

SP-Surface Passivated Pigments

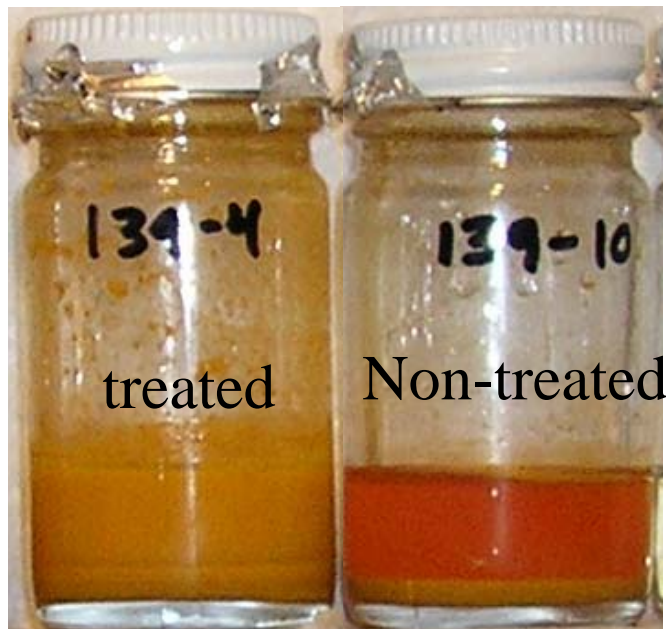
SP- Pigments are surface treated with aluminosilicate to provide unique performance advantages for inorganic pigments:

- Surface Passivation
- Hydrophilicity
- Improved Dispersion

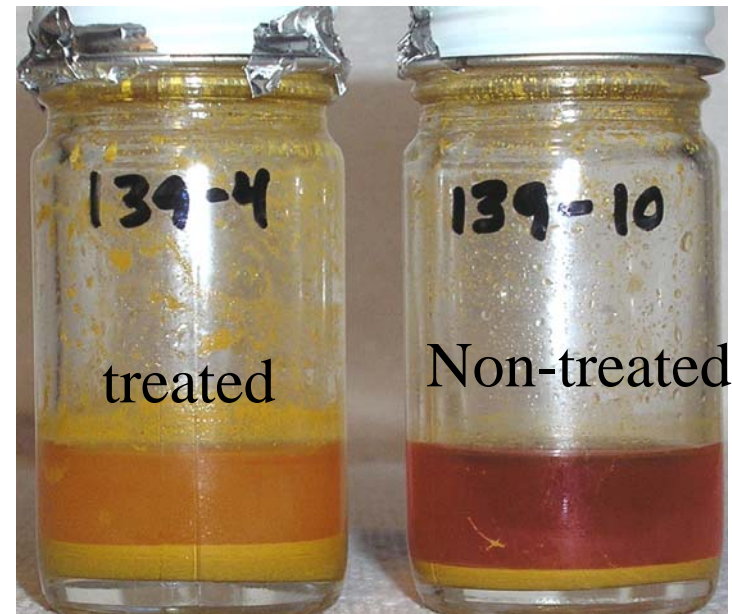
Surface Passivation - Yellow Iron Oxide

Comparison of *SP-Surface Passivated* Treated Yellow Iron Oxide vs. Non-treated Yellow Iron Oxide as a Function of Aging Time at 55°C

avobenzene Fe-chelation reaction was studied in the presence and in the absence of yellow oxide powders. The powders were dispersed in a solution containing 2.5% avobenzene in capryl triglyceride (w/w). Samples were prepared by blending 7.5 g of solution, 0.4g powder and 0.06 g water. They were placed in an oven to age at 55°C.



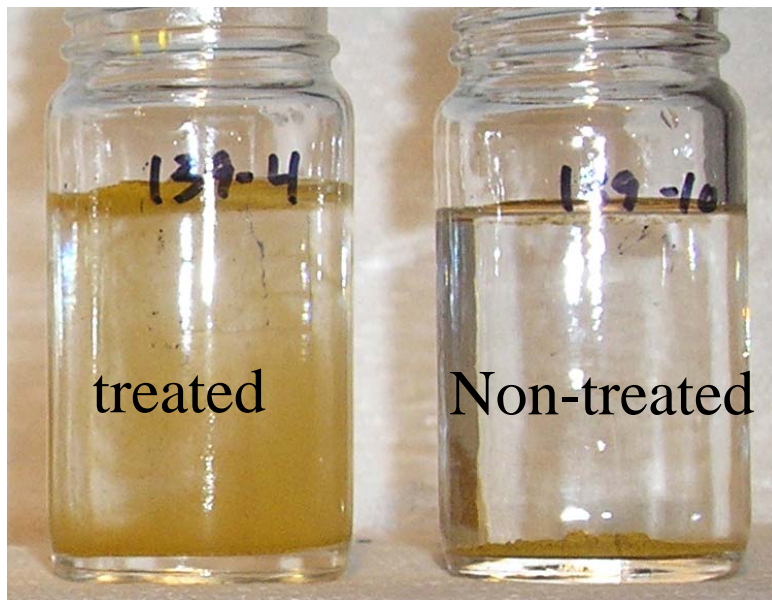
3 days



78 days

Hydrophilicity – Yellow Iron Oxide & Titanium Dioxide

- *SP-Surface Passivated* treated powders are hydrophilic and disperse more readily in water than their non-treated counterparts
- The treated powders spontaneously disperse (no agitation)



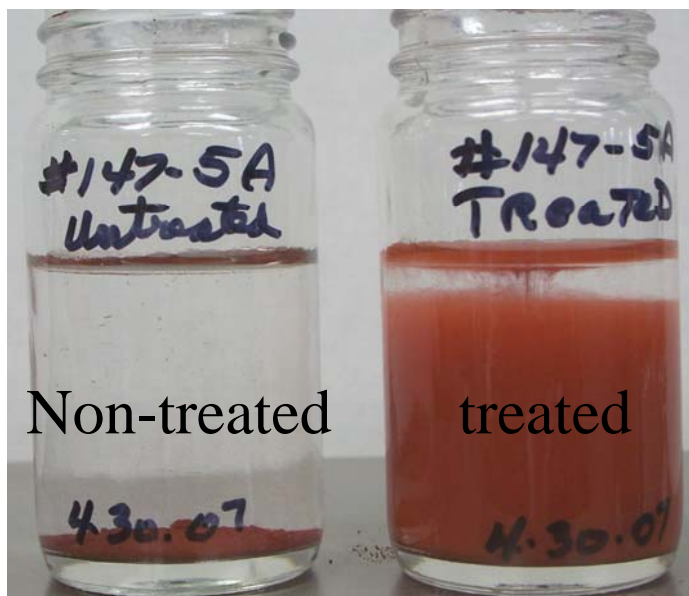
Spontaneous dispersion



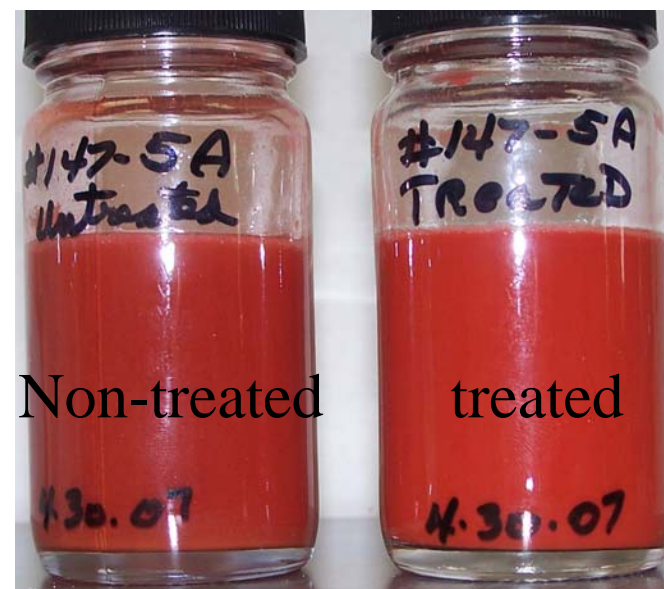
Spontaneous dispersion

Hydrophilicity - Red Iron Oxide

- The treated powders spontaneously disperse (no agitation)
- After shaking, the improved dispersion leads to a higher degree of light scattering with the same volume fraction of pigment (smaller particle size – less agglomeration)



Spontaneous dispersion

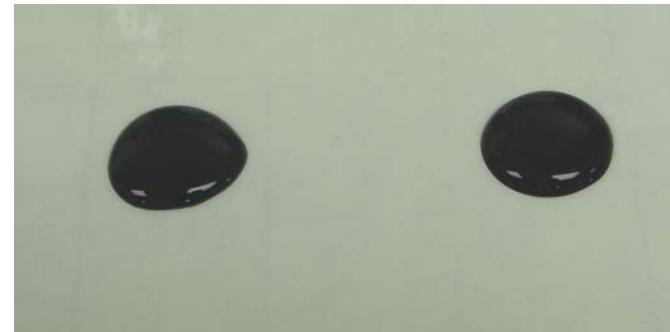


After shaking

Improved Dispersion – Black Iron Oxide

- The *SP-Surface Passivated* treated powders prefer to remain wetted and dispersed in water, whereas the non-treated powders “plate-out” over the substrate

Water dispersion before shearing



Water dispersion after shearing



Non-treated

treated

Improved Dispersion – Black Iron Oxide

- The *SP-Surface Passivated* treated pigments do not agglomerate with carbomers allowing formulation of pigmented gels.



Non-treated

treated