

K0088 - Scientific analysis report, 1989

National Gallery of Art
Science Department

November 17, 1989

1939.1.274
Sano di Pietro
Madonna and Child with Saints and Angels
Greens Collection

We were asked to determine if a natural resin varnish had been applied to this painting. A sample was removed by swab with acetone by A. Wosnigwald. The material was identified by infrared spectroscopy as a methacrylate polymer. No trace of a natural resin was found.

Infrared spectroscopy was used to examine the sample. The swabs were soaked with acetone, the solution was agitated with a Fisher Touch Mixer, and the swabs were discarded. The solution was concentrated and spotted on a KBr pellet. The spectrum was run on a Matteson Alpha Cytosol Fourier Transform Infrared Spectrometer (64 scans at 4 cm⁻¹ resolution).

The following absorbances were noted in the spectrum, along with their intensities:

absorbance (cm ⁻¹)	intensity
2923	very strong
2852	strong
1733	strong
1457	moderate
1376	moderate
1244	moderate
1154	moderate
1067	weak
1024	weak
967	weak

The presence of a carbonyl absorbance at 1733 cm⁻¹ rules out the identification as a natural resin. Natural resins have carbonyl absorbances in the region 1730-1715 cm⁻¹. The position of the carbonyl and the presence of doublets at 1244 and 1154 cm⁻¹ suggests that the material is a methacrylate polymer. The resolution in the region from 1050-950 cm⁻¹ is not sufficient to identify which methacrylate polymer is present.

4/11/89
Date

Barbara Gillon Lomax
Organic Chemist

11/18/89
Date

Barbara Gillon Lomax
Head of Science Department

IDENTIFIER

DOC14370

ARCHIVAL ITEM TYPE

Conservation Report

CREATOR

National Gallery of Art, Washington, District of Columbia

DATE

1989

CITATION

National Gallery of Art, Painting Conservation Department Records

1 RELATED ART OBJECT



K88

Sano di Pietro

The Crucifixion

National Gallery of Art, Washington, District of Columbia

RECORD LINK

KRESS COLLECTION DIGITAL ARCHIVE

<https://kress.nga.gov/Detail/archival/DOC14370>