

GLOXIL iM16k A

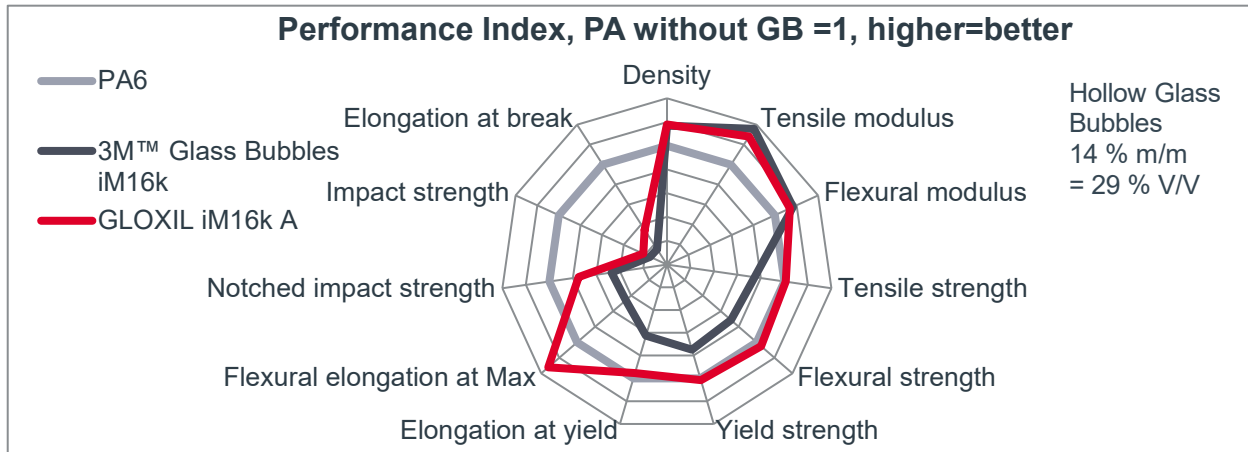
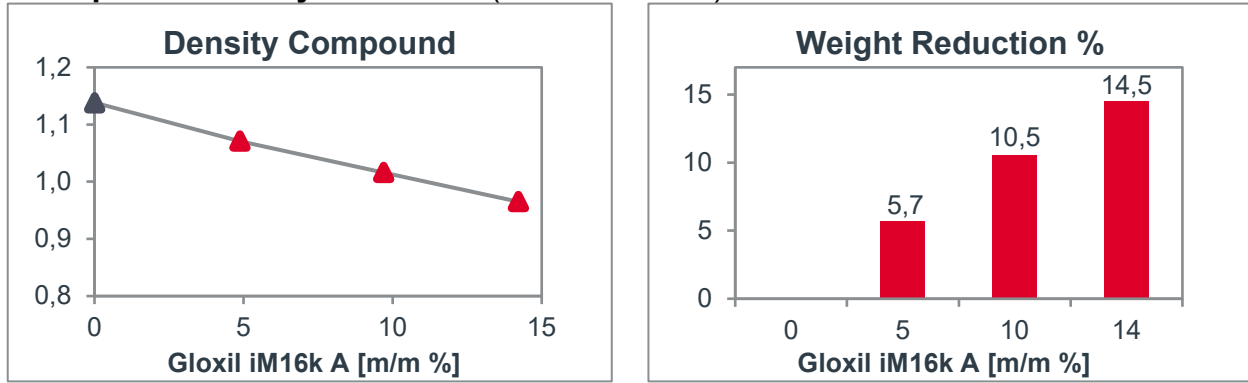
TECHNICAL DATA SHEET

<p>1. Description</p> <p>GLOXIL iM16k A is a micro hollow glass sphere whose surface has been modified with a special amino 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. Undesirable by-products, such as occur during in-situ mixing (i.e. during the direct addition of the additives), are therefore practically completely prevented.</p> <p>During compounding, the amino groups of GLOXIL iM16k A provide good wetting and very good dispersion in the matrix polymer. Furthermore, it achieves high bond strengths in polymers with suitable functional group by hydrogen bonding or covalent bonding.</p> <p>Characteristics:</p> <table style="width: 100%; border: none;"> <tr><td>Color CIELAB scale L*</td><td style="text-align: right;">98</td></tr> <tr><td>Air-jet screening >125 µm</td><td style="text-align: right;">0.2%</td></tr> <tr><td>Volatile matter at 105°C</td><td style="text-align: right;">0.3%</td></tr> <tr><td>pH-value</td><td style="text-align: right;">10</td></tr> <tr><td>True density</td><td style="text-align: right;">0.46 g/cm³</td></tr> <tr><td>Bulk density</td><td style="text-align: right;">0.19 g/cm³</td></tr> <tr><td>Particle size distribution</td><td></td></tr> <tr><td> D₅₀</td><td style="text-align: right;">22 µm</td></tr> <tr><td> D₉₇</td><td style="text-align: right;">45 µm</td></tr> <tr><td>BET-Surface</td><td style="text-align: right;">2 m²/g</td></tr> <tr><td>Floatation rate</td><td style="text-align: right;">96 %</td></tr> </table> <p>Delivery forms:</p> <table style="width: 100%; border: none;"> <tr><td>- Paper Bags</td><td style="text-align: right;">à 12,5 kg</td></tr> <tr><td>- Big Bags</td><td style="text-align: right;">150 kg</td></tr> </table> <p>Shelf life:</p> <p>12 months if stored properly in a dry place.</p>	Color CIELAB scale L*	98	Air-jet screening >125 µm	0.2%	Volatile matter at 105°C	0.3%	pH-value	10	True density	0.46 g/cm ³	Bulk density	0.19 g/cm ³	Particle size distribution		D ₅₀	22 µm	D ₉₇	45 µm	BET-Surface	2 m ² /g	Floatation rate	96 %	- Paper Bags	à 12,5 kg	- Big Bags	150 kg	<p>2. Applications</p> <p>The main areas of application for GLOXIL iM16k A are thermoplastics, thermosets and elastomers, mostly for weight reduction or volume cost reduction.</p> <p>Within thermoplastics, polyamide and polypropylene compounds with lower density and thus lower weight represent a main application. Due to the modification with an amino functional group, a better integration of the lightweight filler into the polymer matrix is possible, which leads to an improvement of the compound properties.</p> <p>GLOXIL iM16k A is suitable for the following thermoplastics:</p> <ul style="list-style-type: none"> • Polyamides (PA) • Aliphatic polyketone (PK) • PP (with addition of PP-g-MAH) • ABS, PPS, TPU, PE/EVA <p>In addition, further surface functionalizations for thermoplastics are available, which are suitable for PC, PC blends and PBT.</p> <p>In the area of thermosets and reactive resins, GLOXIL iM16k A is primarily suitable for epoxies and polyurethanes.</p> <p>In the area of elastomers, GLOXIL iM16k A is primarily suitable for rubbers in the higher price segment in which amino groups have a positive effect, such as FKM, HNBR, ACM, AEM.</p> <p>Dosage:</p> <p>Up to 25 % (m/m) or 45 % (v/v) depending on the density reduction aimed at, see also reverse side of this sheet.</p> <p>Compounding Instructions:</p> <p>See 3M™, link: 3M glass bubbles compounding and injection molding guidelines.pdf</p> <p>Translated with</p> <p>www.DeepL.com/Translator (free version)</p>	<p>3. Advantages</p> <p>Basic advantages of using the hollow glass spheres</p> <ul style="list-style-type: none"> • Density reduction / weight reduction / volume cost reduction <p>Advantages of GLOXIL iM16k A compared to the hollow glass sphere without surface modification:</p> <p>Polyamide</p> <ul style="list-style-type: none"> • Increase in tensile strength, up to the comparable level of PA 6 without hollow glass sphere • Increase of elongation at break • Increase in flexural strength, up to the comparable level of PA 6 without hollow glass sphere • Increase of flexural elongation at max, even increase compared to PA 6 without hollow glass sphere possible • Increase in impact strength and notched impact strength <p>Polypropylene*</p> <ul style="list-style-type: none"> • Increase in tensile strength, up to the comparable level of the PP copolymer without hollow glass sphere • Increase in elongation at yield • Increase in flexural strength, even increase compared to PP copolymer without hollow glass sphere possible • Increase of impact strength and notched impact strength <p>* tested with 5 % PP-g-MAH as compatibilizer</p>
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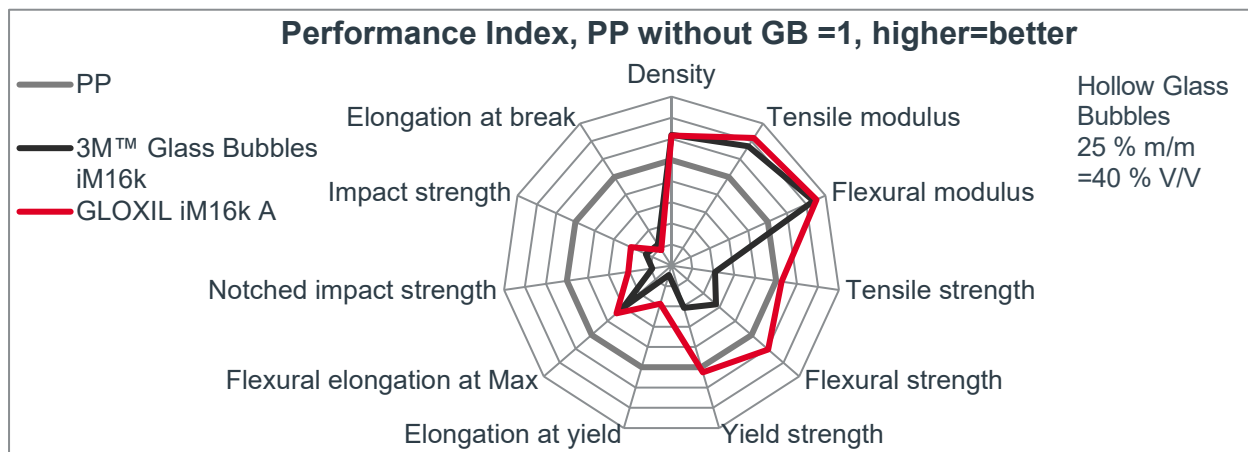
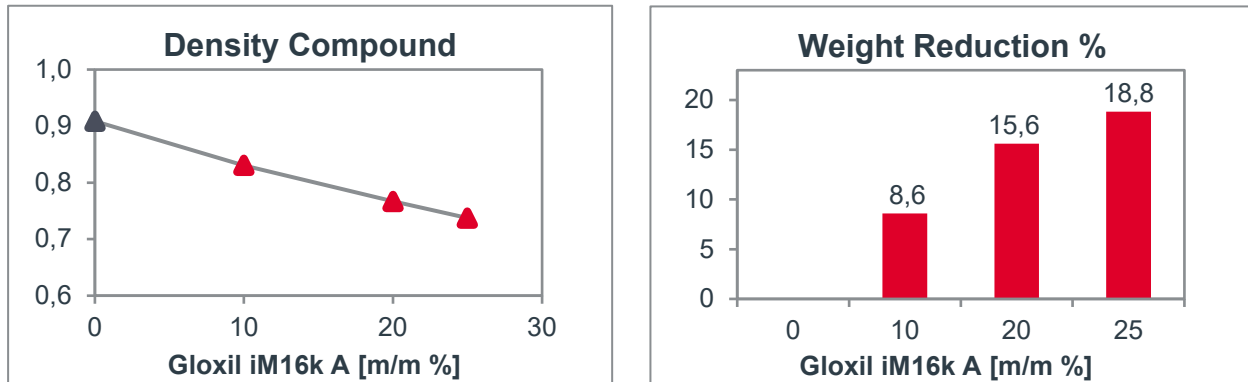
4. Effects of GLOXIL iM16k A, based on data from 3M™

Example in PA 6 dry as molded (Ultramid® B3K)



Example in Polypropylene Copolymer

(Bormod BF970MO, GLOXIL iM16k A compounds contain 5 % PP-g-MAH, Scona TPPP 2112 GA)



* Data determined by 3M Advanced Materials Division, Specialty Additives Laboratory