

New applications of Pickering-type emulsions for the cleaning of modern water-dispersed oil paints



WINTERTHUR



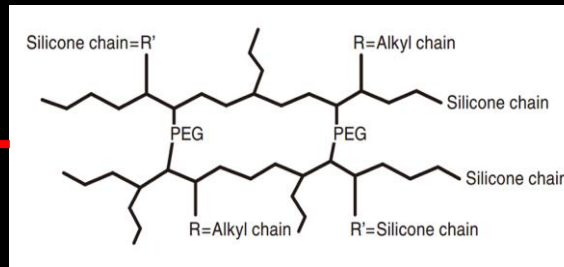
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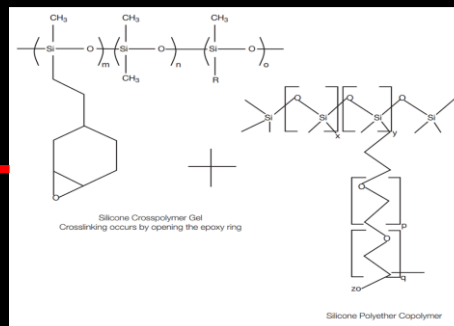
Cleaning emulsions

Shin-Etsu KSG-350z



Cyclopentasiloxane (and) PEG-15/Lauryl polydimethylsiloxylethyl dimethicone crosspolymer

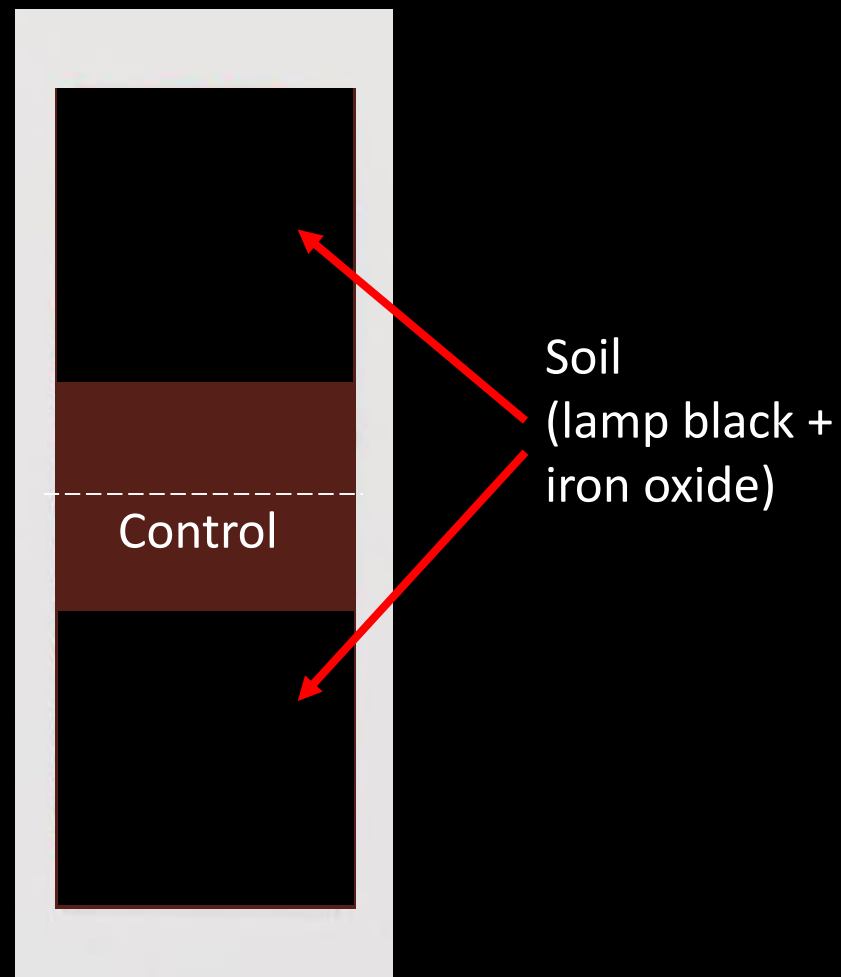
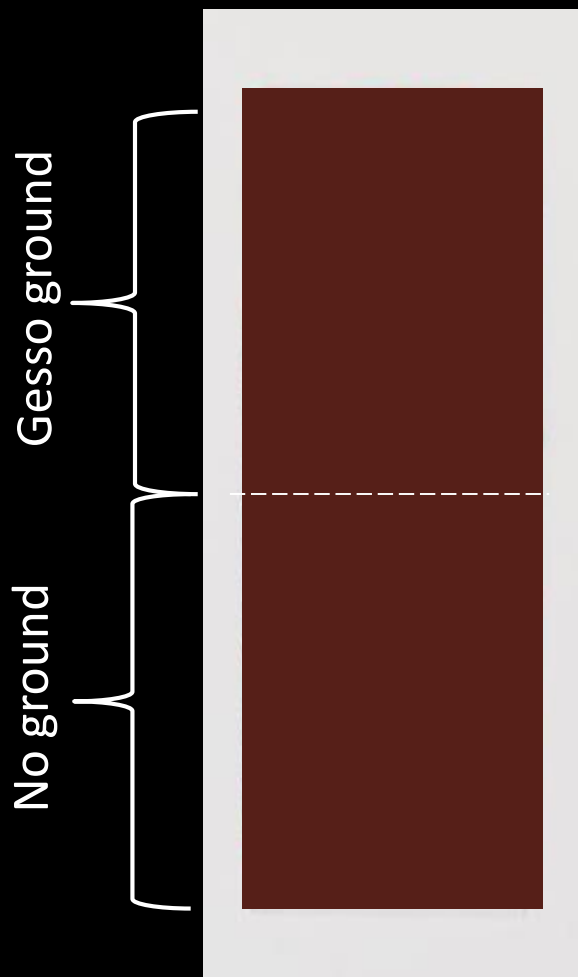
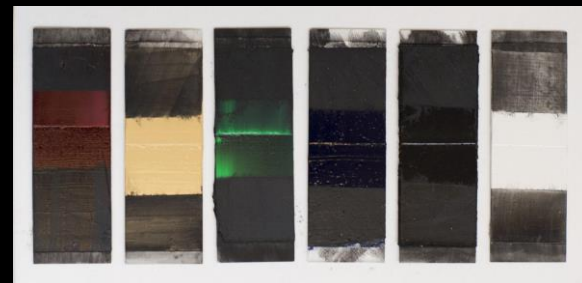
Momentive Velvesil Plus



Cyclopentasiloxane (and) C30-45 alkyl cetearyl dimethicone crosspolymer (and) PEG/PPG-20/23 dimethicone

Winsor & Newton Artisan Water Mixable Oil Colour

Soiled samples on glass slides

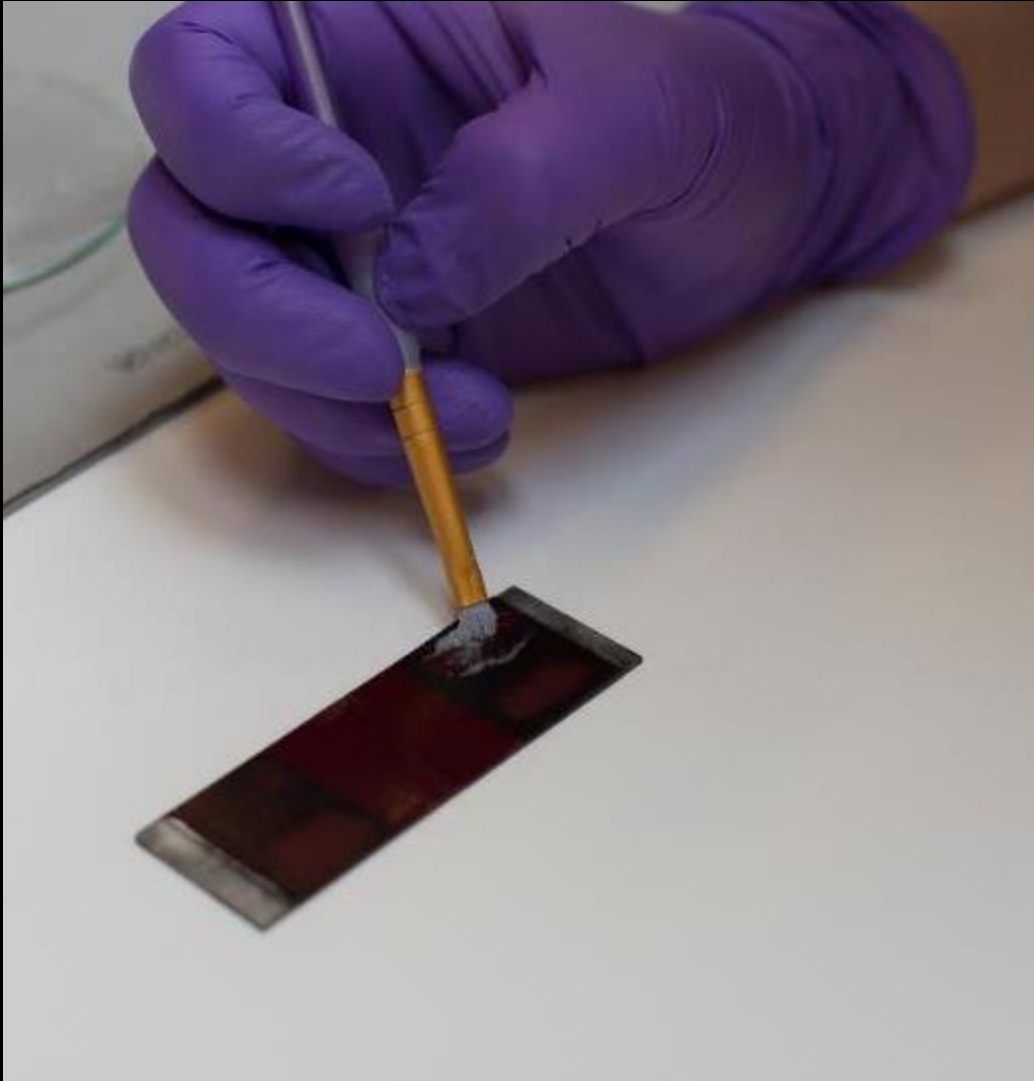




Emulsion recipes

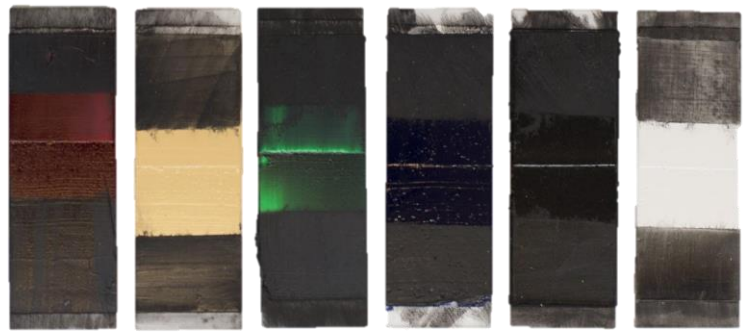
- Shin-Etsu KSG-350z with
40% aqueous solution (0.5% citric acid adjusted to pH 8 with TEA)
- Velvesil Plus with
15% aqueous solution (0.5% citric acid adjusted to pH 8 with TEA)

Cleaning protocol

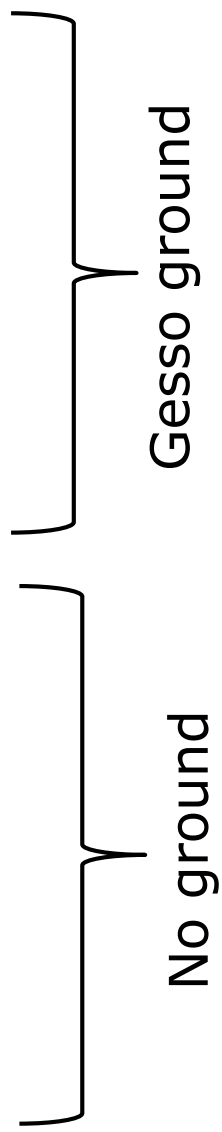
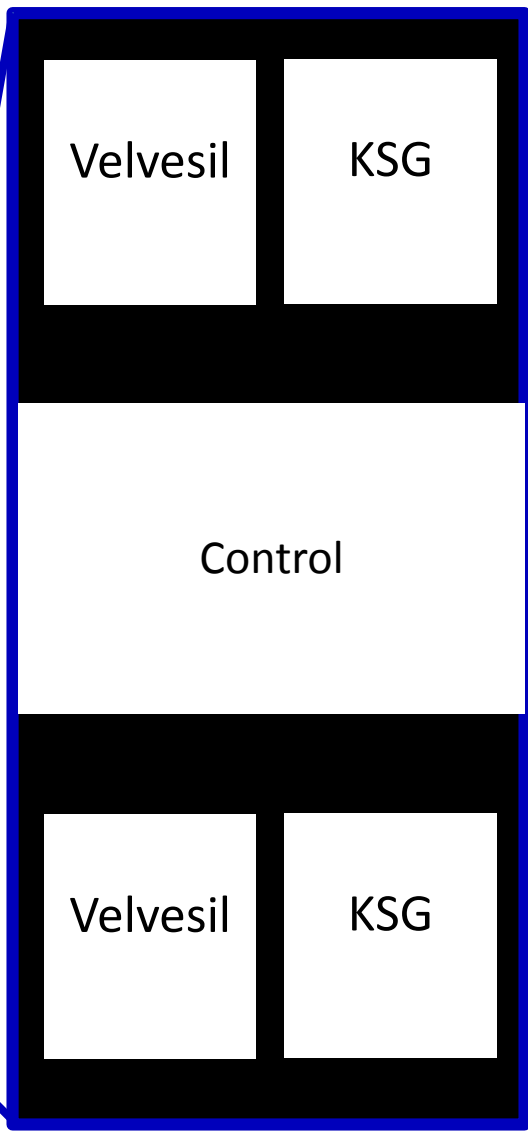
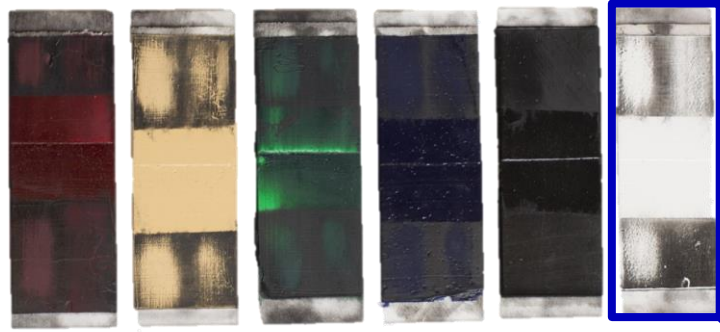


- Masking with D4
- Brush application and agitation of emulsion
- Emulsion removed
- Rinsed 2-3 times with hexamethyldisiloxane

Before



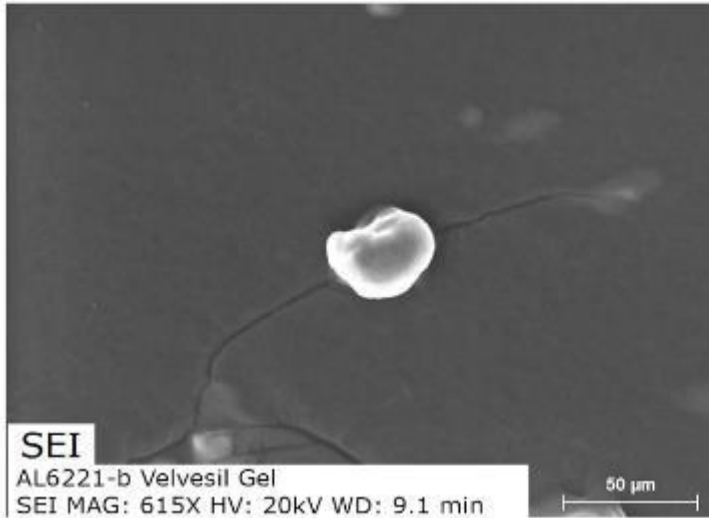
After



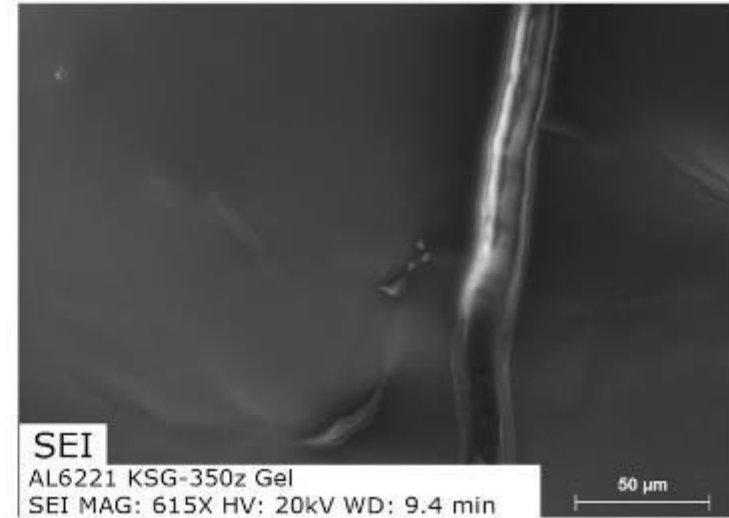
Scanning Electron Microscopy of Velvesil and KSG-350z, 615x

Secondary
Electron Imaging

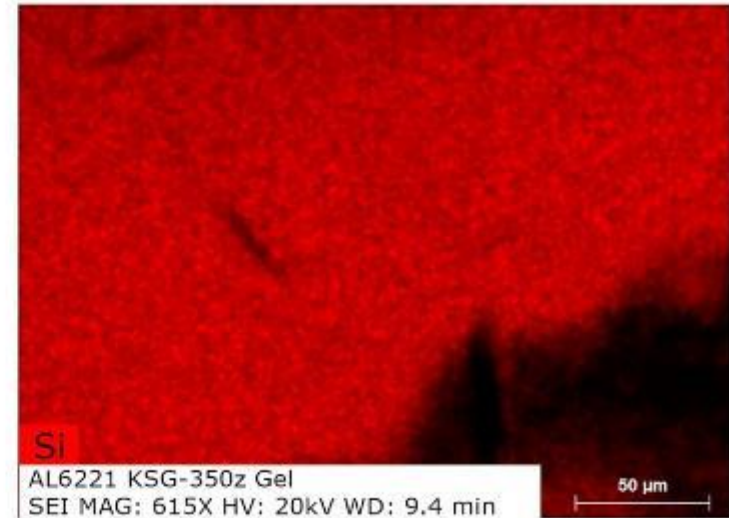
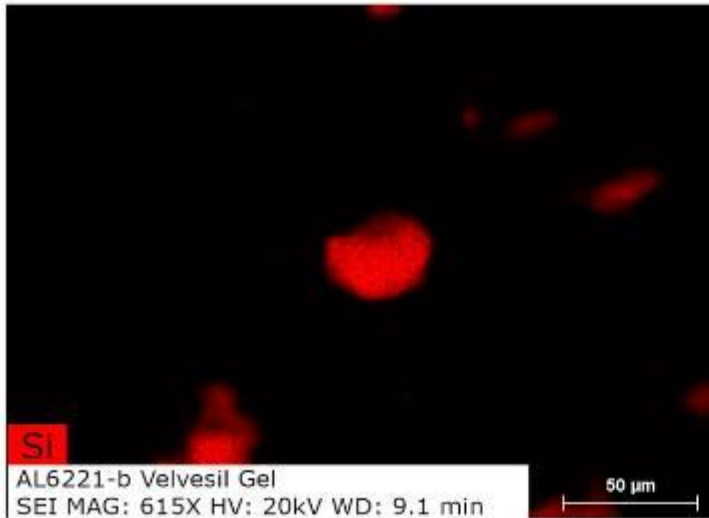
Velvesil Gel



KSG-350z Gel



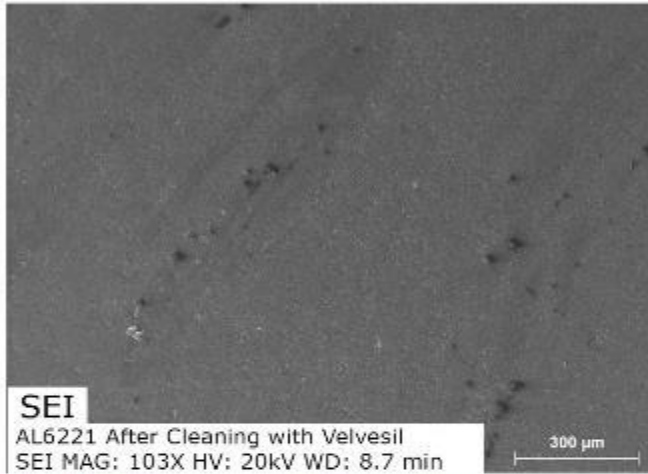
EDS Elemental
Mapping of Si



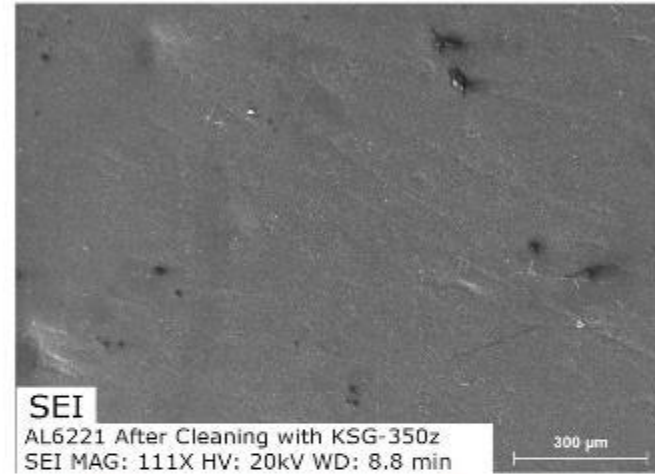
Scanning Electron Microscopy of the white paint-out after cleaning, 103x and 111x

Secondary
Electron Imaging

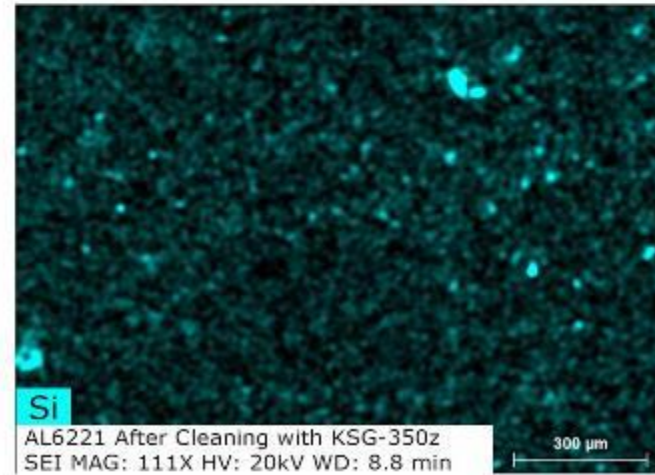
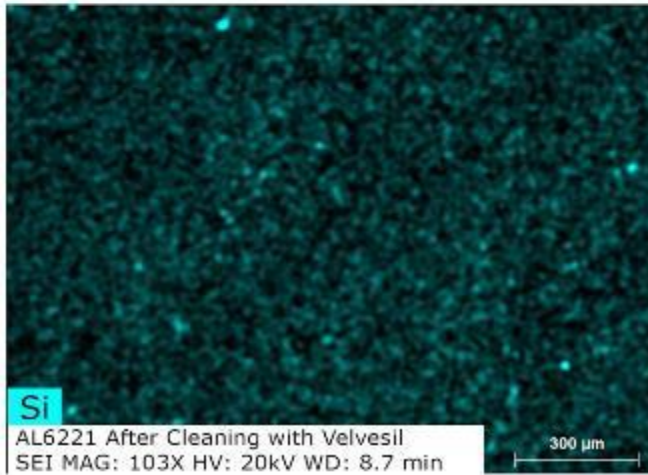
After Cleaning with Velvesil



After Cleaning with KSG-350z



EDS Elemental
Mapping of Si



Thank you!

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