

**Lewatit® NM 91** is a premium grade, gel type, high capacity, high purity mixed ion exchange resin prepared with a unique volumetric ratio of 55% gel, strong acid resin, and 45% gel, Type 1 strong base anion resin. It is a mixture of standard cross-linkage gel type cation exchange resin in the hydrogen (H) form, and a gel type, strong base anion exchanger resin in the hydroxide (OH) form. The mixed resin is prepared from component resins which have been manufactured with a high degree of purity and conversion to the H / OH form.

**Lewatit® NM 91** is characterized by high cation exchange capacity. It is supplied pre-mixed as spherical beads in a heterodisperse particle distribution in the fully swollen bead form.

**Lewatit® NM 91** is specially designed for water demineralization applications with high Alkalinity to FMA ratios, where complete removal of silica and CO<sub>2</sub> is not required.

The resin mixture is designed for non-regenerable application. It also can be used for demineralization of service water, waste water and water recovery in small units and once-through cartridges (DI water) for:

- » EDM recycling
- » alkaline feed demineralization
- » laboratories and photo laboratories
- » household appliances (e.g. steam irons, air humidifier)
- » small industrial plants (e.g. refilling of starter batteries or coolant circuits)
- » water for watering

Die besonderen Eigenschaften dieses Produktes lassen sich nur dann optimal nutzen, wenn Verfahren und Filterkonstruktion dem Stand der Technik entsprechen und die Betriebsbedingungen auf die individuellen Bedürfnisse abgestimmt sind. Zur weiteren Beratung steht Ihnen in der BU Liquid Purification Technologies (LPT) ein Team von Spezialisten zur Verfügung.

## Common Description

Delivery form	H <sup>+</sup> / OH <sup>-</sup>
Functional group	Sulfonic acid / quaternary amine
Matrix	Divinylbenze / Styrene
Structure	Gel
Appearance	Dark brown / brown translucent

## Specified Data

		metric units	
Uniformity coefficient		max.	1.9
Fines	< 0.315 mm	max. vol. %	2
Coarse beads	> 1.25 mm	max. vol. %	5
Mixed bed test, operational capacity	up to 0.02 MOhm*cm (endpoint)	min. eq/L	0.30

## Typical Physical and Chemical Properties

		Metrische Einheiten	
Bulk density	(+/- 5 %)	g/L	740
Density		approx. g/ml	1.2
Water retention		wt. %	50 - 60
Volume change	during exhaustion	typ. vol. %	- 20
Pressure drop		max. kPa	200
Specific pressure drop	at 15°C	approx. kPa*h/m <sup>2</sup>	1,5
Stability	pH range		0 - 14
Storability	of the product	max. years	2
Storability	temperature range	°C	-20 - +40

This document contains important information and must be read in its entirety.

### Recommended Start-up Conditions\*

		metric units	
OPERATION			
Operating temperature		max. °C	60
Operating pH-range			0 - 14
Bed depth		min. mm	800
Linear velocity	Operation	max. m/h	60

\* The recommended operating conditions refer to the use of the product under normal operating conditions. It is based on tests in pilot plants and data obtained from industrial applications. However, additional data are needed to calculate the resin volumes required for ion exchange units. These data are to be found in our Technical Information Sheets.

## 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.

This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

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