A Comparative Study of Lightfastness in Oil-Based and Soy-Based Printmaking Inks in Works of Art on Paper
Lauren Buttle & Michael Doutre

Abstract
Soy-based printmaking inks are advertised as being able to produce brighter colours while maintaining the same quality as oil-based inks. Additionally, they are water-soluble and thus, easier and safer to dispose. The lightfast properties of soy-based ink by AKUA® (Intaglio) and traditional oil-based ink from Gamblin® were compared. This study is focused on the longevity and exhibition parameters necessary for conservators to accommodate such new works.

Experimental
• Four colours were used and printed planographically on Whatman Filter Paper No. 1 and Stonehenge Printmaking Paper
• Monoprints were cut into 1” x 2” samples
• Two samples of each colour and paper combination was subjected to artificial light aging in accordance with ASTM Standard D4303
• One sample of each colour and paper combination was subjected to approximately 2 months of natural aging
• Colour changes were measured with a spectrophotometer

Results and Discussion

• Aged soy samples seem visually indistinguishable from control samples
• Purple oil samples experienced some unexpected changes and appear metallic on the surface
• Spectrophotometric data proves that the overall colour shift is greater in oil-based ink samples than in soy-based ink samples in most cases; The white samples proved to be the only exception (both for artificially aged and naturally aged samples)
(Error bars show maximum possible variance in sample data)

Conclusions
Overall, the soy-based printmaking inks experienced less of a shift in colour than oil-based printmaking inks used in this study. This was true for both natural and artificial aging.

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