

OBJECT RESEARCH



Heinrich Kühn (Austrian, born Germany, 1866–1944)

Portrait of Stieglitz

1900/10

Gum bichromate print

Alfred Stieglitz Collection

AIC accession number: 1949.867

Stieglitz Estate number:

Inscriptions: No markings recto or verso

Dimensions: 23.9 x 19 cm (image/paper)

Print thickness: 0.129 mm

Surface sheen: Low gloss (3.2 GU @ 85°)

Paper tone: L*85.41, a*-0.51, b*10.37

Mount: Unmounted

Mount tone: N/A

**Ultraviolet-induced (UV) visible fluorescence
(recto):** None

X-ray fluorescence (XRF) spectrometry:
See below

Fourier transform infrared (FTIR) spectrometry:
N/A

TECHNICAL SUMMARY

This photograph is a gum bichromate print on a thin trimmed paper and is unmounted. A watermark, “PURE LINEN [illegible] BOND” is revealed when viewing the print in transmitted light, indicating that the paper substrate is rag-based. While Kuhn did not sign the print, there is an illegible embossed mark at the bottom left corner of the print. When the surface of the print is viewed under high magnification, the fibers from the paper are visible, since the pigmented gum arabic sits directly on the surface of the paper with no intermediary binder. The print is slightly glossy and does not fluoresce when exposed to long-wave UV radiation. Chromium and iron were detected in this print using XRF spectrometry. Chromium is used to sensitize the gum bichromate. While iron is not commonly used in gum bichromate printing, it could come from the greenish pigment or have been introduced into the paper during fabrication.

X-RAY FLUORESCENCE (XRF) SPECTROMETRY

XRF spectral readings were taken from the recto of the work and from the mount when available. The elements listed below have been positively identified in the work; elements in bold have been attributed to the processing of the print.

Print: **Cr**

Mount: Ca, Ti, Mn, Fe, Sr

The graph below shows XRF spectra for three distinct measurement areas on the print: the darkest, maximum-density image area (Dmax, purple); the lightest, minimum-density image area (Dmin, green); and the mount, when available (orange). The background spectrum (gray) represents the characteristic contribution of the instrument itself as measured on a Teflon reference and is included in order to discount irrelevant elements from the print's signature. Elements were identified based on the presence of their characteristic peaks. Analysis was performed with a Bruker/Keymaster Tracer III-V+ energy-dispersive handheld XRF analyzer, equipped with changeable Ti and Al filters and a Rh transmission target. Measurements were taken for 120 or 180 LT at 40 kV and 10 μ A. The spectrum below illustrates the significant peaks for this print in the energy range from 3 to 9 keV.

Figure 1. (right)
Locations of XRF measurements

Figure 2. (below)
XRF spectra from the Dmax, Dmin, mount,
and background signal produced by the
analyzer.

