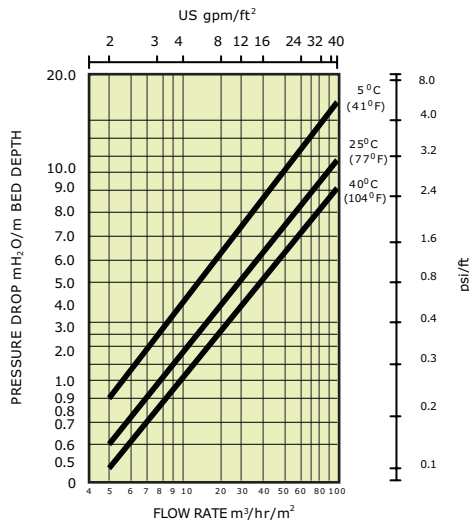


FIG. 1 PRESSURE LOSS

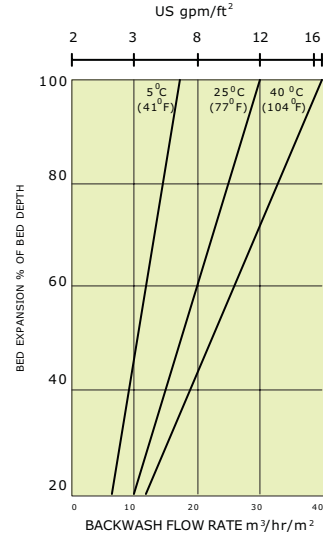


FIG. 2 BACKWASH AND BED EXPANSION

## TESTING

The sampling and testing of ion exchange resins is done as per standard testing procedures, namely ASTM-D-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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In view of our constant endeavour to improve the quality of our products, we reserve the right to change their specifications without prior notice.

Menu

Back

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