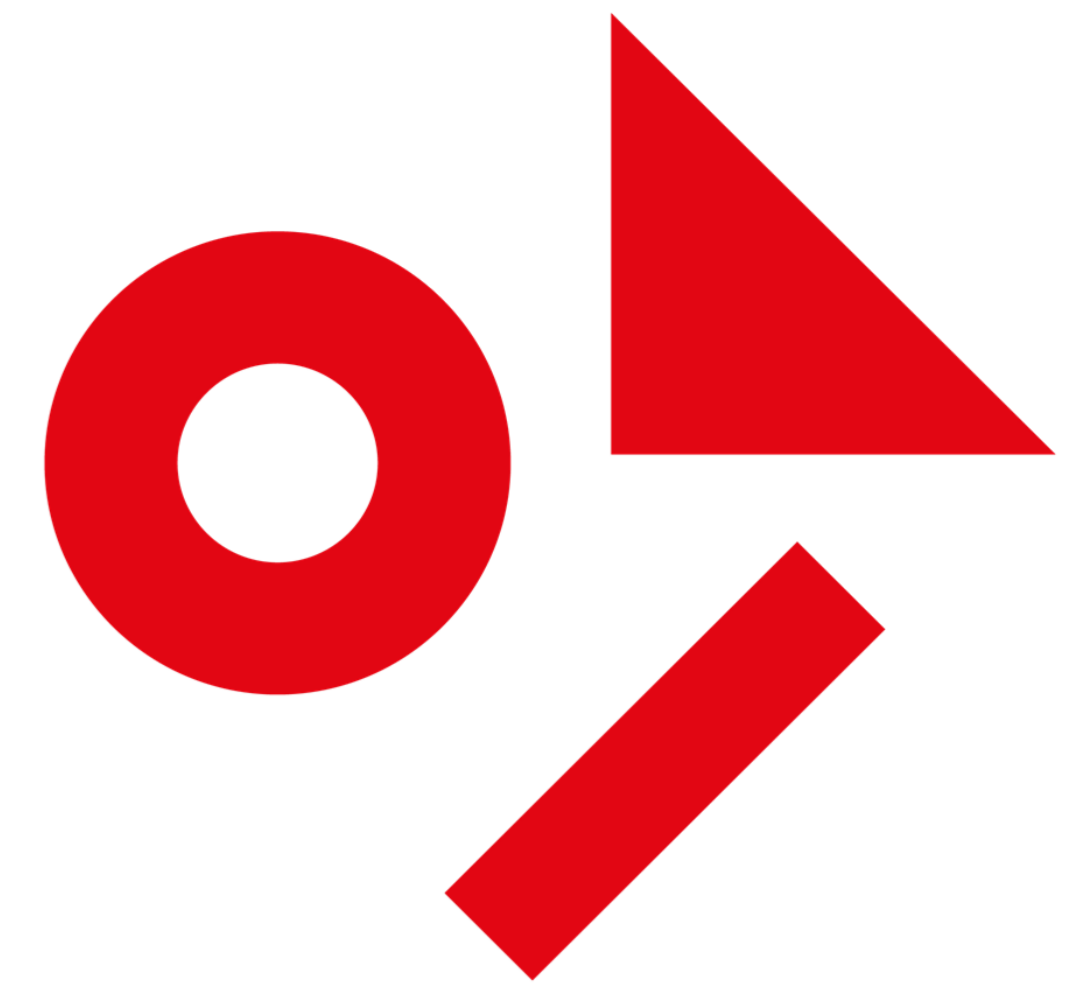


GLOXIL iM16k A in Polyamide PA6



Results

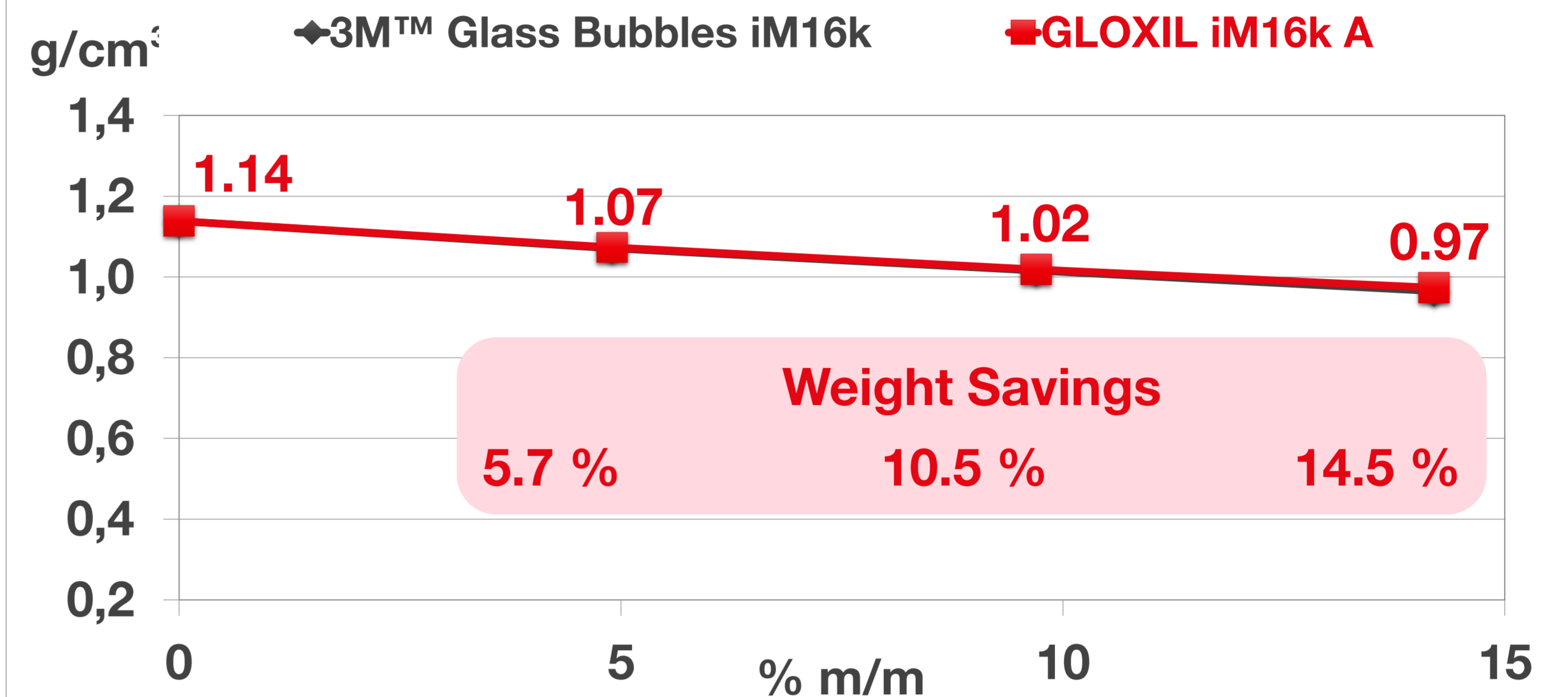
Objective:
Density / weight reduction and still good mechanical properties

PA Compound Ultramid® B3K
BASF
Melt volume rate MVR 160 cm³/10 min (275 °C, 5 kg)

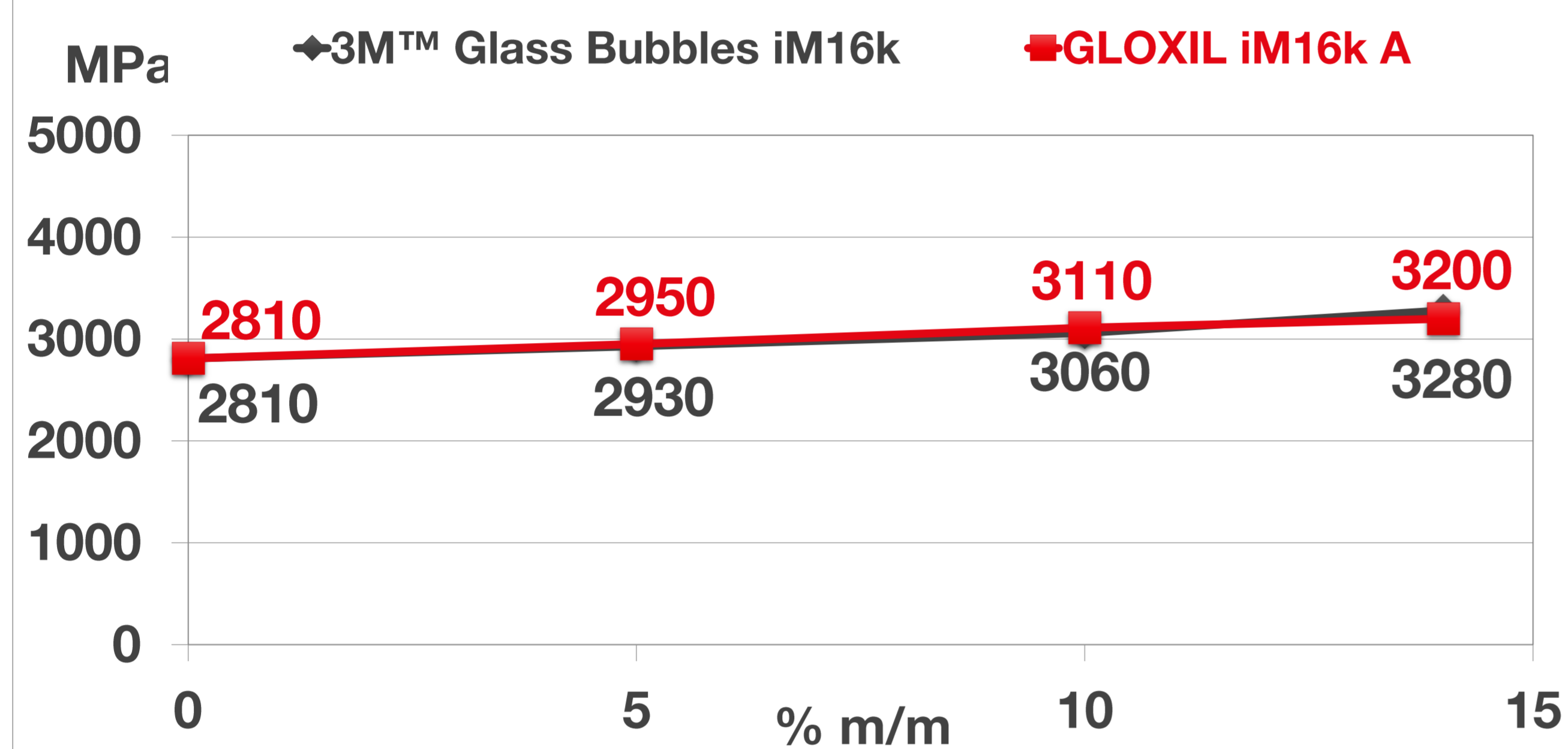
3M™ Glass Bubbles iM16k	0 to 14 % (m/m) 0 to 29 % (v/v)	---
GLOXIL iM16k A	---	0 to 14 % (m/m) 0 to 29 % (v/v)
Total	100	100

All results were determined in the freshly molded (dry) state
Data determined by 3M Advanced Materials Division, Special Additives Laboratory

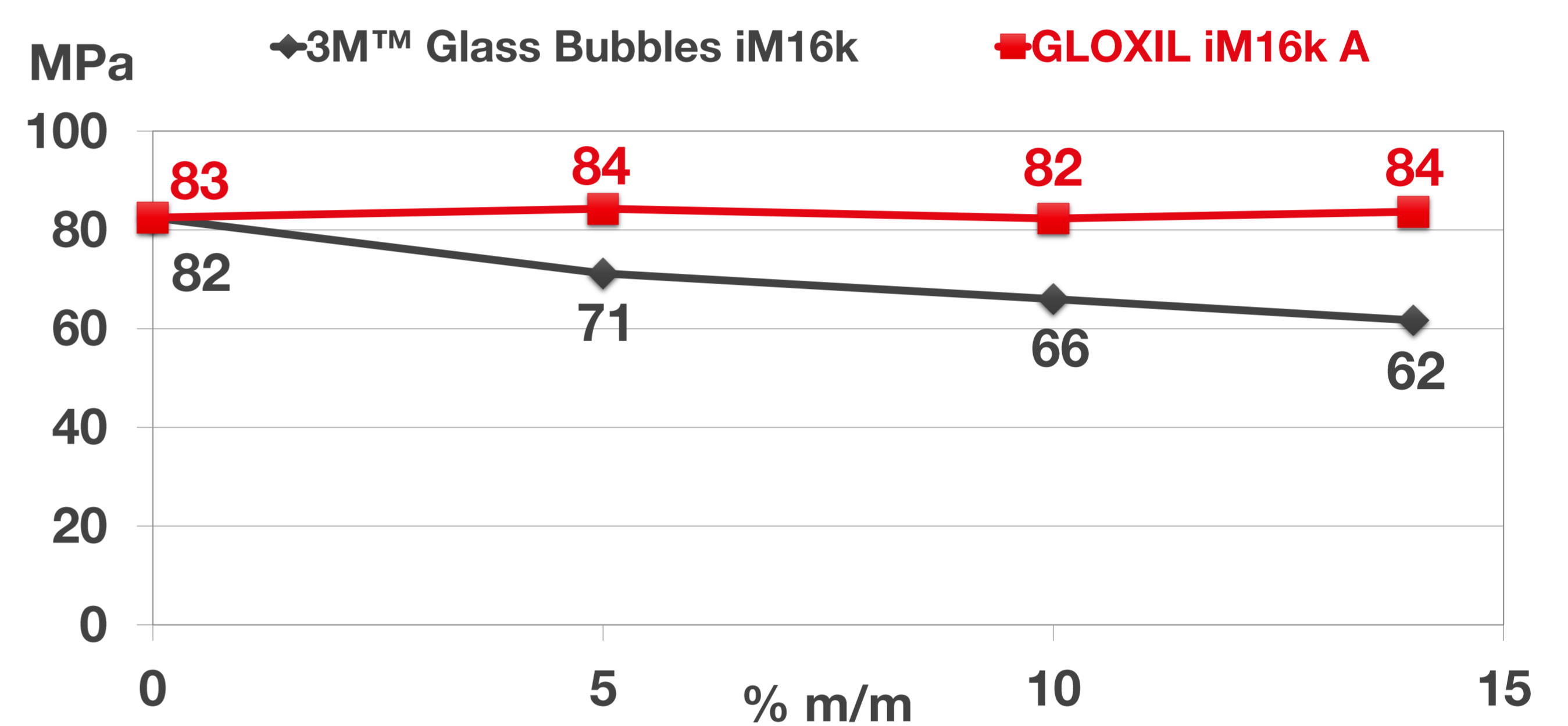
Density and Weight Reduction (measured)



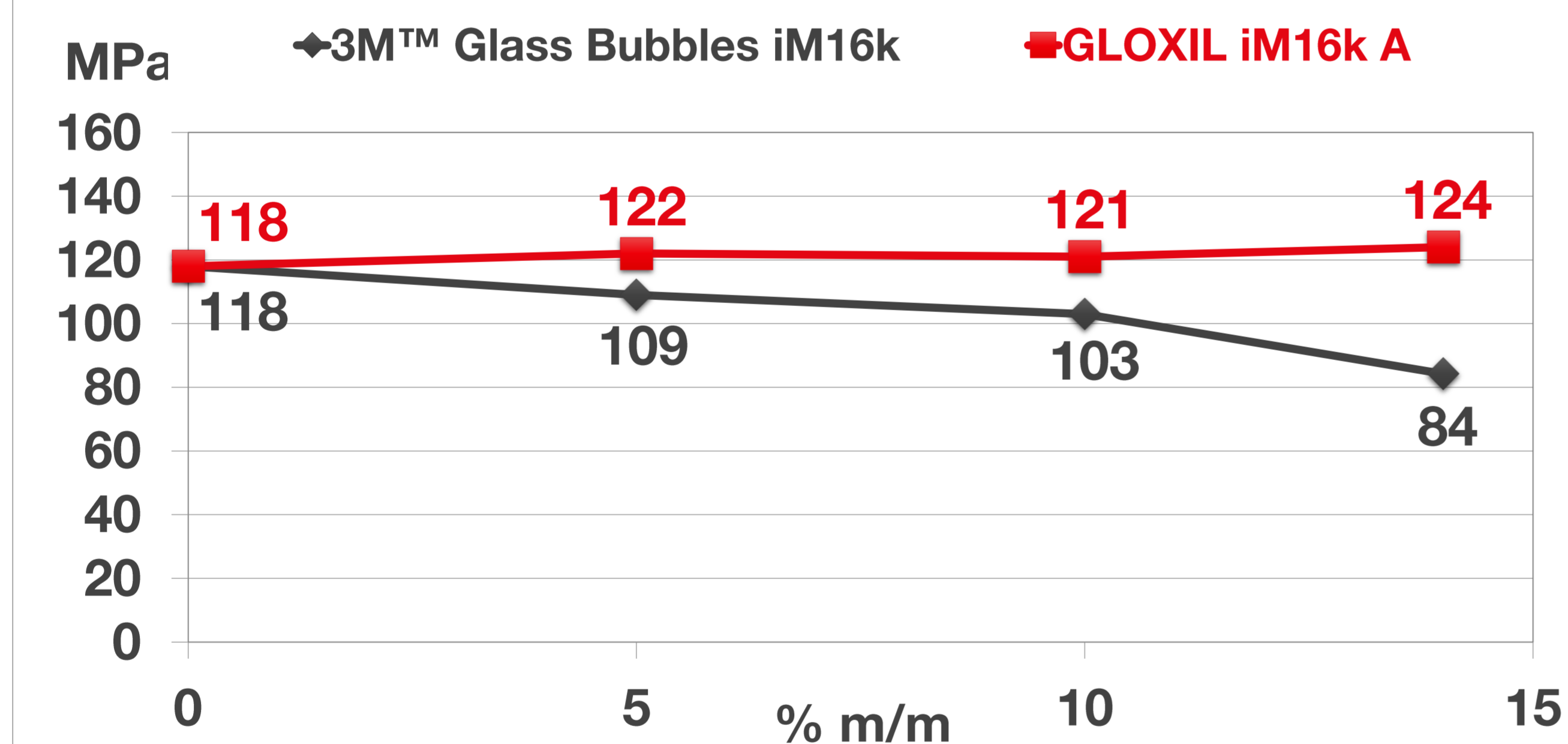
Flexural Modulus



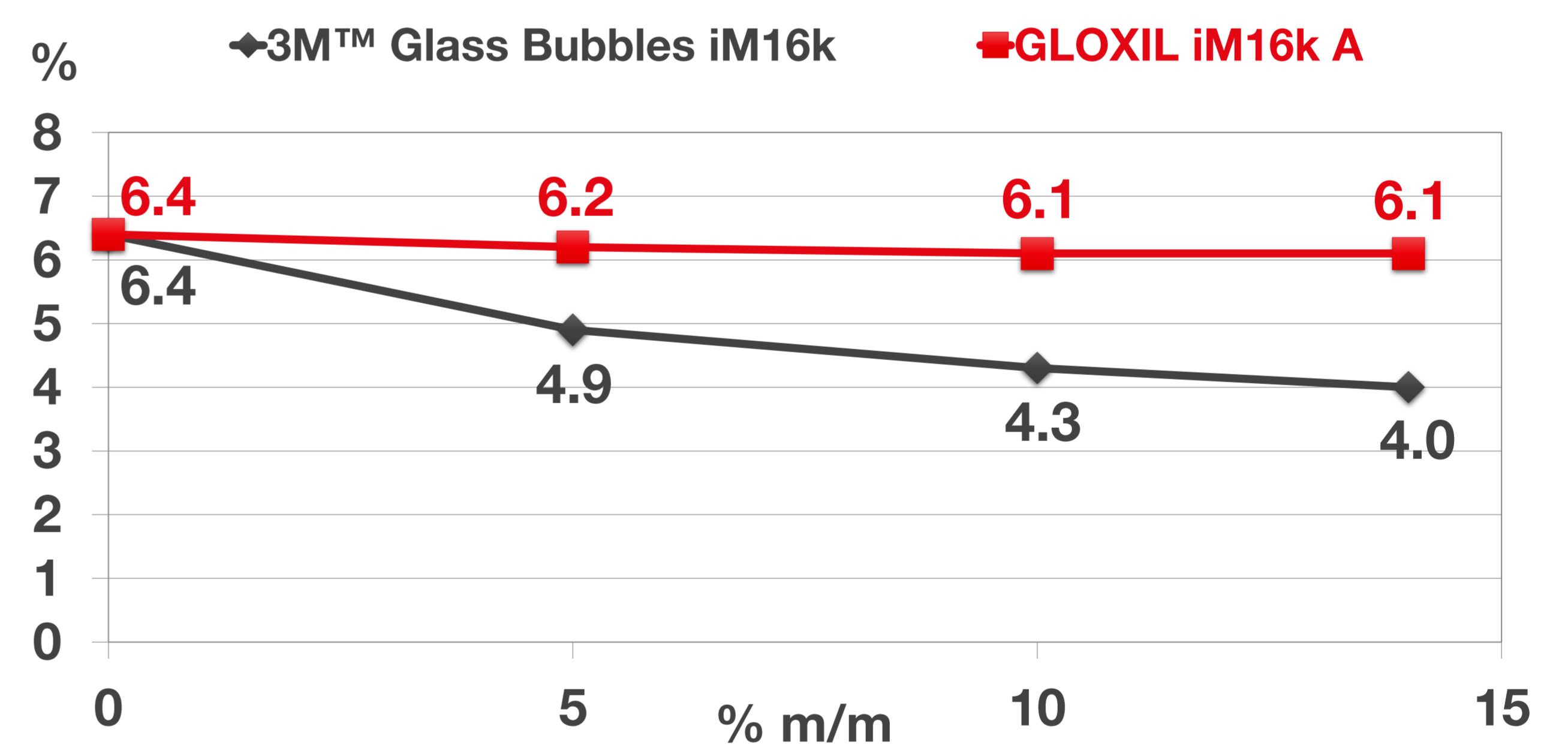
Yield Stress



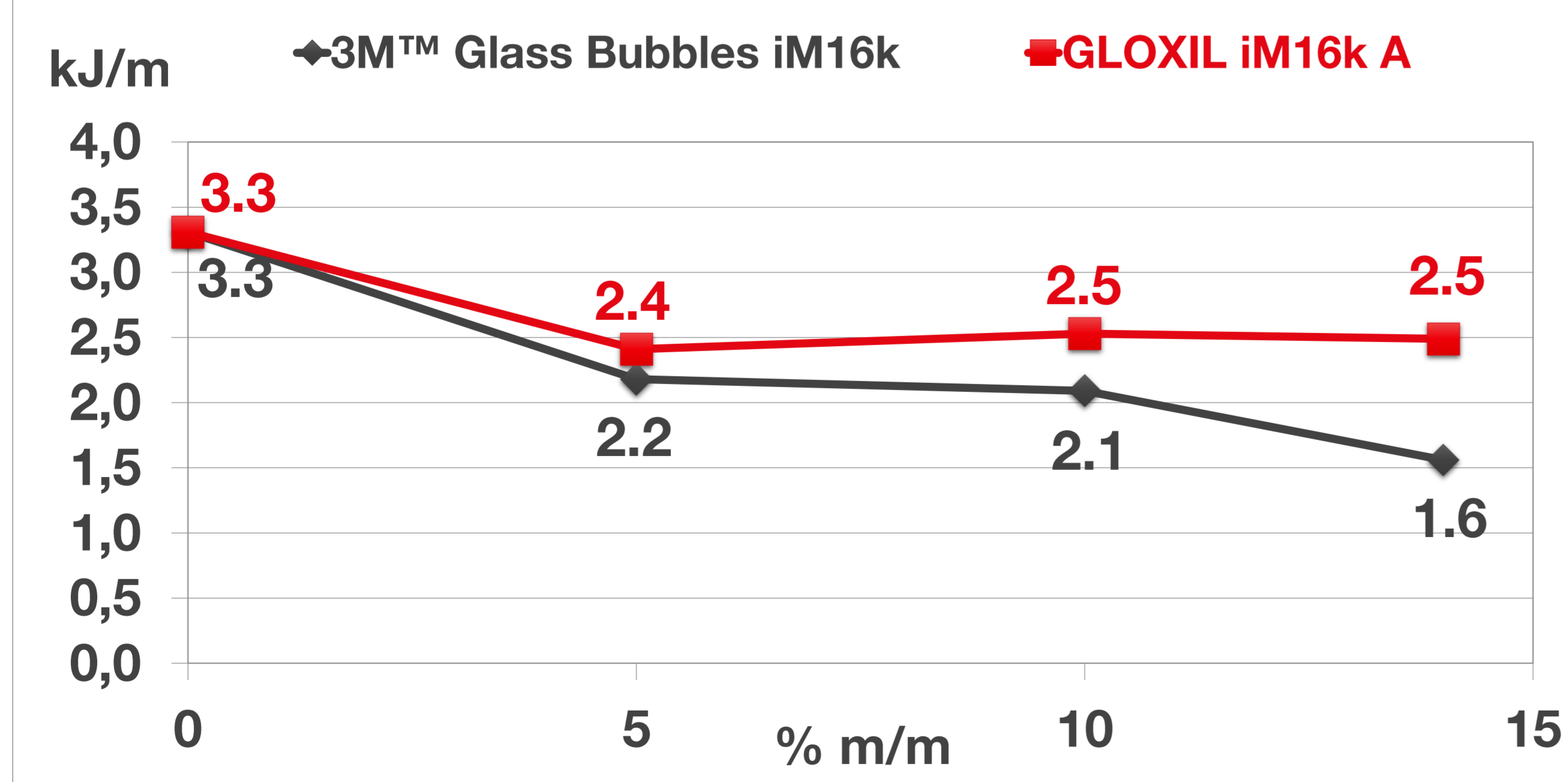
Flexural Strength



Yield Strain



Notched Impact Strength Charpy



Summary

GLOXIL iM16k A shows in comparison to the untreated hollow glass spheres:

- Same density and thus weight saving potential
- Comparable increase in stiffness (tensile modulus and flexural modulus)
- + Significantly higher yield stress, largely independent of the filler content at the level of the unfilled PA6
- + Significantly higher yield strain, largely independent of the filler content at the level of the unfilled PA6
- + Significantly higher flexural strength, with increasing filler content even higher than the unfilled PA6
- + Slightly higher impact strength
- + Slightly higher notched impact strength

→ Objective achieved: density / weight reduction and good mechanical properties

- + Expectation: improved scratch resistance