

NEUBURG SILICEOUS EARTH IN UV-CURING WOOD COATINGS: SURFACER EPOXY ACRYLATE

OBJECTIVE

- Retain property profile plus improvement
- Cost reduction potential

Fillers:

Talc 1
or
Talc 2
or
Barium sulfate ppt



Neuburg Siliceous Earth:

Sillitin Z 89
or
Sillitin V 88
or
Aktisil MAM

FORMULATION

Adjusted filler loading to viscosity of 10 to 15 Pa*s at 100 s⁻¹:

Ebecryl 6040	25.24	22.92	13.50	25.24	21.97	21.97	21.97
OTA 480	30.24	27.46	16.18	30.24	26.32	26.32	26.32
Benzophenon	2.02	1.84	1.08	2.02	1.76	1.76	1.76
Omnirad BDK	2.02	1.84	1.08	2.02	1.76	1.76	1.76
Talc 1	40.48						
Talc 2		45.95					
Barium sulfate ppt			68.15				
Sillitin Z 89				40.48			
Sillitin V 88					48.19		24.09
Aktisil MAM						48.19	24.09
Total [%]	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PVC [%]	22.5	26.5	36.6	23.7	29.8	29.8	29.8

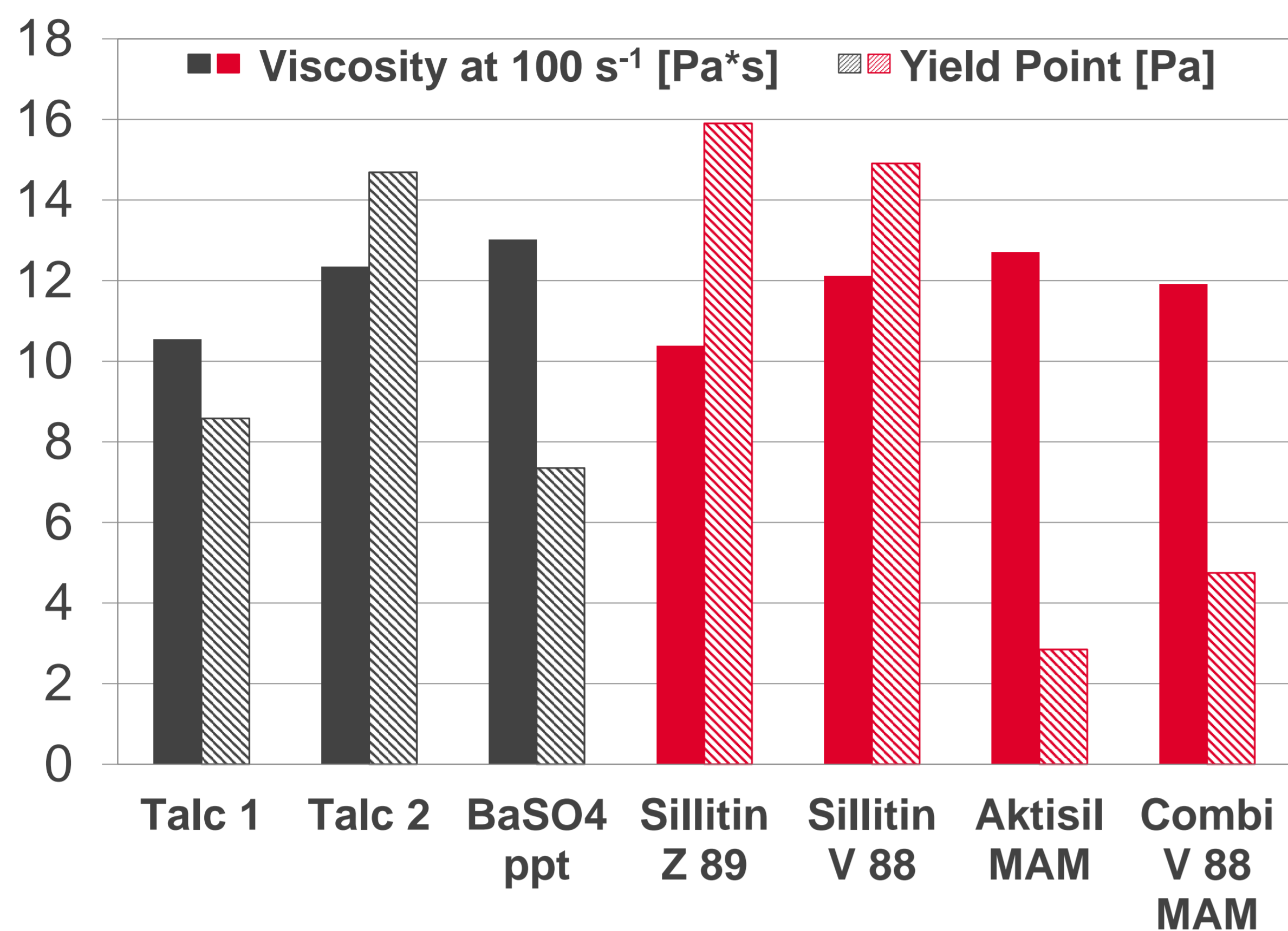
Curing: mercury UV lamp at 80 W/cm; speed 15m/min; two passes

HOFFMANN
MINERAL

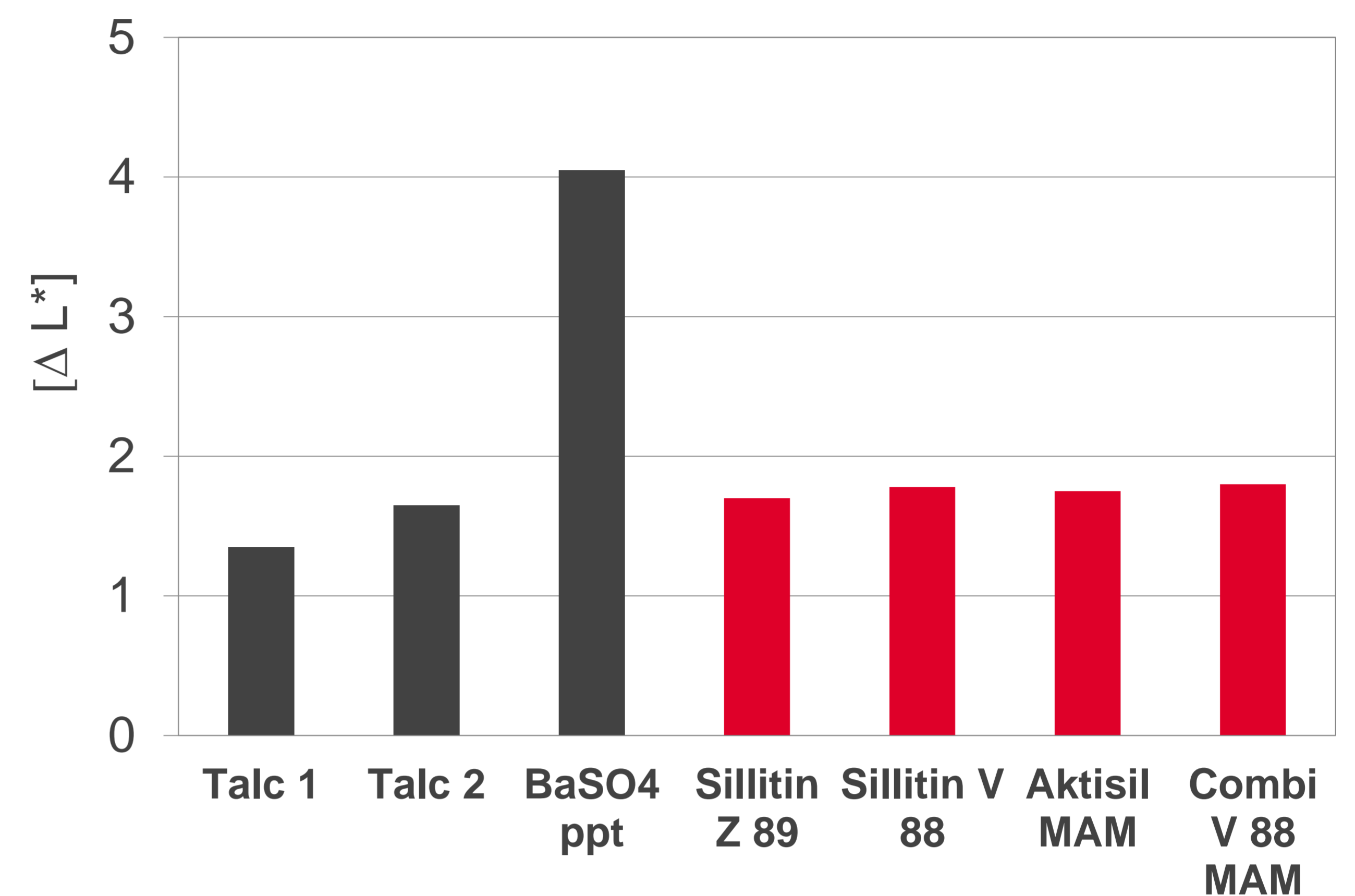
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RESULTS

Viscosity and Yield Point

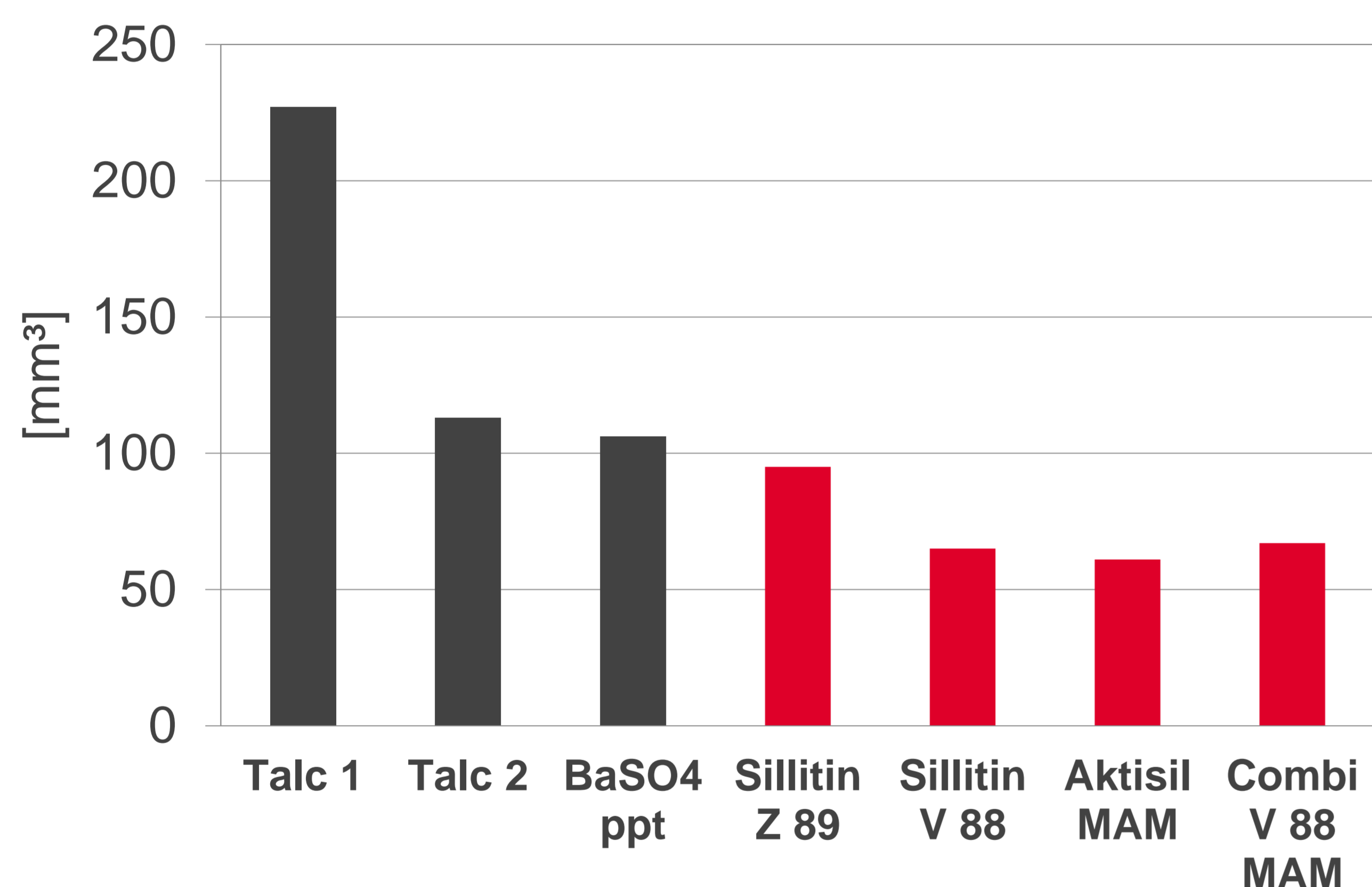


Transparency Loss over black substrate, DFT 40 µm

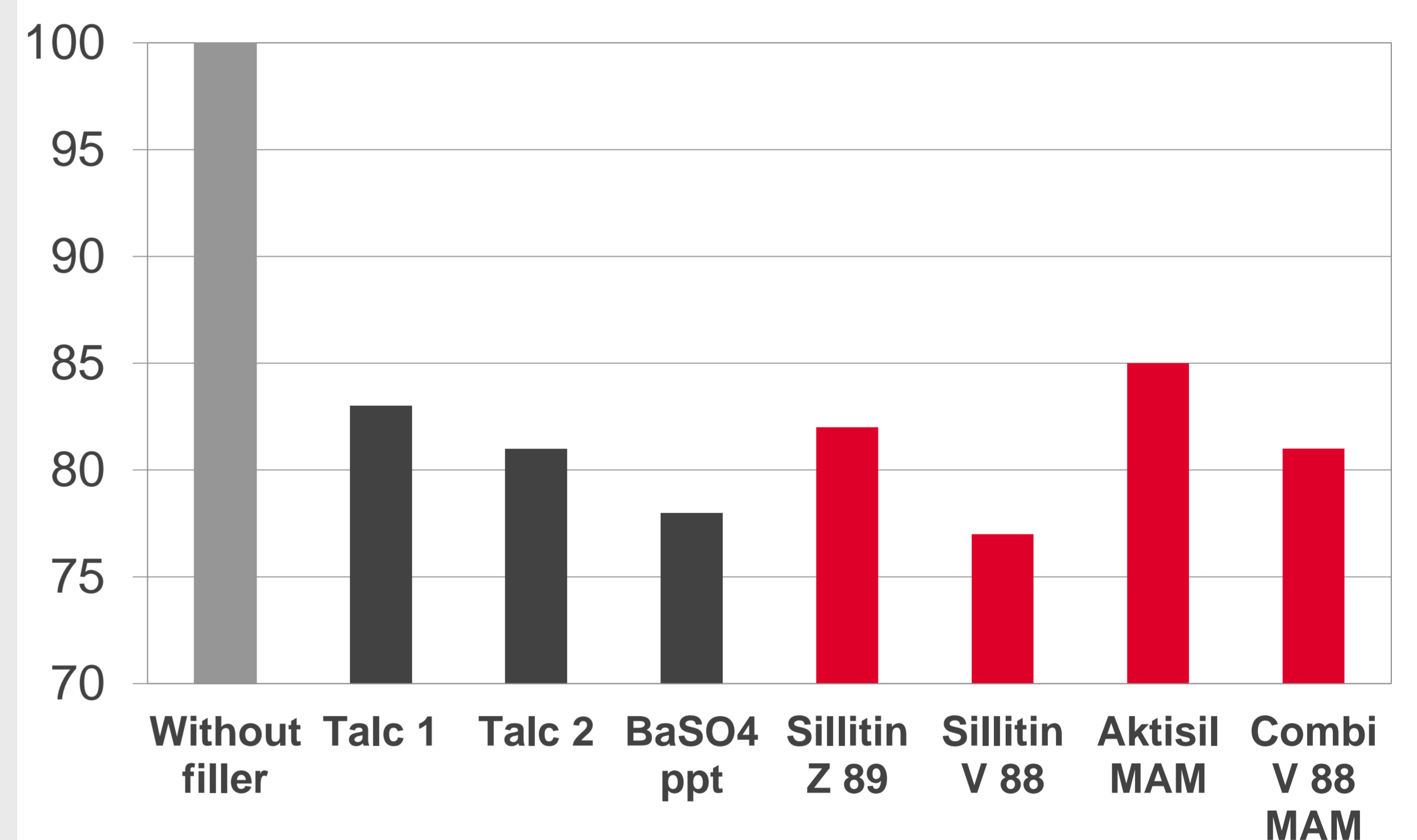


Abrasion Loss

Taber S 42, 0.5 kg, 55 rpm, 100 revolutions



Formulation Cost Index [%]



SUMMARY

Working with **Neuburg Siliceous Earth** fillers result in good optical properties and in an improved abrasion resistance which does not impair mechanical sanding characteristics. The shear viscosity is on a comparable level, but the yield point can be extremely lowered by using **Aktisil MAM**. By combining **Sillitin** with **Aktisil MAM** this rheological behavior can be precisely controlled. In addition, cost can be reduced, especially when using **Sillitin V 88**.