

CATION EXCHANGE RESIN TOKEM-140/99

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Strong acid cation exchange resin (gel type). It is characterized with uniform particle range composition and high purity.

Conversion to shipping ionic form is over 99%. High monodispersity and the absence of small fraction significantly decreases pressure drop across the bed height. This, in turn, enables high flow rates, enhances regeneration effectiveness and reduces 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.

The cation exchange resin is stable to chemical and mechanical stress. Its high osmotic stability results in doubling its service life 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-140/99 can be applied in such processes as:

In H⁺ form:

- deep water purification;
- separation of various elements;
- process media treatment;
- production of ultrapure materials for food, health and pharmaceutical industries;

In Na⁺ form:

- potable water purification.

Physical and Chemical Characteristics:

CHARACTERISTICS	STANDARD VALUE
Appearance	Spherical beads, yellow to dark brown in colour
PARTICLE SIZE DISTRIBUTION	
Mean particle size, mm	0.60 ± 0.05
Uniformity coefficient, max	1.1
Osmotic stability, %, min	96
Moisture retention, % H ⁺ form Na ⁺ form	48–58 43–53
Total capacity, mmol/cm ³ (mg–eq/cm ³), min	1.8
Product pH value, pH units H ⁺ form, min Na ⁺ form	4.5 7–9
Iron mass fraction, % max	0.03
Mass fraction of chloride ions, mg/cm ³ , max	0.0015
Water product oxidation in oxygen equivalent, mg/g max	0.5
Dynamic exchange capacity with full regeneration, mmol/m ³ (g–eq/m ³), min	1600
Total uncracked beads as shipped, %, min	95
Shipping weight, g/cm ³ H ⁺ form Na ⁺ form	0.75–0.80 0.80–0.85
Particle density, g/cm ³	1.20–1.25

Processing Characteristics:

SUGGESTED OPERATING CONDITIONS AND MODES:	
Bed depth, mm min	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 Na ⁺ form	(1–1.5–3.0) H ₂ SO ₄ (4–5) HCl (6–10) NaCl
Total rinse requirement, BV	2–4
Backwashing bed expansion, %	50–80