

Boosting Opacity

Have you transformed your formulation yet?



Calcigloss® - IP

Stabilizing gloss and haze
with ChameleoBoost™ Technology



THINKING OF TOMORROW

Brilliant coatings with Calcigloss® - IP

Stabilizing gloss and haze at lower pigment levels

Calcigloss® - IP is designed to enhance the performance of pigments such as TiO_2 in a wide range of gloss levels. Excellent dispersibility in both water and solvent based systems characterize its properties.

The performance of Calcigloss® - IP is assessed in a high gloss 2c polyurethane coating. In the described example the titanium dioxide content is reduced from 30% to 20% in two incremental steps and replaced by Calcigloss® - IP.

The examination of gloss, haze and contrast ratio was done after the coatings were cross linked with hardener (according to table 1) and applied. After drying at ambient temperature, the optical properties were measured at a dry film thickness of 60 μm .

Benefits

- *High gloss*
- *Low haze*
- *Easy dispersible*
- *Saving pigment and costs*
- *Enhancing carbon footprint*
- *Substantial substitution of TiO_2 by spacing effect*



Gloss and haze performance at different pigment levels

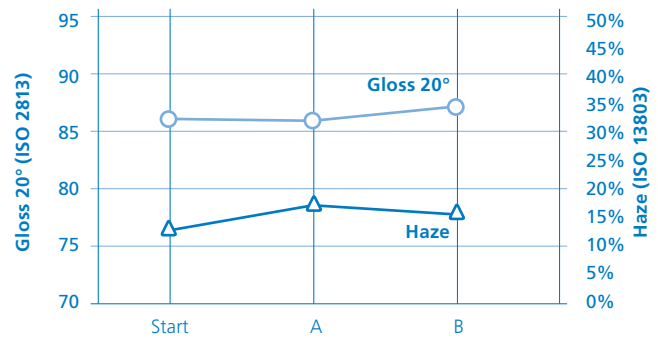


Figure 1

Opacity performance presented as contrast ratio

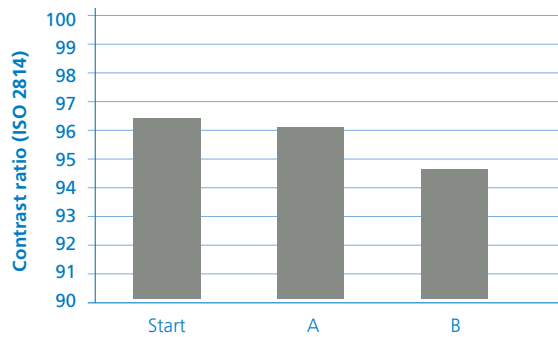


Figure 2

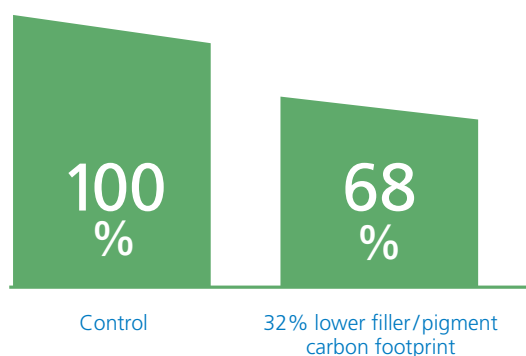
The data in figure 1 shows that up to 10% Calcigloss® - IP can be used without visual impact on gloss and haze.

Thus Calcigloss® - IP offers potential pigment and cost savings, e.g. of titanium dioxide, in the described 2c polyurethane coating. In addition, the pigment savings lead to a significantly lower carbon footprint of the coating formulation and helps to protect our environment.

Composition of 2c polyurethane coating system and formulation characteristics

Raw Material	Start	A	B
	Parts by weight		
Acrylic resin, OH-functional	25.0	25.0	25.0
Butyl acetate	5.0	5.0	5.0
Xylene	1.0	1.0	1.0
Methoxy propyl acetate	2.0	2.0	2.0
Wetting agent	0.3	0.3	0.3
Defoamer, silicone based	0.5	0.5	0.5
Titanium dioxide	30.0	25.0	20.0
Calcigloss® - IP	0.0	5.0	10.0
Acrylic resin, OH-functional	35.0	35.0	35.0
Levelling agent, silicone based	0.2	0.2	0.2
Xylene	1.0	1.0	1.0
Total	100.0	100.0	100.0
Polyisocyanate aliphatic	25.0	25.0	25.0
Total	125.0	125.0	125.0
Pigment volume concentration	13.5%	14.4%	15.3%
Density	1.23 g/cm ³	1.22 g/cm ³	1.21 g/cm ³
Solid content	68.1 %	68.1 %	68.1 %
VOC content	392 g/l	389 g/l	386 g/l
Impact on pigment/filler carbon footprint	100	84 (-16%)	68 (-32%)

Sustainable impact on carbon footprint



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