



GLOXIL BRIGHT VM

Field of Application: Paint & Varnish

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 manufacture 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 manufacture of GLOXIL bright VM produces both strong hydrophobicity and minimal moisture absorption even at high ambient humidity. During the cross-linking (curing) of the coating system, the vinyl groups of GLOXIL bright VM react with the functional groups of the binder, particularly in the presence of radicals.

Characteristics

Appearance		Free-flowing powder
Color CIELAB scale:	L*	98.3
	a*	- 0.3
	b*	2.3
Residue > 40 µm		30 mg/kg
Volatile matter at 105 °C		0.1%
Density		2.7 g/cm ³
Particle size distribution	D ₅₀	2.1 µm
	D ₉₇	13 µm
Oil absorption		60 g/100 g
Equilibrium moisture content at 25 °C:		
50% relative humidity		0.05%
80% relative humidity		0.06%
90% relative humidity		0.07%

Packaging Options

Paper bag		xx kg
EVA bag		upon request?
Big bag		xxx - xxx kg

Shelf life

2 years when stored in a dry, proper manner.



2. Applications

GLOXIL bright VM achieves its optimal effect in binder systems that polymerize or cross-link via a radical-initiated reaction.

These include, in particular:

- UV- or electron beam-curing coatings
- unsaturated polyester and vinyl ester resins
- acrylic resins
- other radical-curing systems

It is also suitable for moisture-curing binder systems such as:

- 1K polyurethane
- 1K MS / silane-terminated polymers (STP) as a base for adhesives

It is characterized by easy wetting, excellent dispersion properties—which potentially allow for paint production without grinding—as well as very high brightness and color neutrality.

GLOXIL bright VM enhances the opacity of pigments, allowing for the replacement of up to 20% of titanium dioxide or resulting in improved hiding power.

In clear coats, it achieves transparency; depending on the dosage, a white glazing effect may result.

In addition, it provides excellent mechanical properties with very good scratch and abrasion resistance as well as high moisture and chemical resistance.

In MS- and STP-based adhesives, GLOXIL bright VM enables high tensile strength and lap shear strength, even after water storage, e.g., in wood adhesives.

The extremely low moisture content potentially eliminates the need for filler pre-drying.

Applications

- UV-curing clear coats and pigmented coatings
- UV-curing powder coatings
- moisture-curing coatings
- radical-curing polyester and vinyl ester resins
- moisture-curing adhesives and sealants, potting compounds

Minimum film thickness:

> 10 µm, lower in special cases

Dosage:

up to 55% by weight or up to PVK 35, depending on the application



3. Advantages

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

- low sieve residue
- low moisture content, low moisture absorption
- very high brightness
- high color neutrality
- excellent dispersion behavior, even without grinding
- improved opacity (spacer effect) and pigment exchange potential
- relatively low abrasiveness
- fast drying
- weather resistance
- scratch resistance
- abrasion resistance
- transparency¹
- matting effect¹

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

- hydrophobic filler
- minimal moisture absorption even at high humidity
- minimization of the yield strength
- increased tensile and flexural strength as well as impact resistance
- improved abrasion resistance and scratch resistance
- increased resistance to chemicals, water, moisture, and weathering

¹highly dependent on formulation principle and dosage



4. Application Examples

White-pigmented UV-curing coatings

Improvement of opacity through the additive addition of GLOXIL bright VM to the existing titanium dioxide dosage.

Adhesives based on silane-terminated polymers (STP, 1K moisture-curing) and 1K PU

GLOXIL bright VM offers

- very low moisture content and virtually no increase in moisture under humid climatic conditions, thereby offering the potential to eliminate filler pre-drying and reduce the need for chemical driers
- easy and rapid incorporation, very good dispersion behavior
- neutral white color with high brightness
- very high tensile strength in the free film as well as high tensile shear strengths
- very good water resistance in suitable formulations

Polyurethane-based electrical encapsulants and polyurethane systems in general

- good dispersibility
- no negative effects on pot life
- very good electrical insulation properties, even under long-term saltwater exposure

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