



# CATION EXCHANGE RESIN TOKEM-140-16

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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. Increased content of crosslinking agent provides for high capacity, osmotic stability and toughness of the resin. These features enable using it in ethanol-amine and morpholine regimes.

High monodispersity and the absence of small fraction contributes to significantly decreased pressure drop across the bed height. This, in turn, enables 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. These features improve ion exchange kinetics.

GENERAL DESCRIPTION	
Matrix	styrene-DVB
Functional group	Sulfonic acid
Polymer structure	gel
Ionic form	H <sup>+</sup> Hydrogen Na <sup>+</sup> Sodium

## Application area:

Monodispersed cation exchange resin TOKEM-140-16 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
- condensate polishing.

## Physical and Chemical Characteristics:

CHARACTERISTICS	STANDARD VALUE
Appearance	Spherical transparent beads, yellow to dark brown in colour
Ionic form	H <sup>+</sup> Na <sup>+</sup>



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, %	40-45	36-41
Osmotic stability, %, min	98	
Total capacity, mmol/cm <sup>3</sup> (mg-eq/cm <sup>3</sup> ), min	2.3	2.4
Total uncracked beads as shipped, %, min	95	
Shipping weight, g/cm <sup>3</sup>	0.75-0.80	0.80-0.85
Particle density, g/cm <sup>3</sup>	1.20-1.25	1.26-1.30

**Processing Characteristics:**

## SUGGESTED OPERATING CONDITIONS AND MODES:

Bed depth min, mm	800	
Pressure drop coefficient, kPa·h/m <sup>2</sup>	1.0	
Temperature limit, ° C	120	
pH limit	0-14	
Swelling at H <sup>+</sup> → Na <sup>+</sup> , %	3-6	
Regenerant, %	(1-1.5-3.0) H <sub>2</sub> SO <sub>4</sub> (4-5) HCl (6-10) NaCl	
H <sup>+</sup> form		
Na <sup>+</sup> form		
Total rinse requirement, BV	2-4	
Backwashing bed expansion, %	50-80	