GLOXIL BRIGHT VM

Field of Application: Elastomers

1. Material description

GLOXIL bright VM is an activated Gloxil bright in which the surface has been modified with a special vinyl-functional group. The by-products released during production are already largely removed during the process. The coupling reaction anchors the functional group to the surface of the filler; undesirable side effects, such as those that occur during in-situ mixing (i.e., when the additive is added directly), are therefore virtually completely avoided.
A special process technology used in the production of GLOXIL bright VM produces both strong hydrophobicity and minimal moisture absorption even at high ambient humidity. During vulcanization, the vinyl groups of GLOXIL bright VM react with the polymer in the presence of radicals.

Characteristics

Appearance		Free-flowing powder
Color CIELAB scale:	L* a* b*	98.3 - 0.3 2.3
Residue > 40 µm		30 mg/kg
Volatile matter at 105 °C		0.1%
Density		2.7 g/cm³
Particle size distribution	D_{50} D_{97}	2.1 µm 13 µm
Oil absorption		60 g/100 g
Equilibrium moisture content at 25 °C: 50% relative humidity 80% relative humidity 90% relative humidity		 0.05% 0.06% 0.07%

Packaging Options

Paper bag	25 kg
EVA bag	on request
Big bag	550 - 900 kg

Shelf life

2 years when stored in a dry, suitable location.

2. Applications

In the elastomer application area, GLOXIL bright VM is used as a functional filler both on its own and in combination with other fillers or reinforcing agents. Optimal performance is achieved in radical-cured systems (peroxide, high-energy radiation).

Applications include any situation where high tensile strength and high modulus, combined with low tensile and compression set, are as important as excellent processing and extrusion properties.
Furthermore, GLOXIL bright VM enables very low dielectric losses in high-voltage cable insulation.

Strong hydrophobicity and minimal moisture absorption round out the range of properties.

It is also suitable for very light-colored and white compounds.

These properties represent an ideal combination, particularly for pressureless vulcanized extrusion products and foam rubber.

Applications

- pressure-less cured extruded products (profiles, hoses)
- cable sheaths and cable insulation, also for high voltage
- sponge rubber products
- molded products and seals
- condenser gaskets
- prevention of filler caused mold fouling during the injection process or deposits in the orifice die (plating) during extrusion

Elastomers:
radically cross-linked elastomers such as CM, CSM, EPM, EPDM, EVM, Q, HNBR, FKM

Dosage:
generally in the range of 50 to 400 phr, depending on the application, formulation, and requirements

3. Advantages

The excellent properties of the base material GLOXIL bright are retained:

- low sieve residues
- low moisture, low moisture absorption
- very high brightness
- very high color-neutrality
- good, fast incorporation
- excellent dispersion behavior, even in critical compounds
- good rheological properties
- excellent surfaces
- excellent extrusion properties
- no negative influence on curing rate
- low tensile and compression set
- high electrical resistance
- good aging properties
- high chemical resistance
- matting effect

GLOXIL bright VM offers the following additional advantages compared to the base GLOXIL bright:

- hydrophobic filler
- minimal moisture absorption even at high humidity
- increased tensile strength
- reduced tension and compression set
- improved abrasion resistance
- improved resistance to liquids
- improved abrasion resistance
- improved resistance to liquids
- high and consistent electrical resistance during water storage
- lower dielectric losses, even during water storage

4. Application examples

Plating

Prevention of filler caused mold fouling during the injection process or deposits in the orifice die (plating) during extrusion

White building profiles (window and facade sealing profiles)

- Excellent extrusion properties, even at high haul-off speeds
- High tensile strength
- Very low compression set
- Neutral white color with high brightness
- Potential to increase the filler /oil loading

Cable insulation

- Very low sieve residue
- Very low dielectric loss factor tan δ, even without additional in-situ vinyl silane, even after water storage
- Higher tensile strength
- Potential to eliminate the need for additional vinyl silane added in situ
- Potential to increase the filler and plasticiser loading

General sealing profiles, molded seals, and O-rings

Based on peroxide-crosslinked polymers with minimal compression set

Münchener Straße 75 • DE-86633 Neuburg (Donau)
Telefon +49 8431 53-0 • info@hoffmann-mineral.com