

**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

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 Ion Exchange Resins.

## General Description

Ionic form as shipped	H <sup>+</sup> / OH <sup>-</sup>
Functional group	Sulfonic acid / quaternary amine
Matrix	DVB / Styrene
Structure	Gel
Appearance	Dark brown / brown translucent

## Physical and Chemical Properties

		metric units	
Uniformity Coefficient*		max.	1.9
Fines*	< 0.315 mm	max. vol. %	2
Coarse beads*	> 1.25 mm	max. vol. %	5
Bulk density	(+/- 5 %)	g/l	740
Operating capacity*	breakthrough point 1 megaohm*cm	min. eq/l	0.30
Volume change	H <sup>+</sup> /OH <sup>-</sup> --> Ca, Mg/Cl, SO <sub>4</sub>	max. vol. %	-20
Stability	at pH-range		0 - 14
Storability	of the product	max. years	2
Storability	temperature range	°C	-20 - +40

\* Specification values subjected to continuous monitoring.

### Recommended Operating Conditions\*

	<b>metric units</b>	
Operating temperature	max. °C	60
Operating pH-range		0 - 14
Bed depth	min. mm	800
Pressure drop	max. kPa	200
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

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### **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.

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

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**LENNTECH**

WATER TREATMENT SOLUTIONS

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