GLOXIL LIGHT iM16k MAM

Field of application: Thermoplastics

1. Description

GLOXIL light iM16k MAM is a micro hollow glass sphere whose surface has been modified with a special methacrylic functional group. The process parameters are selected in such a way that, on the one hand, anchoring to the surface takes place and, on the other hand, released by-products are removed as far as possible during production. This helps minimize undesirable side effects, as they are potentially encountered with in-situ mixing (direct addition of additive to the compound).

During compounding, the methacylic groups of GLOXIL light iM16k MAM provide good wetting and very good dispersion in the matrix polymer. During curing of the unsaturated polymers the methacrylic groups of GLOXIL iM16k MAM react in the presence of redicals with the polymer.

Characteristics		
Color CIELAB scale:	L*	98
Volatile matter at 105 °C RT 20 °C/RH 50		0.1 %
True Densitiy		0.46 g/cm³
Bulk density		0.17 g/cm³
Particle size distribution	D_{50} D_{97}	20 µm 40 µm
BET		2 m²/g

Packaging	
Paper bags	á 12,5 kg
Big Bags	150 kg

Shelf life

1 year if stored properly under dry conditions.

2. Application

The main areas of application for GLOXIL light iM16k MAM are thermoplastics, thermosets and elastomers, mostly for weight reduction or volume cost reduction.

Within thermoplastics, compounds based on thermoplastic polyesters (PET and PBT) and polycarbonate (PC incl. blends), as well as thermosets (UP, vinyl ester and acrylic resins) with reduced density and thus low weight represent potential applications.

Dosage:
- up to 25 % (m/m) or 45 % (v/v), depending on the targeted density reduction

Compounding Notes:
see 3M link: 3M glass bubbles compounding and injection molding guidelines.pdf

Information on compliance with certain regulations/recommendations and other safety-related aspects: Product safety information

3. Benefits

Basic advantages of using the hollow glass sphere:
- density reduction
- weight reduction
- volume cost reduction

Advantages of GLOXIL light iM16k MAM over the hollow glass sphere without surface modification:

Thermoplastics (potential)
- increase of yield stress / tensile strength
- increase of yield strain / elongation at break
- increase of the flexural strength
- increase of the flexural strain
- increase of impact strength and notched impact strength

Our applications engineering advice and the information contained in this memorandum are based on experience and are made to the best of our knowledge and belief, they must be regarded however as non-binding advice without guarantee. Working and employment conditions over which we have no control exclude any damage claim arising from the use of our data and recommendations. Furthermore we cannot assume any responsibility for patent infringements, which might result from the use of our information.

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