

**Lewatit® GF 101** is a strongly acidic, macroporous, polymer-based resin in spherical bead form, with sulfonic acid groups. It is ideally suited as a heterogeneous catalyst for organic reactions.

A large pore structure, high degree of crosslinking and good mechanical stability enable this catalyst to be used in polar and non-polar media.

**Lewatit® GF 101** is particularly suitable for the reduction of free fatty acids in triglycerides prior to transesterification to biodiesel. The free fatty acids are removed through esterification with methanol or ethanol to the corresponding esters.

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> |
| Functional group      | sulfonic acid  |
| Structure             | macroporous    |
| Appearance            | opaque         |

## Physical and Chemical Properties

|                         |                   | <b>metric units</b> |                    |
|-------------------------|-------------------|---------------------|--------------------|
| Total capacity*         |                   | min. eq/kg          | 4.7 (dry)          |
| Uniformity Coefficient* |                   | max.                | 1.6                |
| Bead size*              | > 90 %            | mm                  | 0.4 - 1.25         |
| Effective size*         |                   | mm                  | 0.50 - 0.62        |
| Fines                   | < 0.315 mm        |                     | typical<br>< 0.5 % |
| Bulk density            | (+/- 5 %)         | g/l                 | 760                |
| Density                 |                   | approx. g/ml        | 1.15               |
| Water retention         | (+/- 5%)          | wt. %               | 60                 |
| Stability               | temperature range | °C                  | -20 - 130          |
| Storability             | of the product    | max. years          | 2                  |

\* Specification values subjected to continuous monitoring.

## 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.

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