

TALC as ANTIBLOCKING in

LLDPE

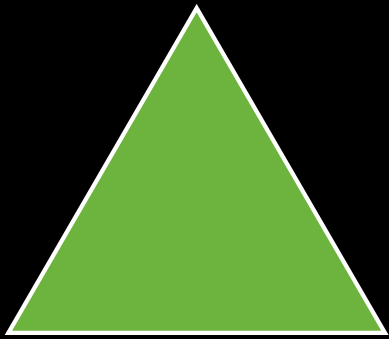


Piergiovanni Ercoli Malacari



TAKEAWAY MESSAGES

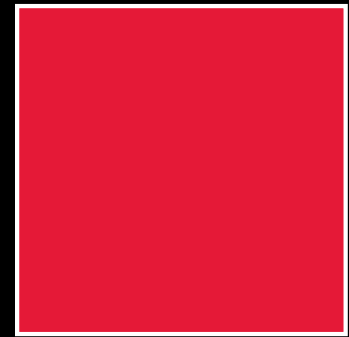
IMI Fabi TALC



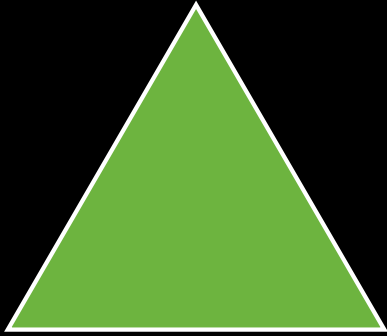
Softness



Easy Handling



**Balanced
properties**



Softness

**Talc is the softest
mineral
providing
minimal wearing
to equipment**



**Easy
handling**

**Compacted
micronized talc
makes easier the
feeding in the
extruder.**

**Free flowing grade
is available too**



**Balanced
properties**

**Good compromise
between
antiblocking,
transparency and
slip properties**



EXPERIMENTAL



C₄ LLDPE

+ 3000ppm mineral AB

+ 800ppm Erucamide

45 μm Blown film

Tested ADDITIVES

TALC Different talc grades

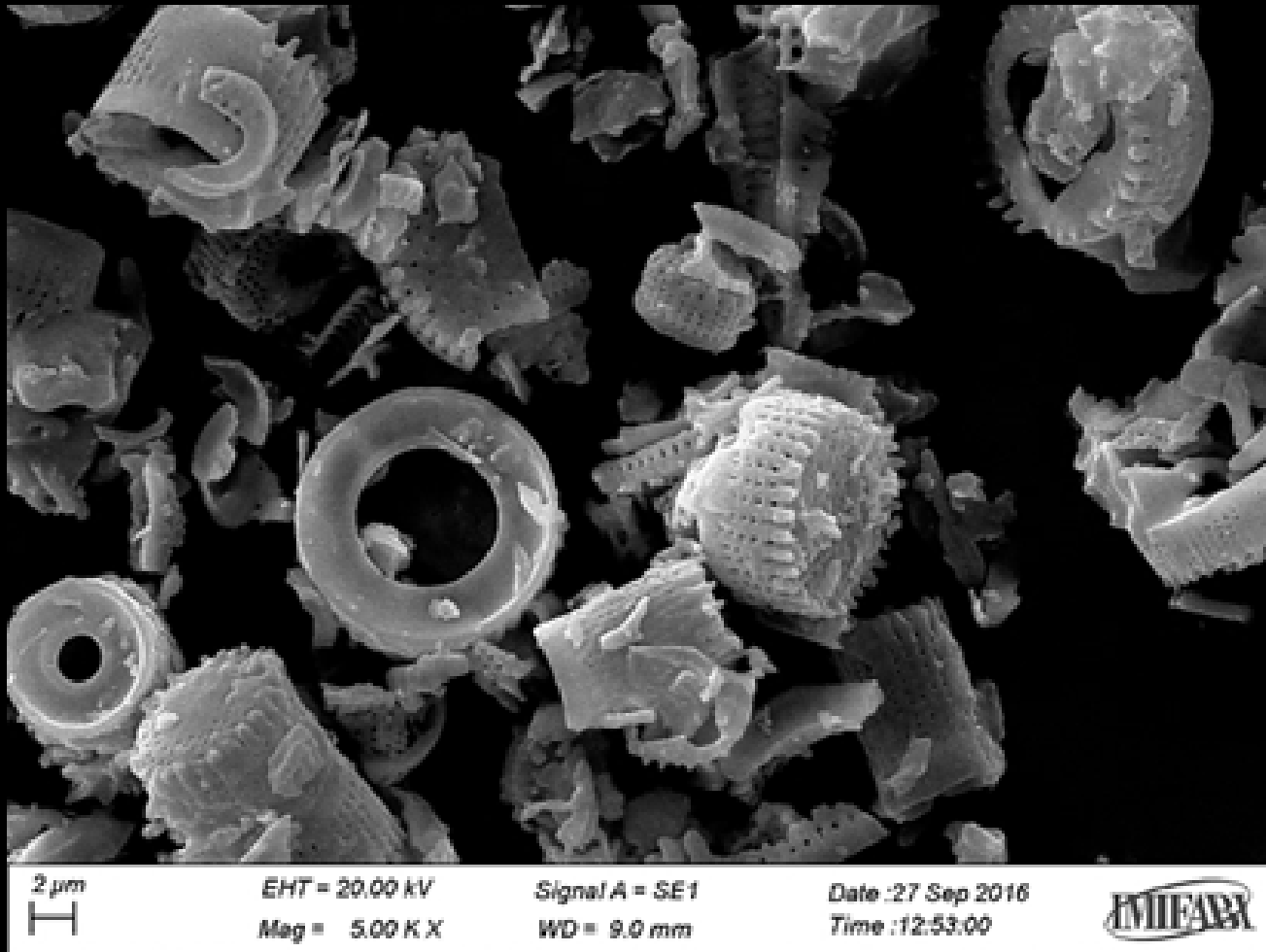
SS Synthetic Silica

DE Diatomaceous Earth

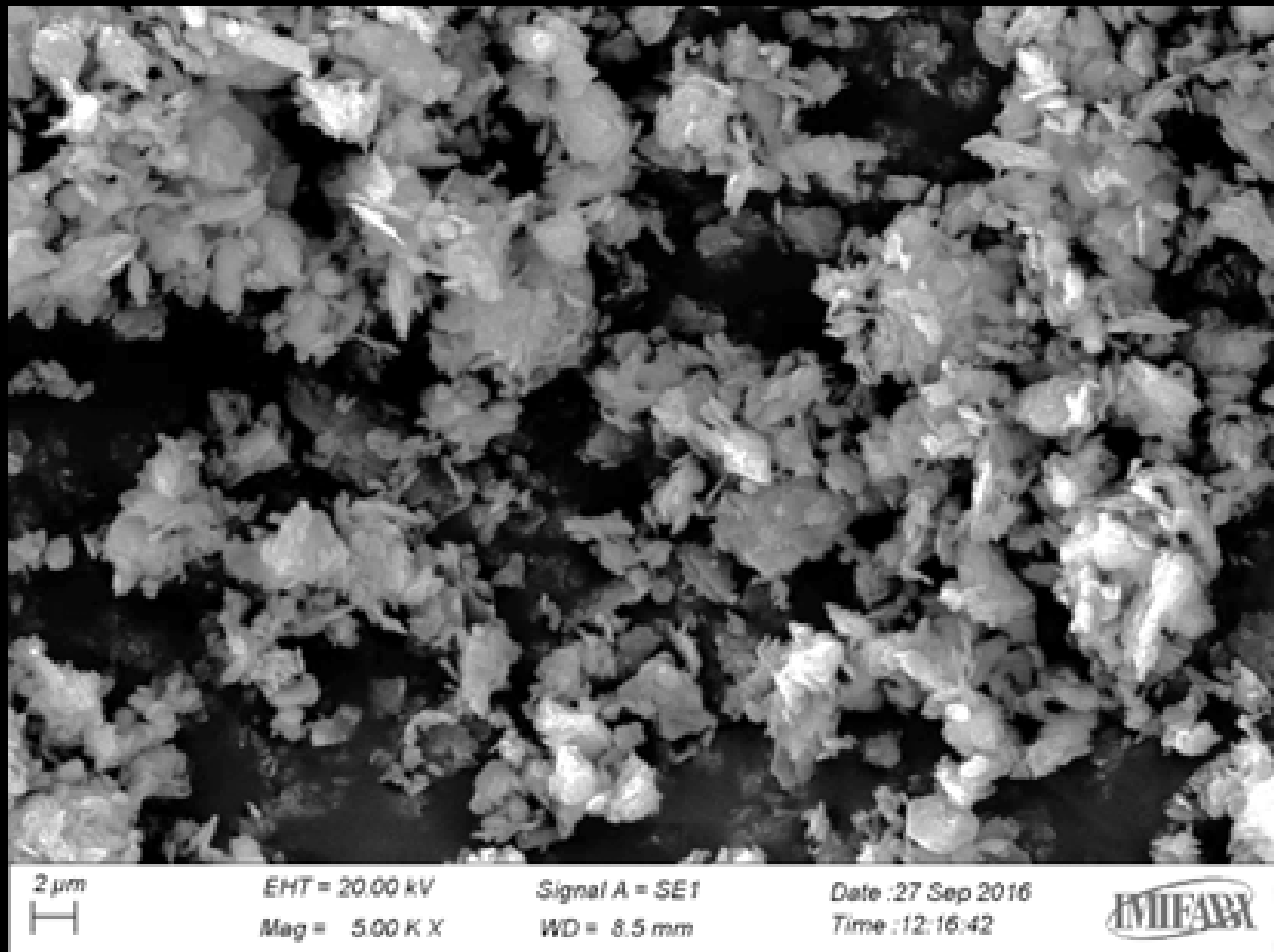
CC Calcined Clay

CaCO₃ Calcium carbonate

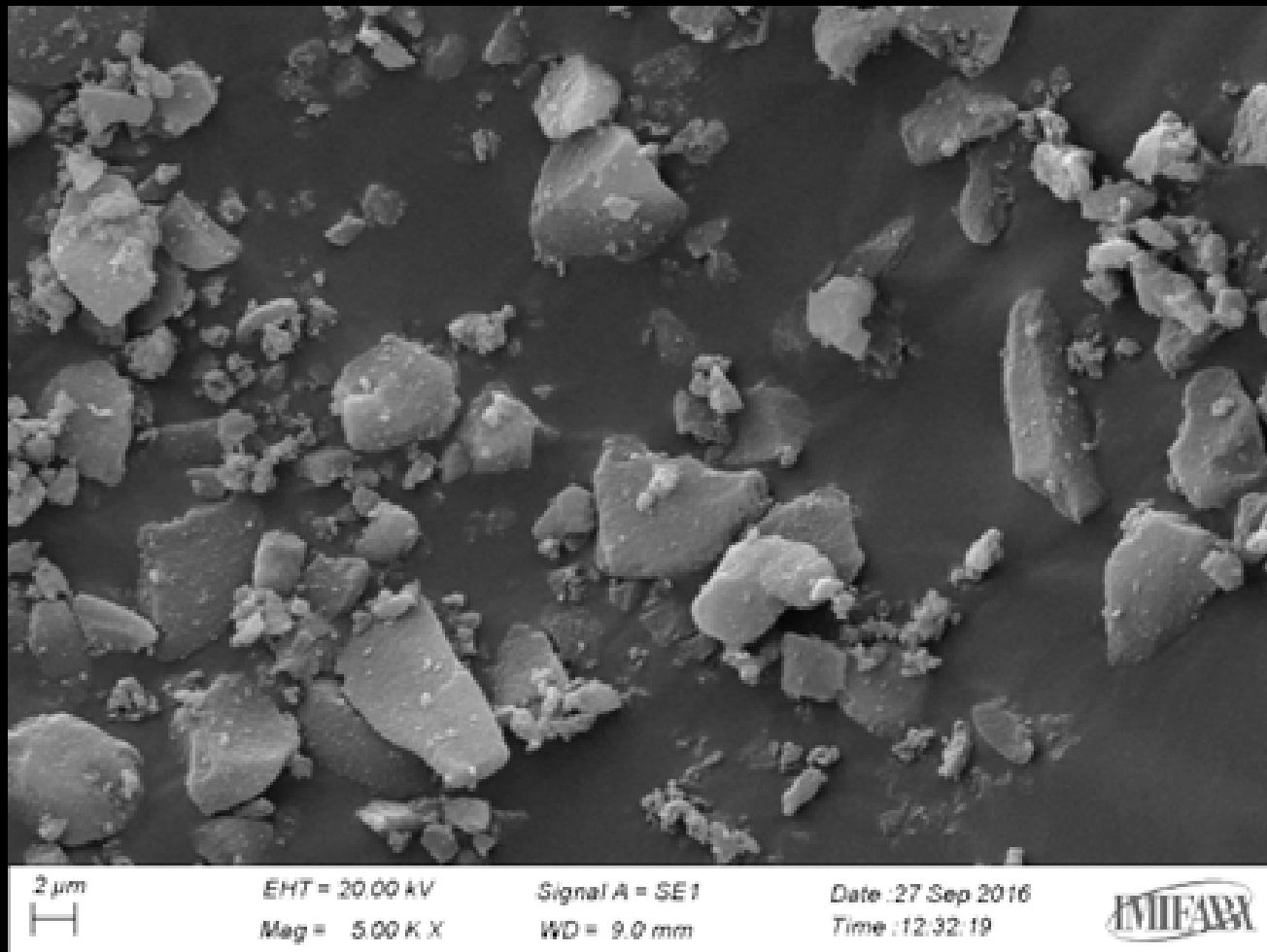
DE Diatomaceous Earth



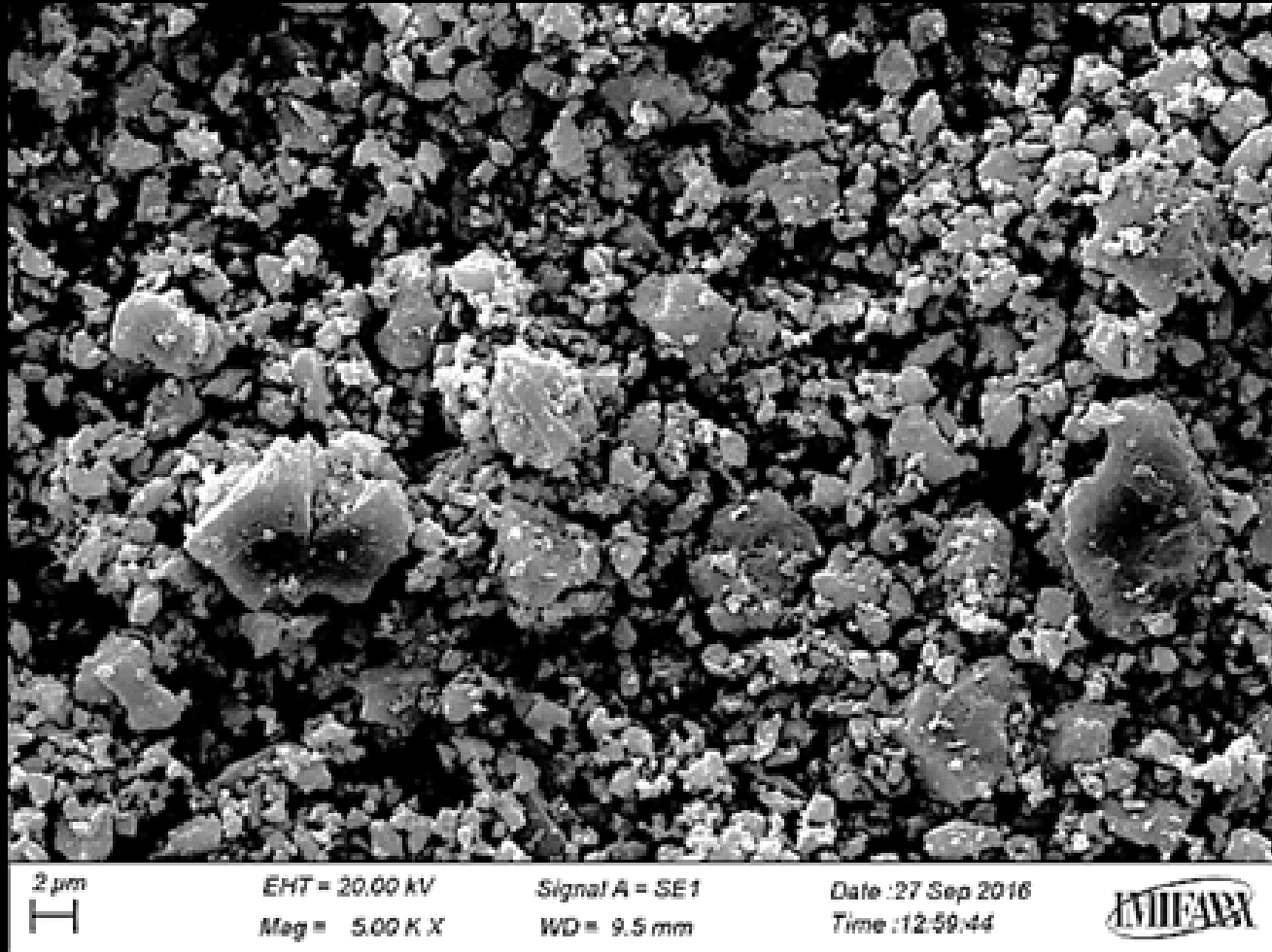
CC Calcined Clay



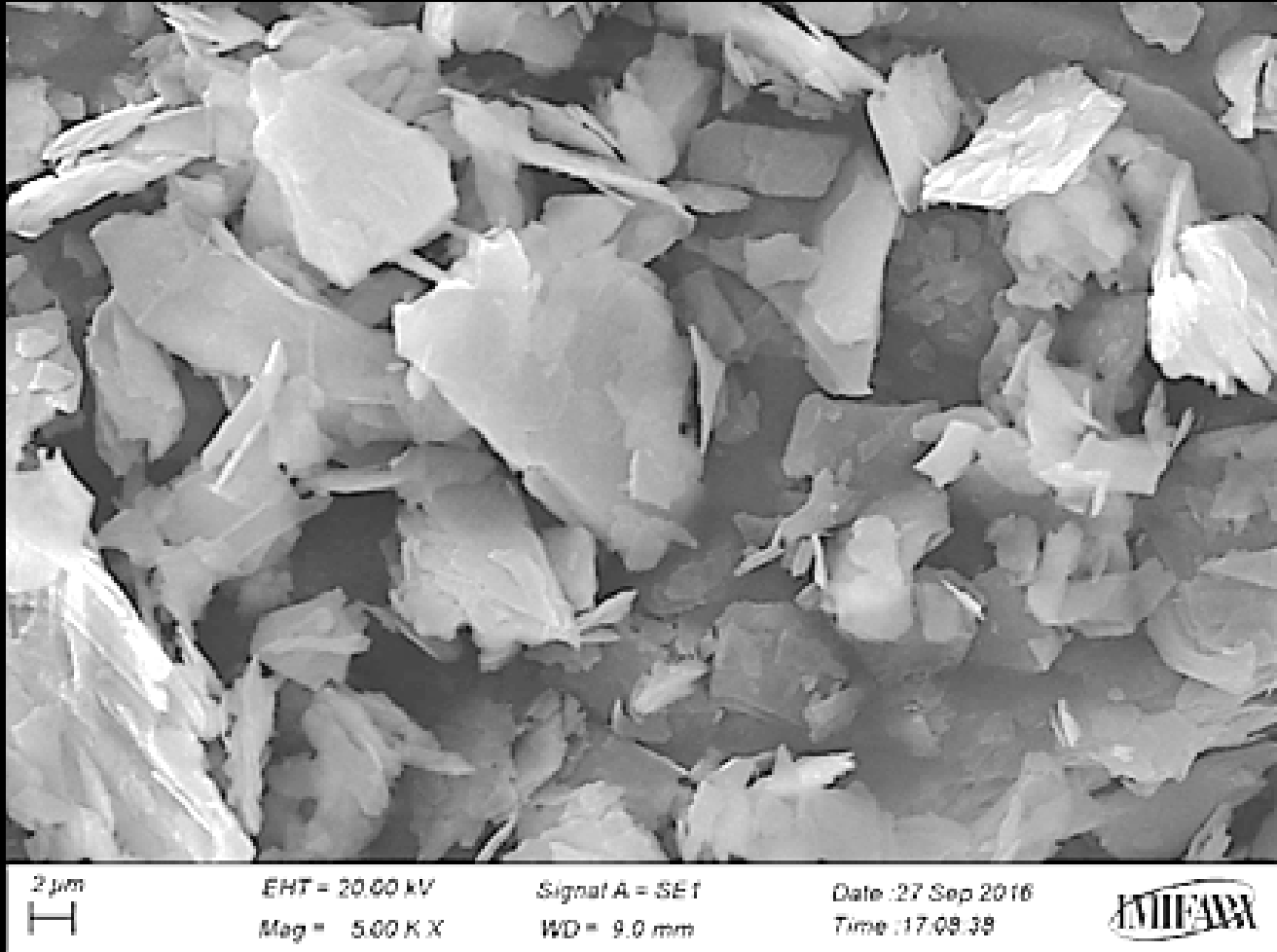
SS Synthetic Silica



CaCO_3 Calcium Carbonate



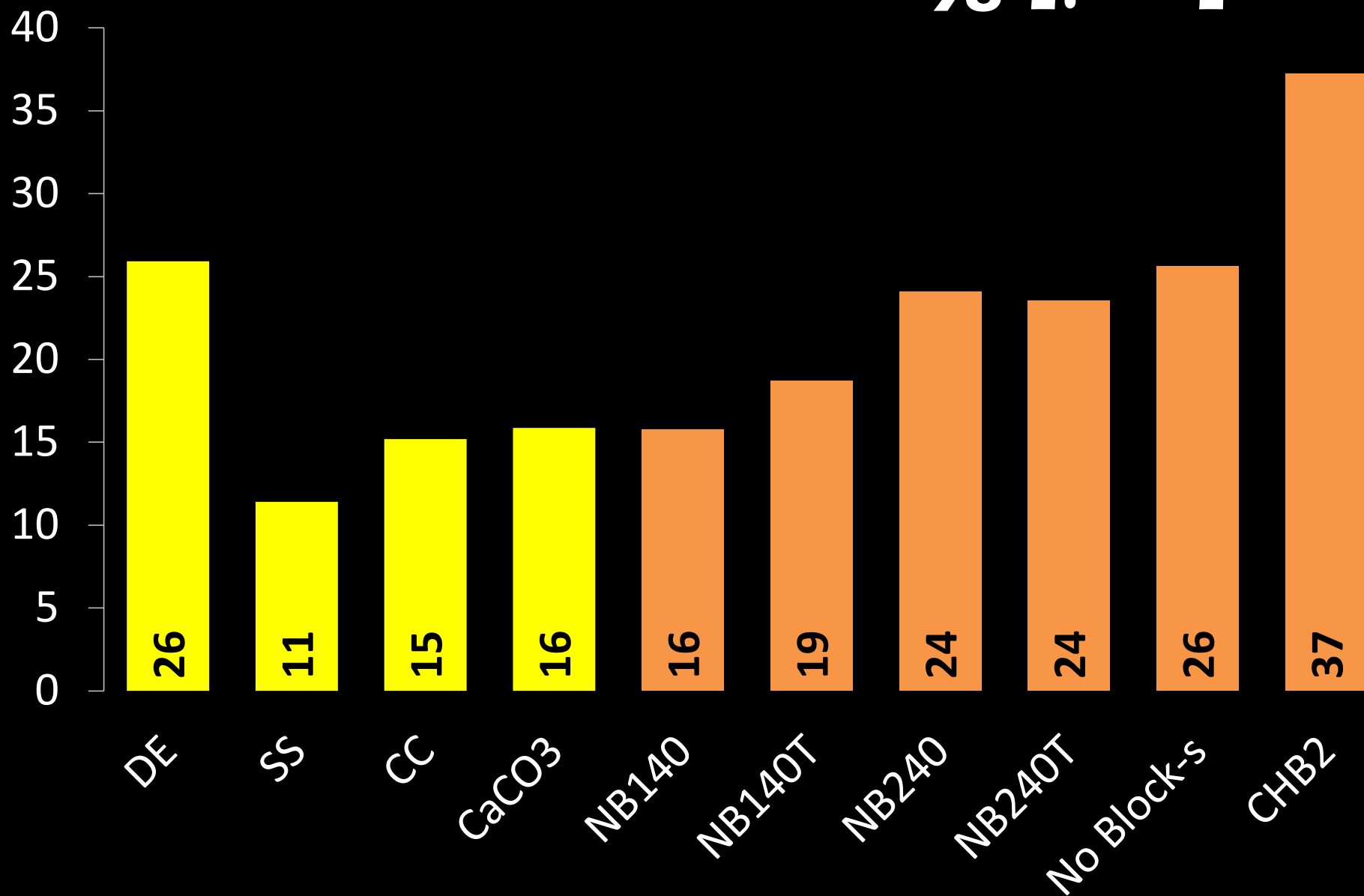
Talc Mg sheet silicate hydrated

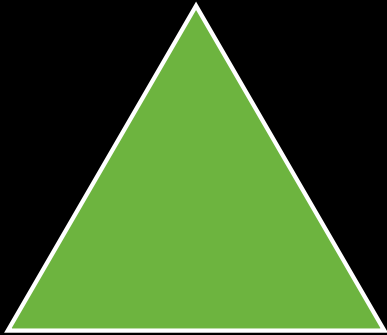


Functional fillers properties



FINENESS - D_{98} [μm]

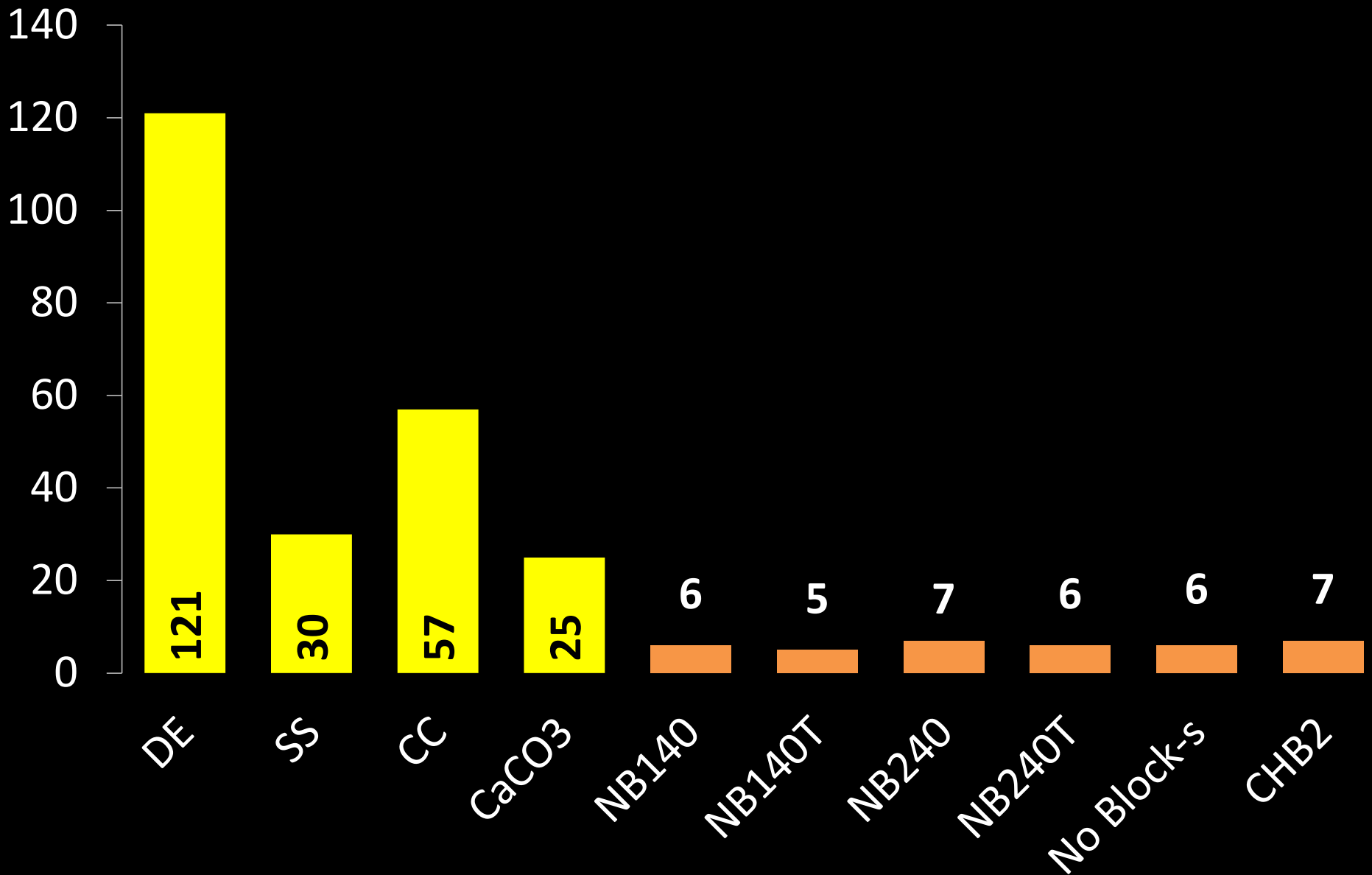




Softness



Abrasivity [mg]

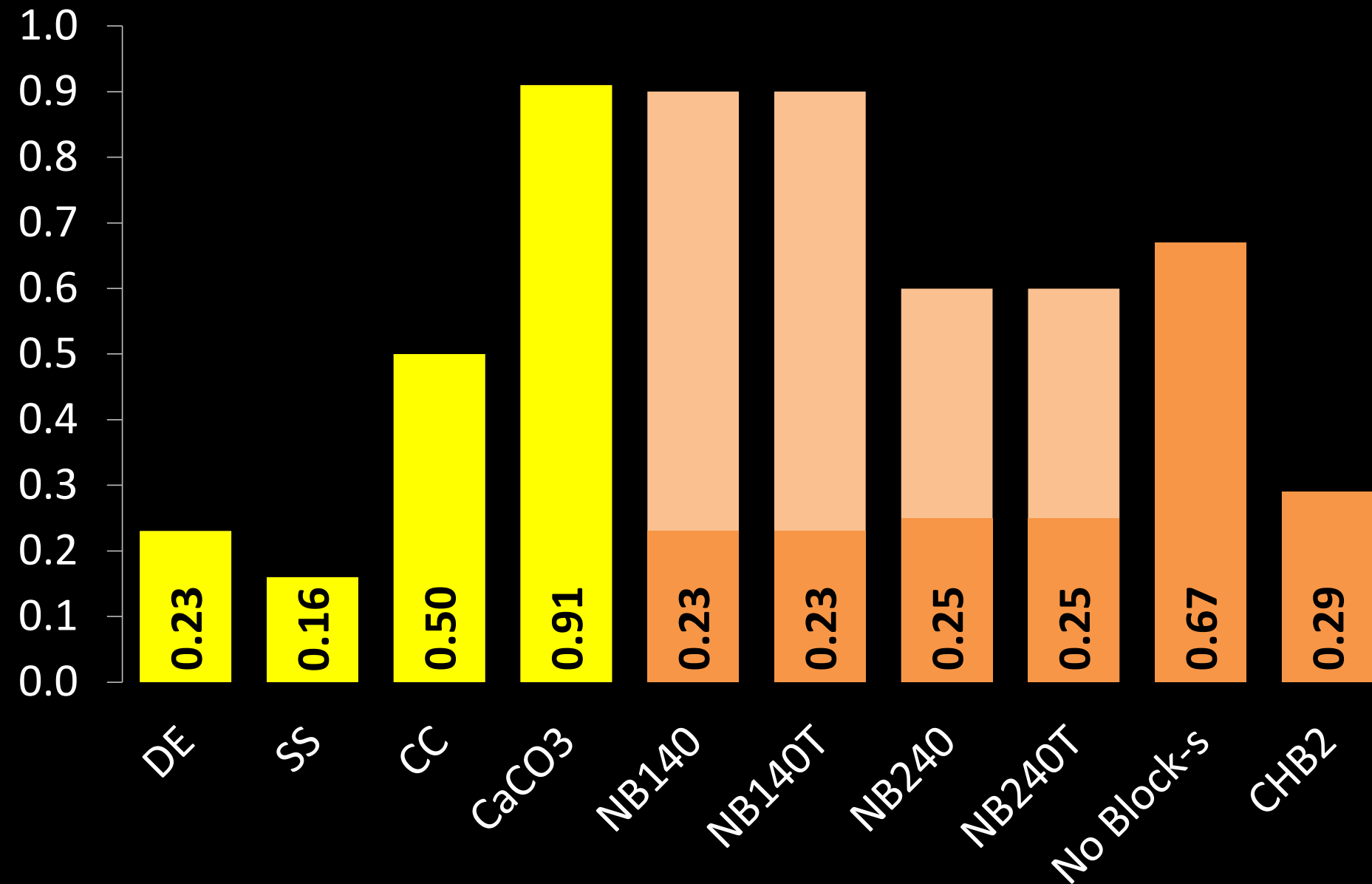




**Easy
handling**



Bulk density [g/cc]



No Block-S



Loose Powder

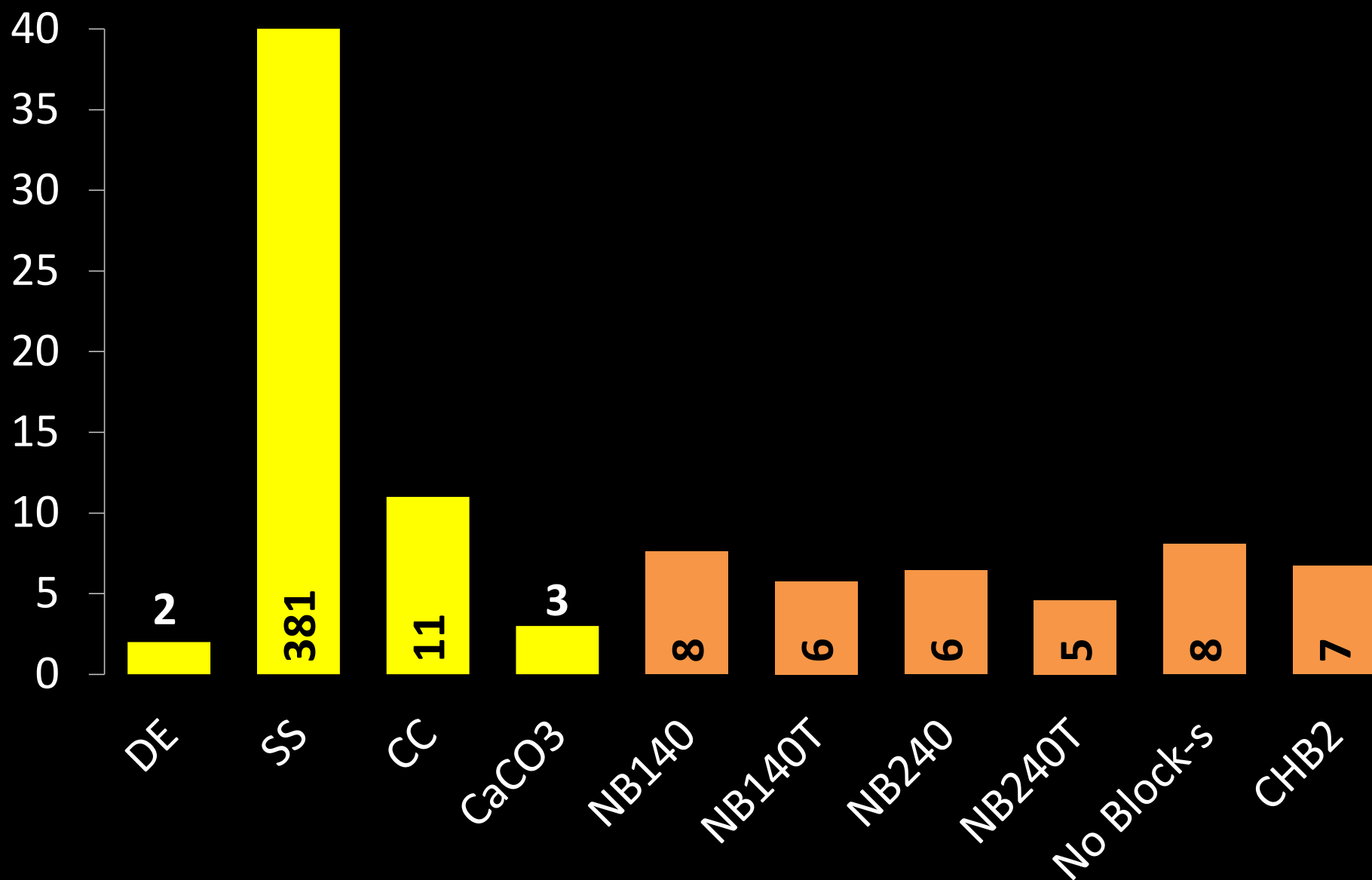


**Compacted
talc**



No Block-S

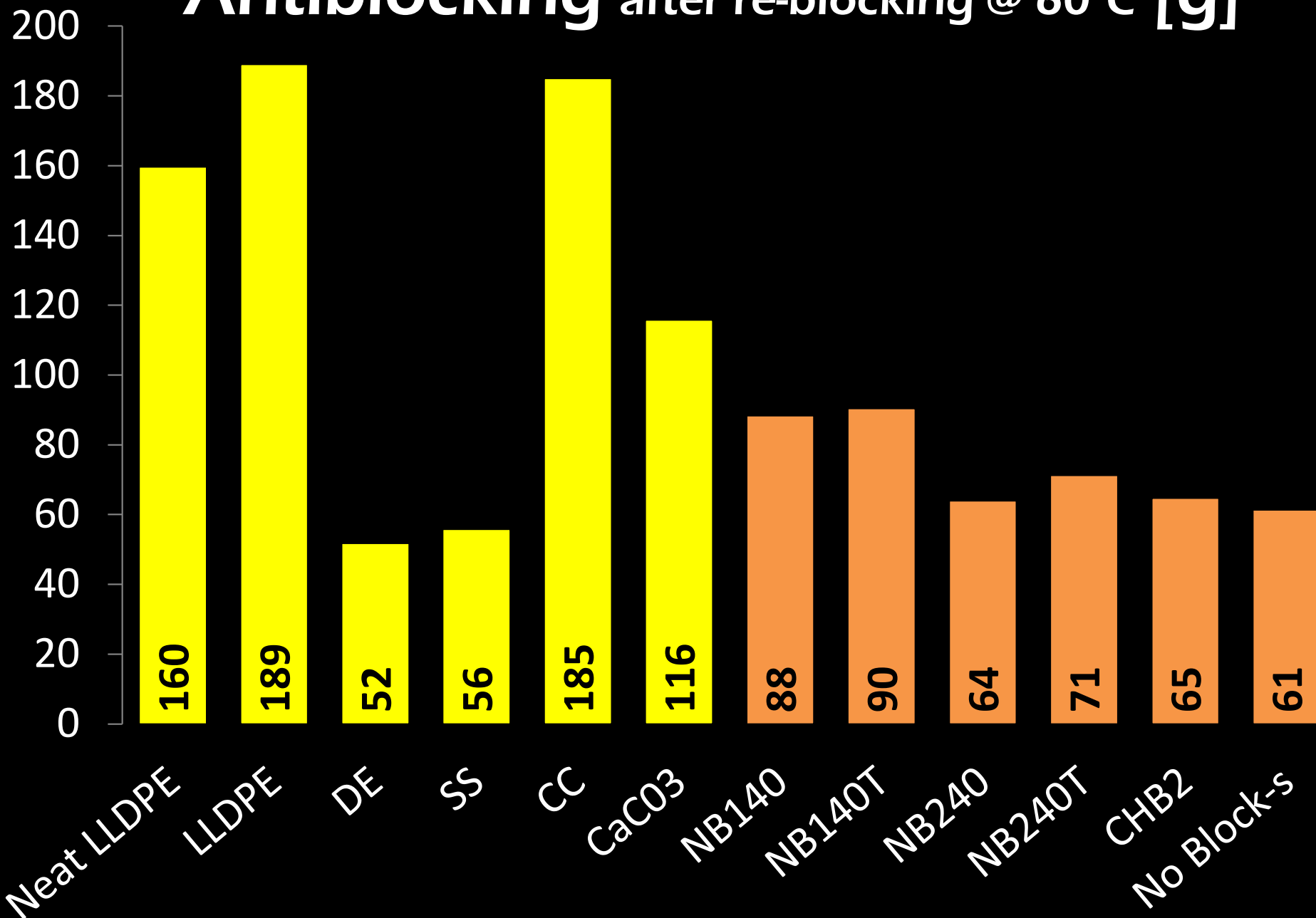
Specific Surface [m^2/g]

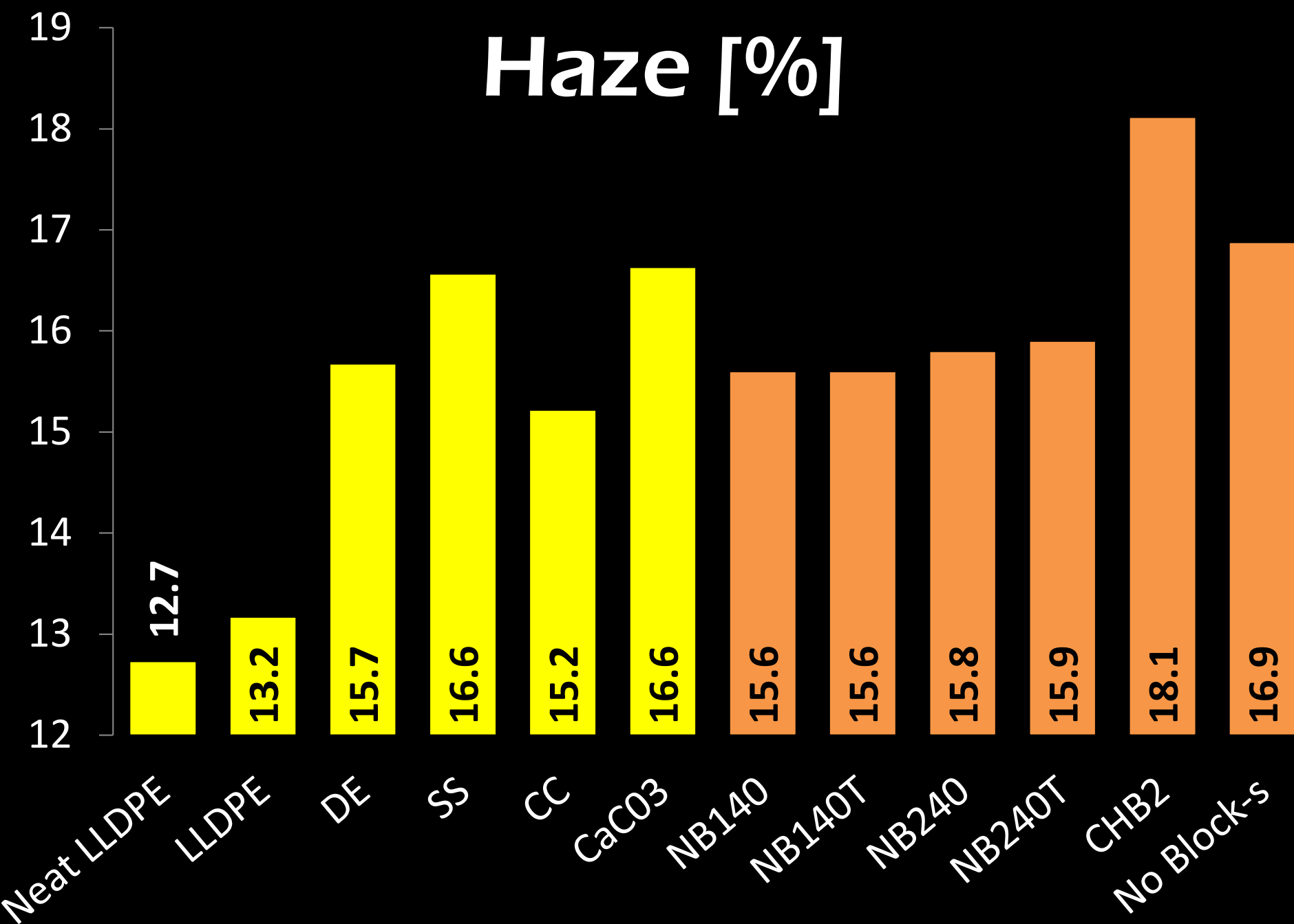


Blown film properties

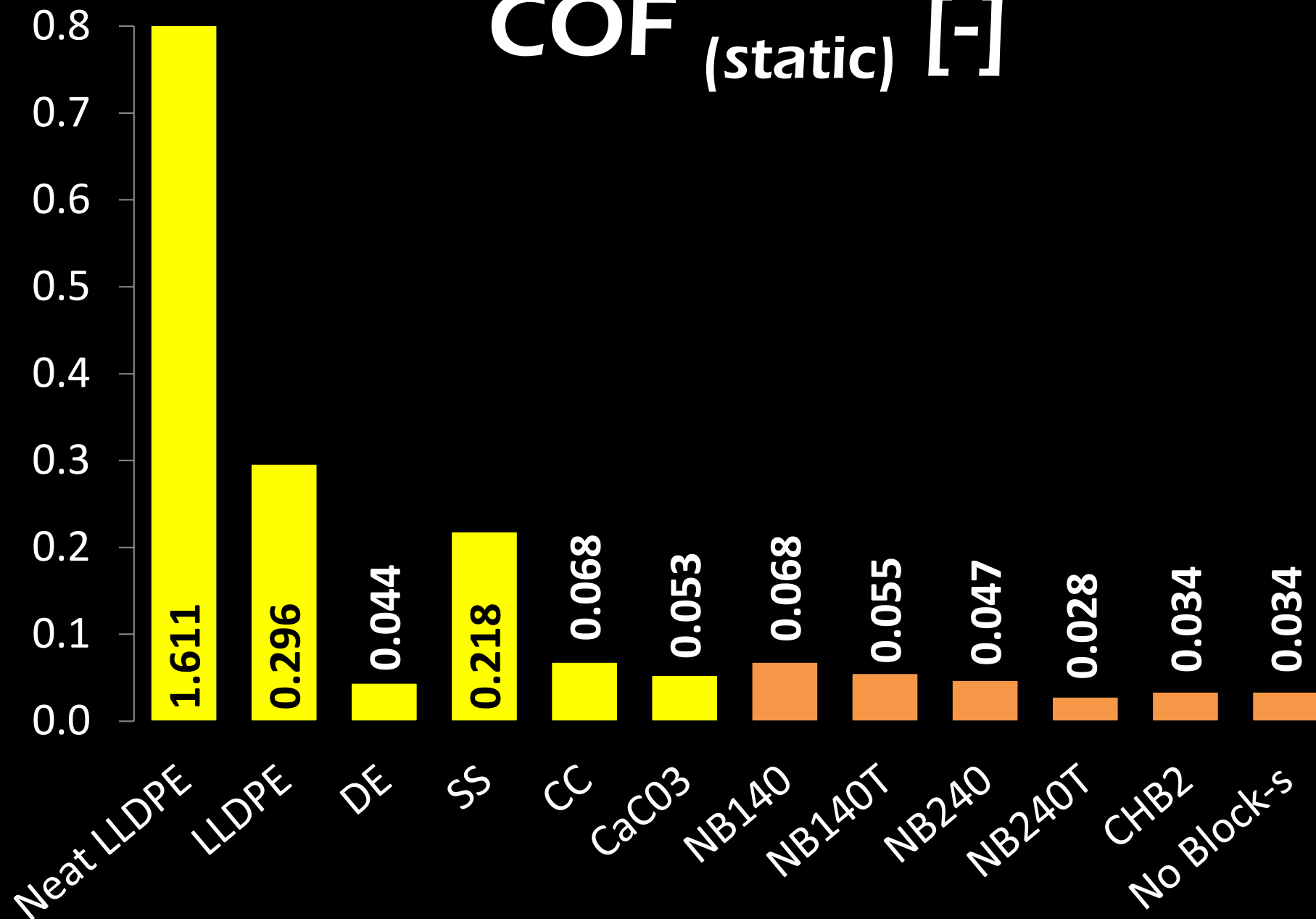


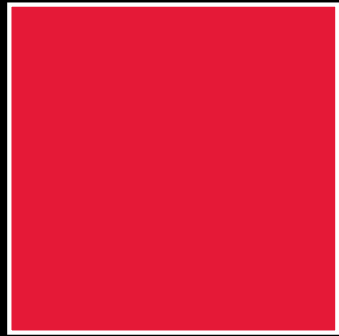
Antiblocking after re-blocking @ 60°C [g]





COF_(static) [-]

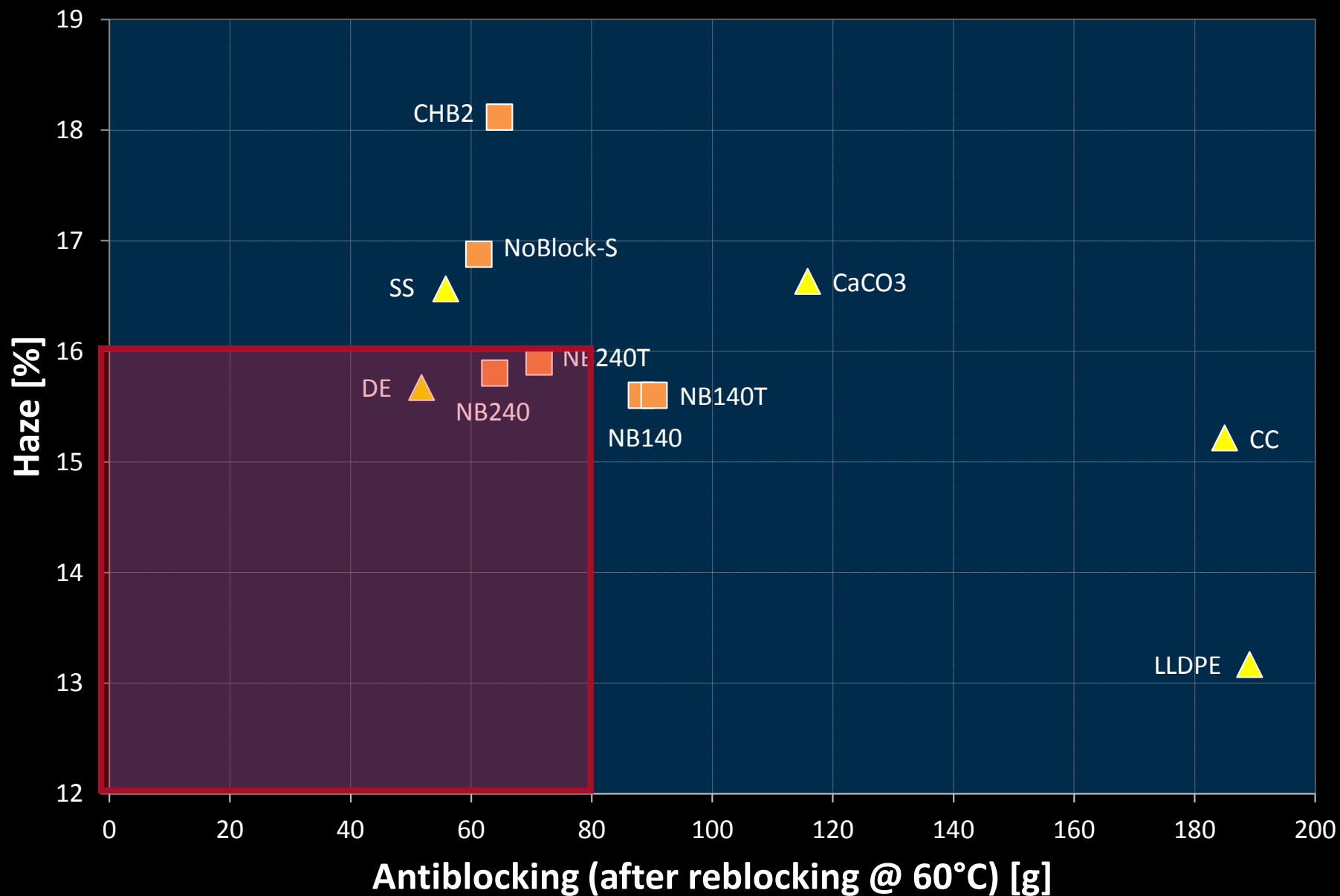




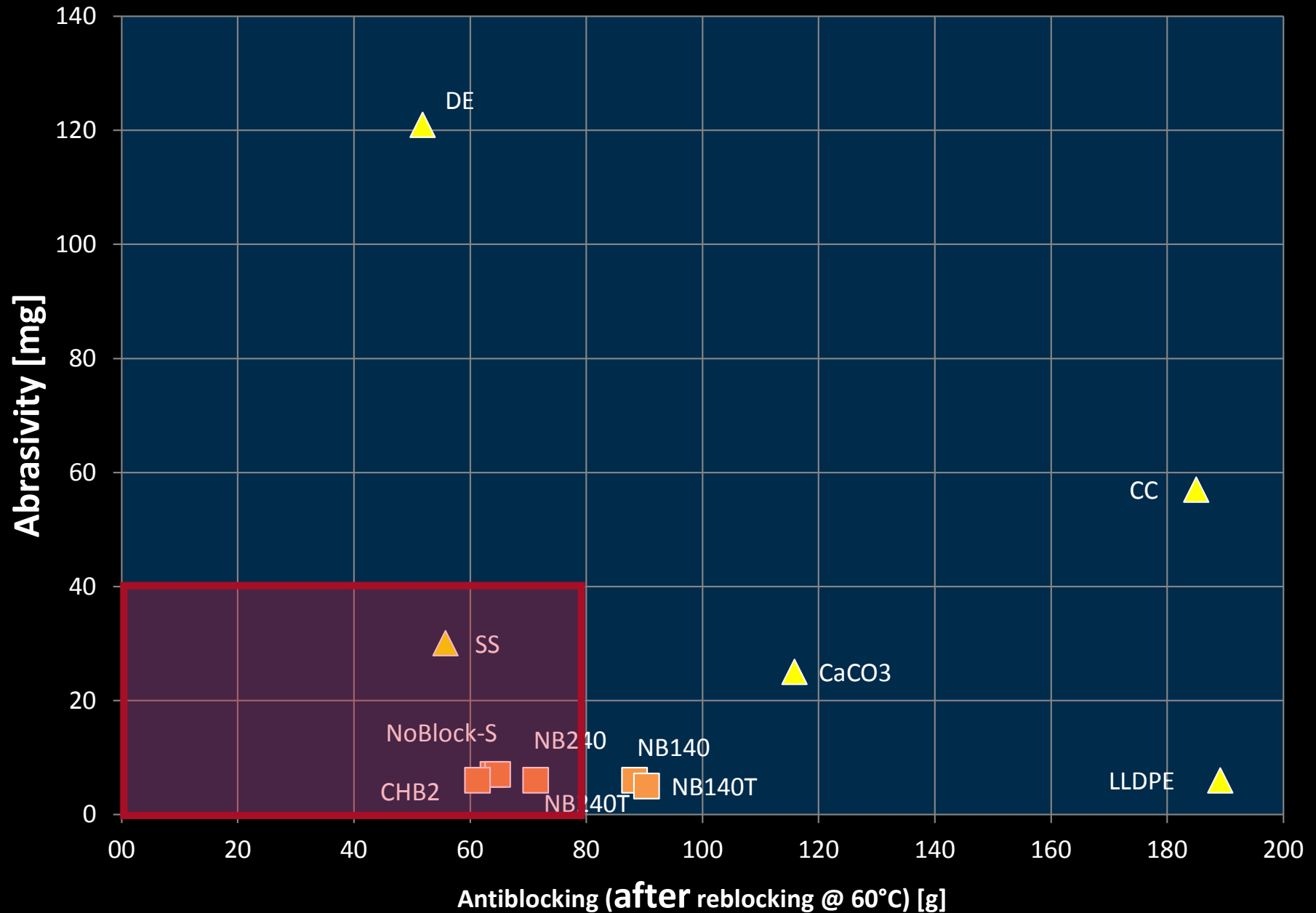
Balanced properties



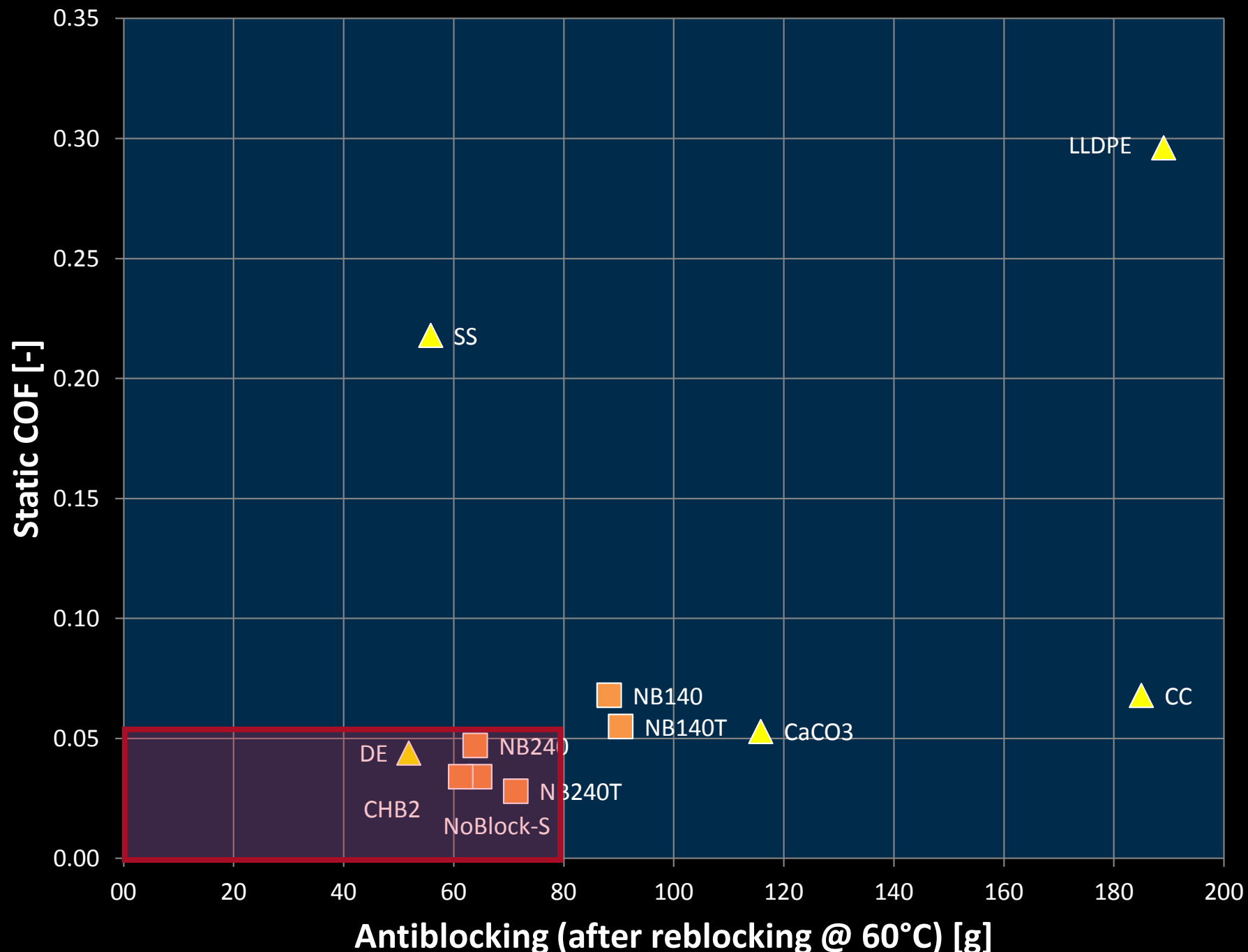
haze-to-antiblocking tradeoff @ 3000 ppm loading



abrasivity-to-antiblocking tradeoff @ 3000 ppm loading



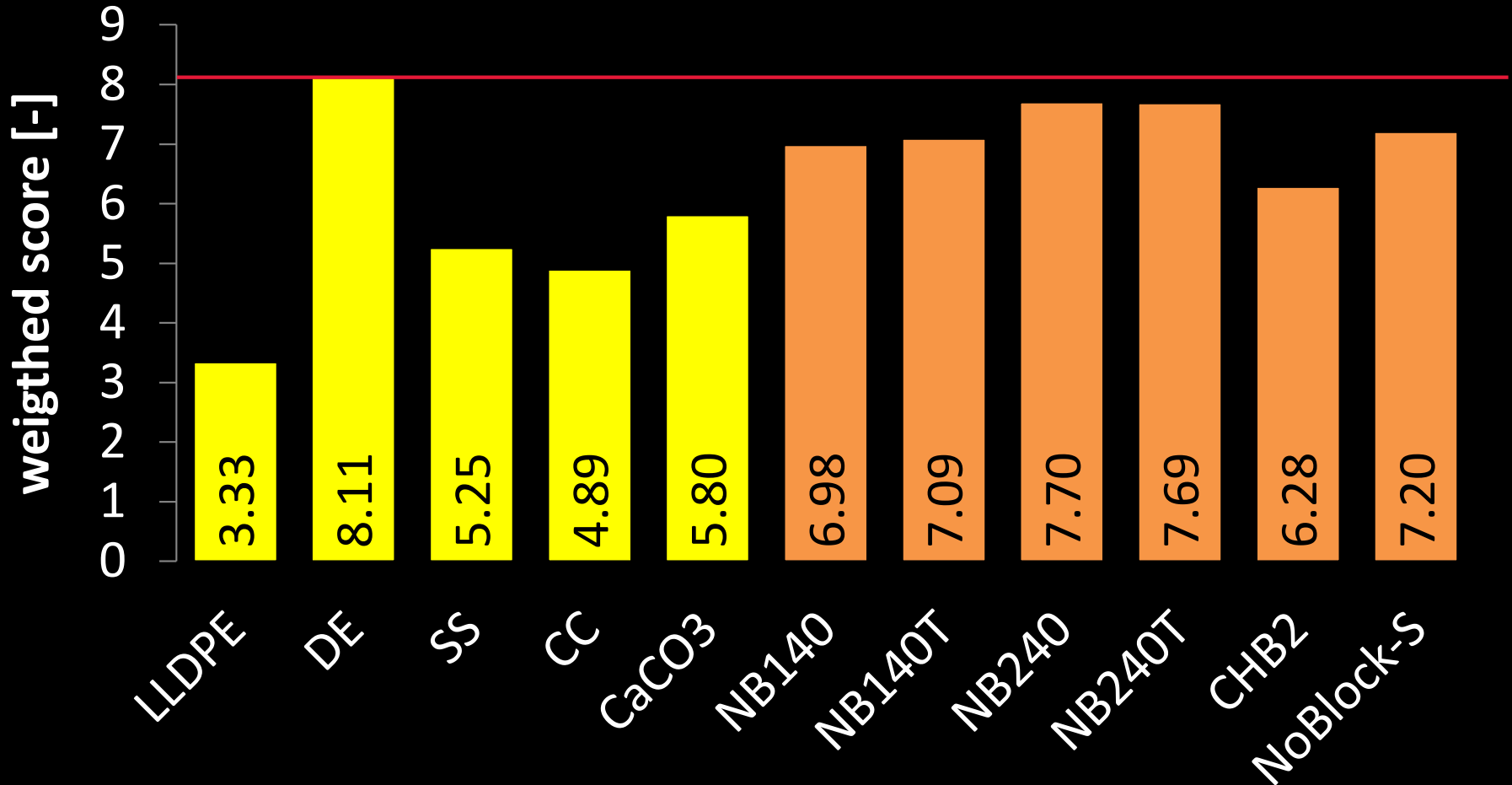
CoF-to-antiblocking tradeoff @ 3000 ppm loading



Property	Weight [%]
Antiblocking	33.34
Transparency	33.33
Slip	33.33
total	100

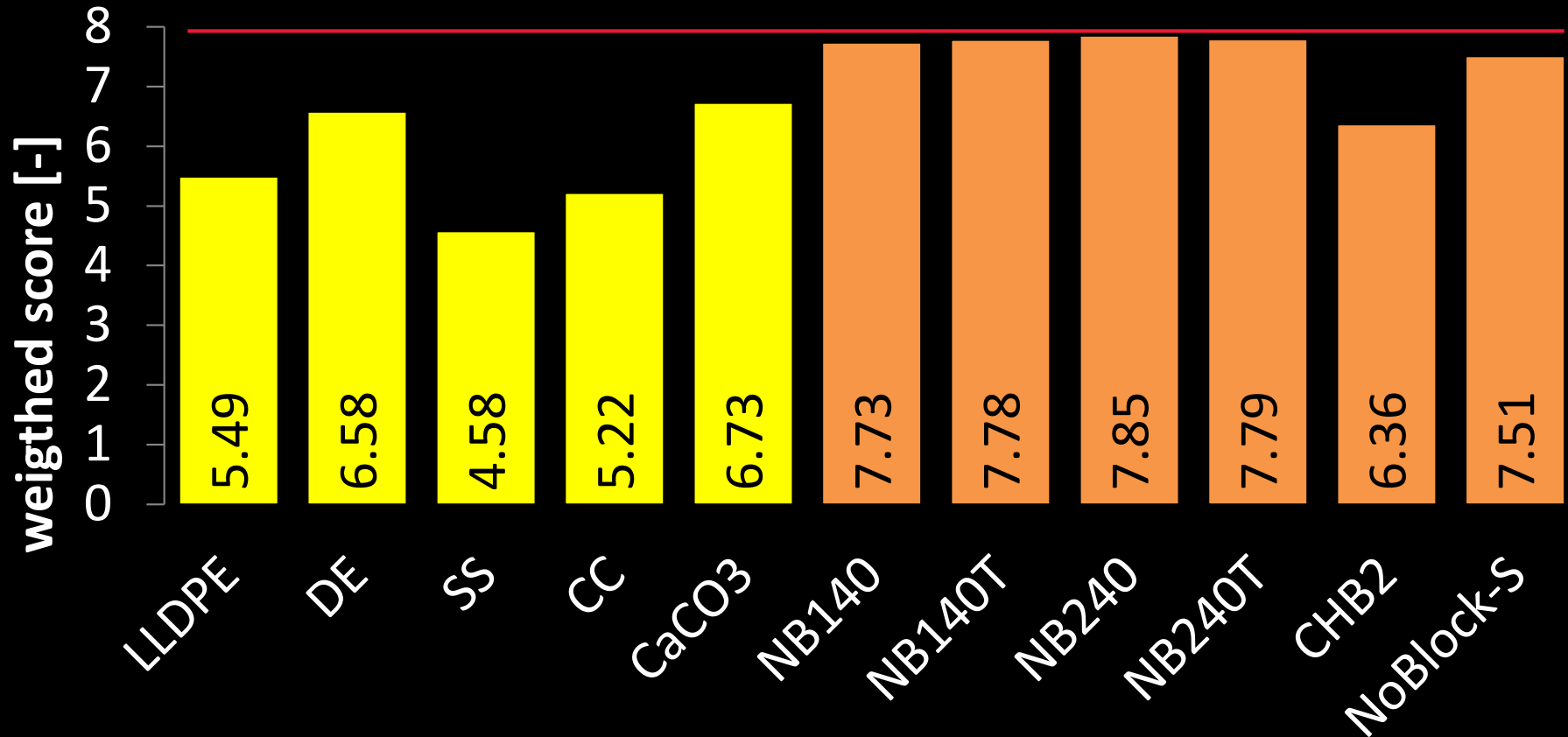
SCORE

film performances



Property	Weight [%]
Antiblocking	25
Transparency	25
Slip	20
Abrasivity	10
Handling	10
Price	10
total	100

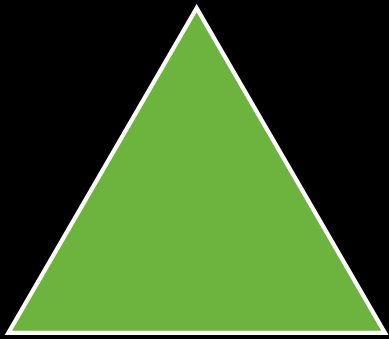
SCORE *balanced*



CONCLUSION

TAKEAWAY MESSAGES

IMI Fabi TALC



Softness



Easy Handling



**Balanced
properties**