

CATION EXCHANGE RESIN TOKEM-140

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Strong acid cation exchange resin (gel type) with uniform particle range composition. It possesses uniformity range of less than 1.1.

High monodispersity and the absence of small fraction contributes to significantly decreased pressure drop across the bed height. These features enable high flow rates enhancing regeneration effectiveness and reducing reagent and rinsing water requirements.

Uniform particle composition, compact bed packing, and no dead zones increase diffusion rate and contact area thus leading to better ion exchange kinetics.

The cation exchange resin is stable to chemical and mechanical stress, it is characterized with a high osmotic stability. It results in doubling service life of the monodispersed resin compared to that of polydispersed cation exchange resins.

GENERAL DESCRIPTION	
Matrix	Styrene-DVB
Functional group	Sulfonic acid
Polymer structure	gel
Ionic form	H ⁺ Hydrogen Na ⁺ Sodium

Application area:

Monodispersed cation exchange resin TOKEM-140 can be applied in all conventional water treatment systems, including:

- softening and demineralizing water treatment systems with co-current regeneration;
- softening and demineralizing water treatment systems with packed bed counter-current regeneration.

Physical and Chemical Characteristics:

CHARACTERISTICS	STANDARD VALUE	
Appearance	Spherical beads, yellow to dark brown in colour	
Ionic form	H ⁺	Na ⁺

Table con' d (Physical and Chemical Characteristics)

Mean particle size, mm	0.65 ± 0.05	
Uniformity coefficient, max	1.1	
Volume ratio of beads passing through N04 mesh, % max	1.0	
Volume ratio of beads on N08 mesh, % max	2.0	
Moisture retention, %	48–55	
Osmotic stability, %, min	98	
Total capacity, mmol/cm ³ (mg-eq/cm ³), min	1.9	2.0
Total uncracked beads as shipped, %, min	95	
Mean mechanical toughness, g/bead, min	300	
Beads with toughness below 200 g/bead, %, max	10	
Shipping weight, g/cm ³	0.75–0.80	0.80–0.85
Particle density, g/cm ³	1.20–1.25	1.26–1.30

Physical and Chemical Characteristics:

SUGGESTED OPERATING CONDITIONS AND MODES:

Bed depth min, mm	800
Pressure drop coefficient, kPa · h/m ²	1.0
Temperature limit, °C	120
pH limit	0–14
Swelling at H ⁺ → Na ⁺ , %	5–8
Regenerant, %	
H ⁺ form	(1–1.5–3.0) H ₂ SO ₄ (4–5) HCl
Na ⁺ form	(6–10) NaCl
Total rinse requirement, BV	2–4
Backwashing bed expansion, %	50–80