

NEUBURG SILICEOUS EARTH IN SLA/DLP 3D Printing (UV-curing)

OBJECTIVE

Improving Performance of Unfilled Resin



Neuburg Siliceous Earth:
Aktifit Q

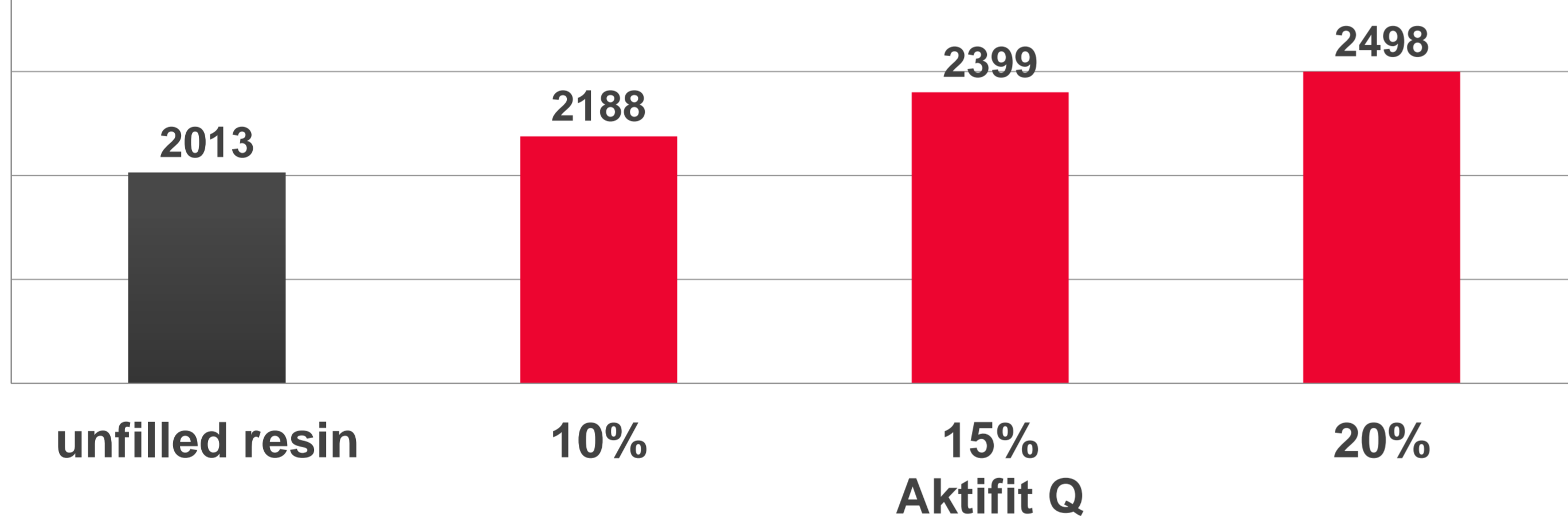
FORMULATION

		parts by weight
Bomar XR-741 MS	<i>Binder, polyester urethane methacrylate</i>	80
Miramers PU 2560	<i>Binder, flexibilizing, aliphatic urethane acrylate</i>	20
Speedcure TPO-L	<i>Photoinitiator, type 1</i>	0.6
Isobornyl methacrylate	<i>Reactive diluent</i>	0.6
Benzophenone-6	<i>UV absorber, antioxidant</i>	0.1
Aktifit Q	<i>Filler, Neuburg Siliceous Earth</i>	0 - 20
Total		≈ 100 - 120

RESULTS

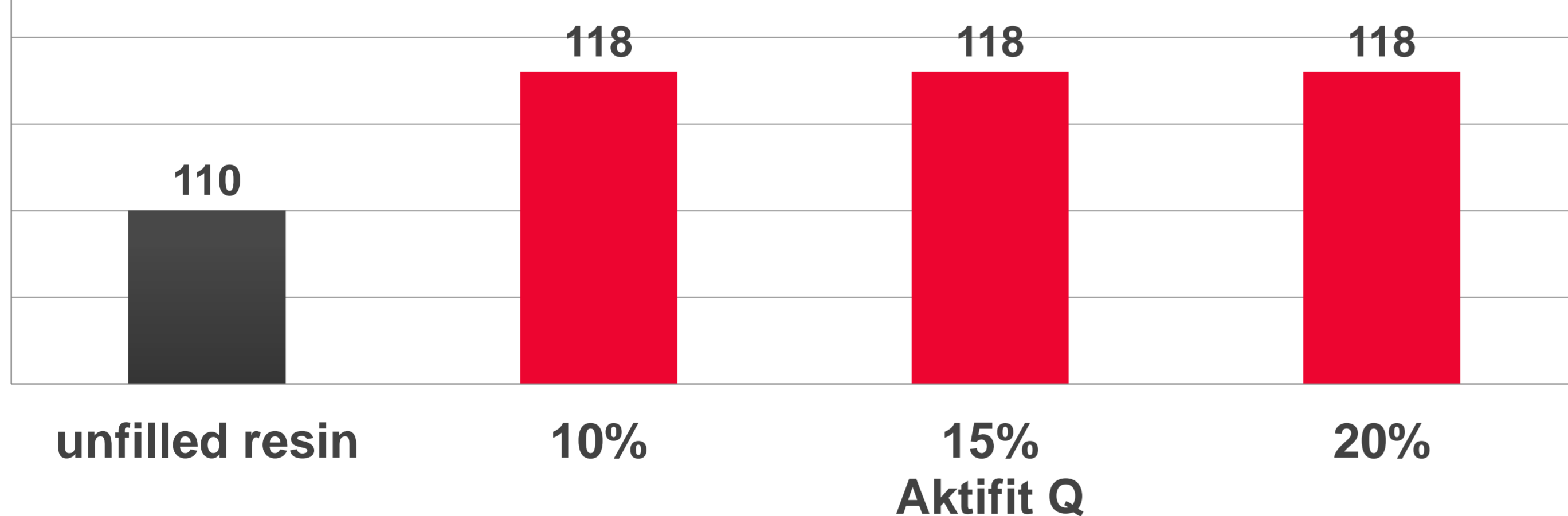
DMA: Storage Modulus @ 23 °C [MPa]

3-point bending test; amplitude 10 µm; heating rate 3 °C/min



DMA: Glass Transition Temperature [°C]

Maximum of tan δ; heating rate 3 °C/min



Overall Performance

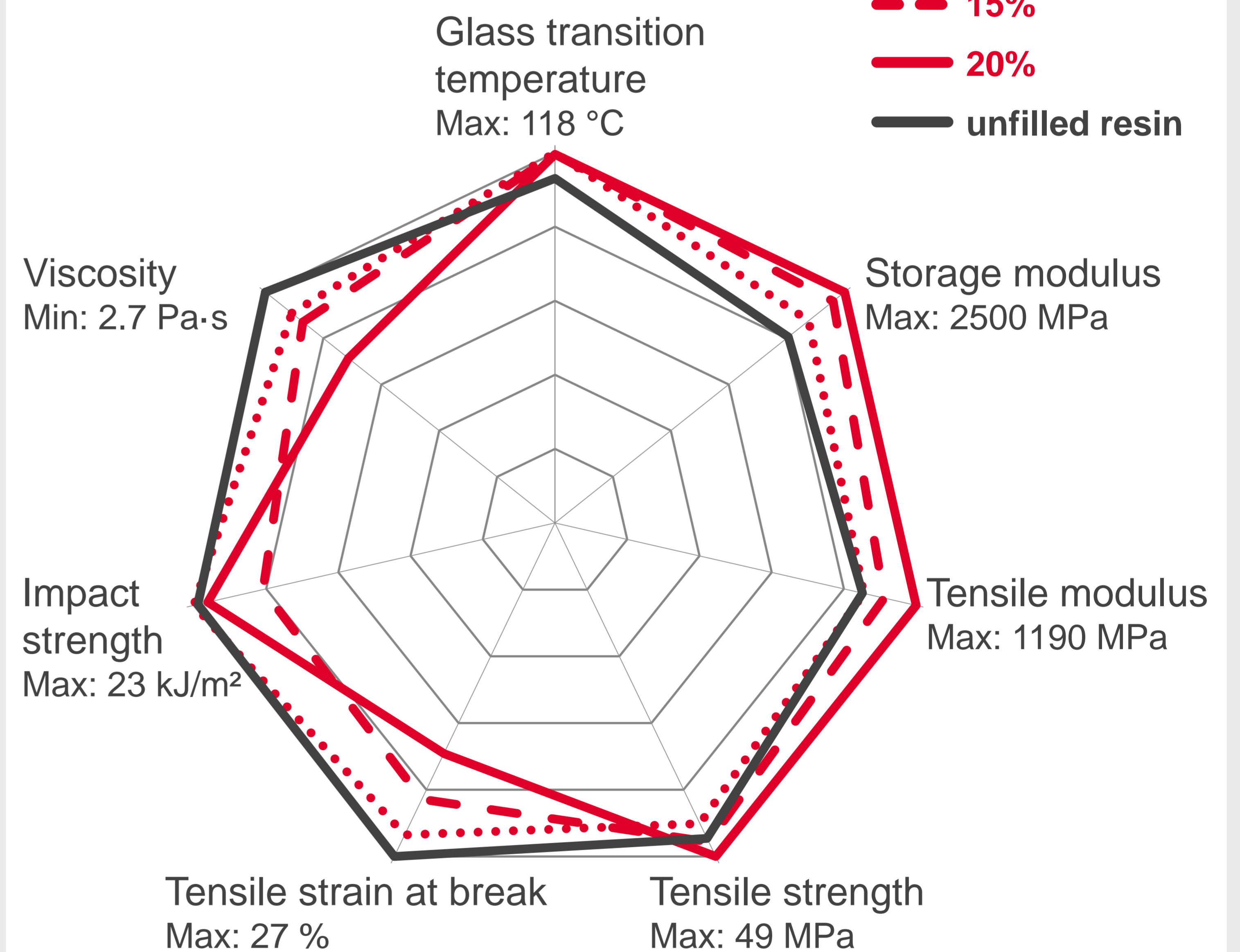
Aktifit Q

•••• 10%

- - - 15%

— 20%

— unfilled resin



SUMMARY

Compared to the unfilled printing resin, the use of **Aktifit Q** leads to the following properties:

- ✓ Recommended dosage: 10-20 %
- ✓ Undisturbed UV crosslinking
- ✓ Moderate increase in viscosity
- ✓ Largely retention of tensile strength, strain at break and impact strength
- ✓ Increase in stiffness and heat distortion temperature

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