ANION EXCHANGE RESIN TOKEM–840

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Strong base anion 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. This, in turn, enables high flow rates enhancing regeneration effectiveness and reducing reagent and rinsing water requirements. Increased regeneration rate allows decreasing negative impact of organic substances on the ionite. It is specifically important for an anion exchange resin, which by its nature possesses affinity to organic compounds.

Uniform particle composition, compact bed packing, and no dead zones increase diffusion rate and contact area. These features lead to better ion exchange kinetics and improve static and dynamic exchange capacity of the anion exchange resin.

This monodispersed resin is characterized with a high osmotic stability resulting in its longer service life than polydispersed products.

GENERAL DESCRIPTION	
Matrix	Styrene–DVB
Functional group	quaternary ammonium basic groups (type 1)
Polymer structure	gel
Ionic form	Cl^- chloride OH^- hydroxyl

Application area:

Monodispersed anion exchange resin TOKEM–840 can be applied in all conventional water treatment systems, including:

- ionization water treatment systems with co–current regeneration;
- onization water treatment systems with counter–current packed bed regeneration;
- condensate polishing.

Physical and Chemical Characteristics:

CHARACTERISTICS	STANDARD VALUE
Appearance	Spherical transparent beads, white to brown in colour
Particle size range, mm	0.60 ± 0.05
Uniformity coefficient, max	1.1
Volume ratio of beads passing through N04 mesh, % max	1.0

Table con'd (Physical and Chemical Characteristics)

Volume ratio of beads on N08 mesh, % max	2.0
Moisture retention in Cl^- form, %	35–50
Osmotic stability, %, min	98
Total uncracked beads as shipped, %, min	95
Total capacity in OH– form, mmol/cm^3 (mg–eq/cm^3), min	1.15
Equilibrium static exchange capacity in OH^- form, mmol/cm^3 (mg– eq/cm^3), min	1.0
Oxidation of water product in oxygen equivalent, mg/l, max	0.55 (0.5)*
Mean mechanical toughness, g/bead, min	300
Beads with toughness below 200 g/bead, %, max	10
Shipping weight in Cl– form, g/cm^3	0.66–0.72
Particle density in Cl– form, g/cm^3	1.06–1.10

* – the indicator in brackets is for the product supplied to atomic power stations

Processing Characteristics:

SUGGESTED OPERATING CONDITIONS AND MODES:	
Bed depth min, mm	800
Pressure drop coefficient, kPa · h/m^2	1.0
Temperature limit, ℃ Cl^- form OH^- form	 80 60
pH limit	0–14
Swelling at $Cl^- \rightarrow OH^-$, %	20
Regenerant, %	(3–4) NaOH
Total rinse requirement, BV	2–4
Backwashing bed expansion, %	80–100