

# TULSION® A-33

## Crack-Free Strong Base Anion Exchange Resin Type I - Nuclear Grade

**TULSION® A-33** is a specially developed, premium grade, strongly basic anion exchange resin based on polystyrene matrix containing quarternary ammonium Type I groups with excellent physical and chemical stability for use in the nuclear industry.

**TULSION® A-33** is regenerated in hydroxide form ensuring that not more than 3% of exchange sites are in chloride form.

**TULSION® A-33** is primarily used for purification of reactor coolant water and moderator in nuclear power station plants to keep corrosion products to the minimum and thus protecting the heat transfer surfaces from scaling and corrosion.

**TULSION® A-33** has excellent capacity for removal of boric acid. **TULSION® A-33** is manufactured under the most stringent quality controls to ensure minimal metallic impurities resulting in the highest purity of the ionic form supplied.

### TYPICAL CHARACTERISTICS - Tulsion® A-33

|                               |   |   |
|-------------------------------|---|---|
| Type                          | : | Strong base anion exchange resin  |
| Matrix structure              | : | Polystyrene copolymer   |
| Functional group              | : | Quaternary Ammonium Type I  |
| Physical form                 | : | Moist spherical Beads   |
| Ionic form                    | : | Hydroxide   |
| Screen Size USS (wet)         | : | 16 to 50  |
| Particle size (min 95%)       | : | (1.2 mm to 0.3 mm)  |
| Uniformity coefficient        | : | 1.75 max.   |
| Effective size                | : | 0.45 to 0.55  |
| Total Exchange Capacity (min) | : | 1.0 meq/ml (min. 90% of its exchange sites in hydroxide form and a max. of 2% in chloride form) |
| Moisture content              | : | 70 ± 3%   |
| Temperature stability         | : | 175° F (80° C) max  |
| Reversible swelling           | : | Cl to OH 20%  |
| Fines content                 | : | Less than 0.5% through 50 USS mesh  |
| Bead Strength                 | : | Not less than 250 g/bead average by Chatillion Test   |
| Backwash settled density      | : | 42 to 44 lbs/ft <sup>3</sup> (670 to 710 g/l)   |
| pH range                      | : | 0 to 14   |
| Solubility                    | : | Insoluble in all common solvents  |

### 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.

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