PRODUCT INFORMATION
LEWATIT® MonoPlus SM 1015 KR 7Li

Lewatit® SM 1015 KR-^{7}Li is a ready-to-use mixed bed comprising strongly acidic gel-type cation in $^{7}Li^{+}$ form and strongly basic (type I) gel-type anion exchange resin in fully regenerated form.

Lewatit® SM 1015 KR-^{7}Li is a 1:1 stoichiometric mixture (other mix ratio available on request), premium grade and purified (extremely low content of desorbable chloride ions and no organically bound chlorine!) to meet nuclear industry specifications.

Lewatit® nuclear resins (Lewatit® KR) are noted for their outstanding mechanical and chemical stability as well as their high osmotic stability.

Because of their excellent hydrodynamic properties, Lewatit® KR resins allow particularly high flow rates. The extremely high monodispersity and very low fines content result in particularly low pressure losses compared with standard resins. Used in radioactive water circuits, they provide a number of special tasks and guarantee a water quality that fully complies with the requirements of the nuclear power industry.

Lewatit® SM 1015 KR-^{7}Li is particularly suitable for the:

» polishing in the primary sections as a mixed bed component
» decontamination of circuits in nuclear reactor plants
» treatment of primary coolant e.g. in pressure water reactors
» purification of steam generator blowdown irrespective of the condition with Levoxin (hydrazine), ethanolamine or morpholine
» removal of activated cleavage or corrosion products, including mechanical filtration of suspended impurities
» polishing in Candu reactor systems (HTS, ESC, RCW)

The special properties of this product can only be fully utilized if the technology and process used correspond to the current state-of-the-art. Further advice in this matter can be obtained from Lanxess, Business Unit Liquid Purification Technologies.

Common Description

Delivery form	Li^+/OH^-
Functional group	Quaternary ammonium Typ1 /sulfonic acid
Matrix	Styrenic
Structure	Gel
Appearance	Black/ Light brown translucent

Specified Data

Mean bead size (SAC component)	d50	mm	0.60 (+-0.05)
Mean bead size (SBA component)	d50	mm	0.64 (+-0.06)
Total capacity (SAC component H^+ form)		min. eq/L	2.4
Total capacity (SBA component OH^- form)		min. eq/L	1.2

Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	720
Density		approx. g/mL	1.15
Water retention (delivery form)		approx. weight %	54-59
Volume change (during exhaustion)		max. approx. %	-15
Stability pH range			0-14
Storage temperature range		°C	-20 - +40
Friability		average g/bead	600
Friability	>200 g/bead	min. vol %	95
Ionic conversion OH^-		min. eq. %	95 (SBA)
Ionic conversion CO_3^{2-}		max. eq. %	5 (SBA)
Ionic conversion Cl^-		max. eq. %	0.1 (SBA)
Ionic conversion SO_4^{2-}		max. eq. %	0.2 (SBA)
Ionic conversion $^7Li^+$		min. eq. %	99 (SAC)

Operation

Operating temperature		max. °C	60
Operating pH range	during exhaustion		0-14
Bed depth for single column		min. mm	800
Specific pressure loss kPa*h/m² (15°C)		kPa*h/m² (15°C)	1
Max. pressure loss during operation		kPa	200
Specific flow rate		max. BV/h	100

Trace Impurities

Na	max. mg/kg dry resin	50
Fe	max. mg/kg dry resin	30
Cu	max. mg/kg dry resin	5
Al	max. mg/kg dry resin	5
Co	max. mg/kg dry resin	5
Pb	max. mg/kg dry resin	10
Hg	max. mg/kg dry resin	5
Heavy metals	max. mg/kg dry resin	10 (as Pb)
SiO_2	max. mg/kg dry resin	50
Cl^-	max. mg/kg dry resin	200

Additional Information & Regulations

Safety precautions
Strong oxidants, e.g. nitric acid, can cause violent reactions if they come into contact with ion exchange resins.

Toxicity
The safety data sheet must be observed. It contains additional data on product description, transport, storage, handling, safety and ecology.

Disposal
In the European Community Ion exchange resins have to be disposed, according to the European waste nomenclature which can be accessed on the internet-site of the European Union.

Storage
It is recommended to store ion exchange resins at temperatures above the freezing point of water under roof in dry conditions without exposure to direct sunlight. If resin should become frozen, it should not be mechanically handled and left to thaw out gradually at ambient temperature. It must be completely thawed before handling or use. No attempt should be made to accelerate the thawing process.

Packaging
The experience has shown that the packaging stability for reliable resin containment is limited to 24 months under the storage conditions described above. It is therefore recommended to use the product within this time frame; otherwise the packaging condition should be checked regularly.