

ANALYTICAL RESULTS – OBJECT 11

PARTNER:	UNITO - CCR
TYPE OF WORK:	Painted Benches (Object 11)
COUNTRY:	Italy
CITY:	Turin
ADDRESS:	Piazza Moncenisio
OWNER / CUSTODIAN:	MAU - Museum of Urban Art
ARTIST:	Vito Navolio
TITLE OF THE WORK:	Panchine d'artista
YEAR OF EXECUTION:	2010
MATERIALS:	Brush painting on wood

SAMPLING POINTS LOCATION



TABLE OF ANALYTICAL RESULTS

	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results
<i>Pollock's Bench (E)</i>											
1	Yellow paint of seatback	X		ATR-FTIR	PY151	ATR-FTIR Py-GC/MS	Alkyd				
2	Blue paint of the seatback	X		ATR-FTIR SEM-EDS	Silicates, Barite	ATR-FTIR	Alkyd				
3	Red paint of the seatback	X		ATR-FTIR SEM-EDS	Silicates, Ti white	ATR-FTIR Py-GC/MS	Alkyd				
4	Shiny black paint of the seatback	X		ATR-FTIR SEM-EDS	Barite, silicate	ATR-FTIR	Alkyd				
5	White paint of the seatback	X		ATR-FTIR	Silicates, Zn white	ATR-FTIR Py-GC/MS	Alkyd				
6	White paint of the seatback background	X		ATR-FTIR	Silicates	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
7	Shiny black paint of the seatback background	x		ATR-FTIR	Silicates	ATR-FTIR	Alkyd				
8	White paint of the	X		ATR-FTIR SEM-EDS	Zn white, silicates	ATR-FTIR	Alkyd				

	seatback profile										
9	Cross section	X		See pictures below							
10	Silver paint of seat bench	X		ATR-FTIR	Talc, Zn white	ATR-FTIR	Alkyd				
11	Green paint of the entire bench	X		ATR-FTIR	Calcite, silicates	ATR-FTIR	Acrylic			ATR-FTIR	oxalates
12	Opaque black paint of the seat profile	X		ATR-FTIR	Calcite, silicates	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
12a	Shiny black paint of the seat profile	X		ATR-FTIR	Calcite	ATR-FTIR	Alkyd			ATR-FTIR	oxalates
13	Cross Section	X									
14	White paint of the seat bench background	X		ATR-FTIR	Silicates, calcite	ATR-FTIR	Alkyd			ATR-FTIR	oxalates

* mortars, stone, metal ect.

** Additional research or analyzes, for example: aging tests, colorimetry, pH...

	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results

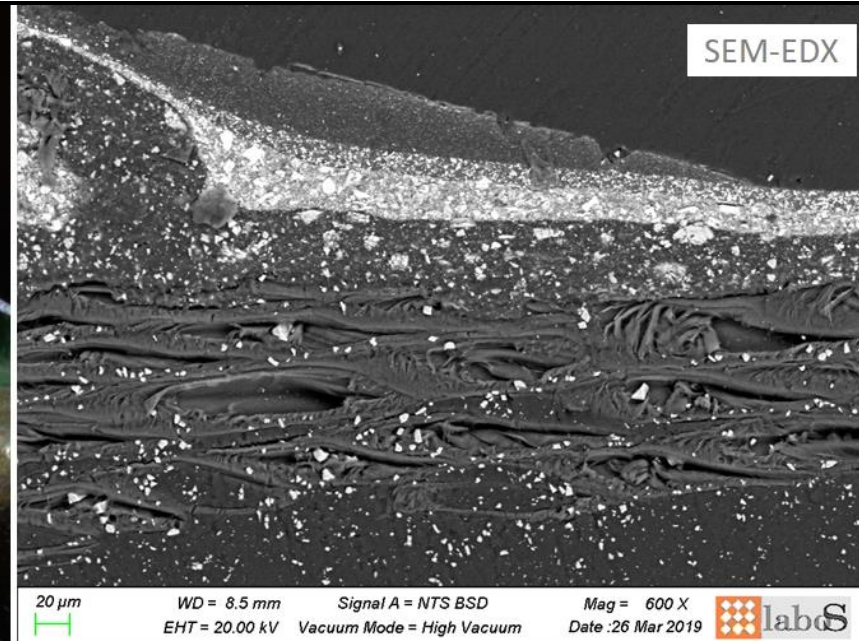
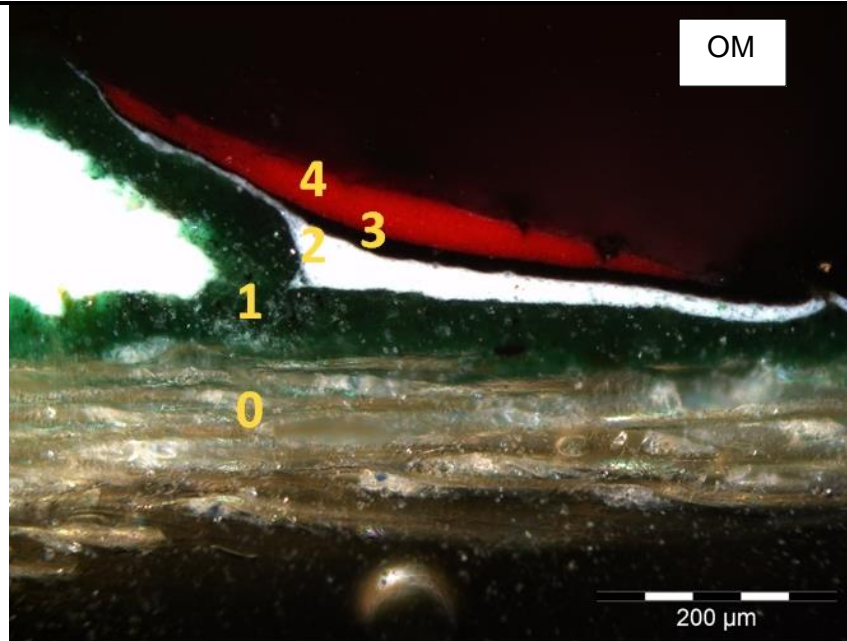
<i>Lichtenstein's Bench (I)</i>											
1	Black paint of seat bench			ATR-FTIR	Silicates, calcite	ATR-FTIR Py-GC/MS	Alkyd			ATR-FTIR	oxalates
2	Cross Section										
3	Red paint of seat bench			ATR-FTIR	Kaolin, calcite	ATR-FTIR Py-GC/MS	Alkyd			ATR-FTIR	oxalates
4	Yellow paint of seat bench			ATR-FTIR	PY 151, silicates, calcite	ATR-FTIR Py-GC/MS	Alkyd				
5	White paint of seat bench			ATR-FTIR	Silicates	ATR-FTIR Py-GC/MS	Alkyd			ATR-FTIR	oxalates
6	Green paint of the entire bench			ATR-FTIR	Prussian blue (PB 27), calcite	ATR-FTIR	Styrene-Acrylic			Py-GC/MS	Alkyd
	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results
<i>Dali's Bench (M)</i>											
1	Transparent paint of the seatback			ATR-FTIR	silicates	ATR-FTIR	Perfluorinated polyurethane				

2	White paint of the seatback			ATR-FTIR	silicates					ATR-FTIR	Perfluorinated polyurethane
3	White paint of the seatback			ATR-FTIR	silicates					ATR-FTIR	Perfluorinated polyurethane

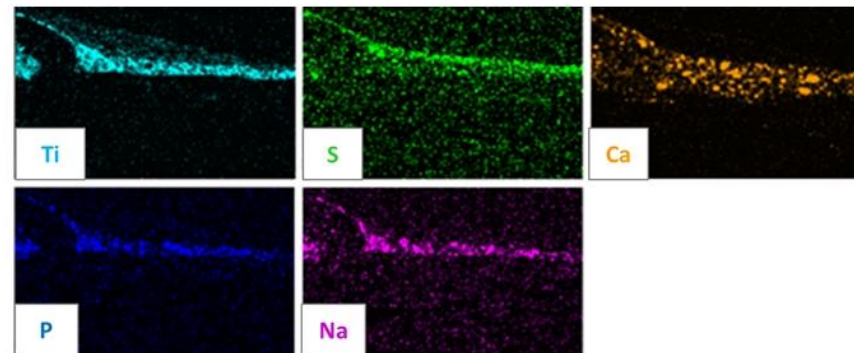
	Name of the sample	Original materials	No original materials	Pigments / dyes		Organic binders		Type of support*		Other**	
				Identification methods	Results	Identification methods	Results	Identification methods	Results	Identification methods	Results
<i>Klee's Bench (P)</i>											
1	Cross Section										
2	Protective varnish			ATR-FTIR	Quartz	ATR-FTIR	Perfluorinated polyurethane				
3	Red paint of seat bench			ATR-FTIR	Silicates					ATR-FTIR	Perfluorinated polyurethane
4	Black paint of seat bench profile			ATR-FTIR	Silicates					ATR-FTIR	Perfluorinated polyurethane

STRATIGRAPHY OF THE MICROSAMPLES

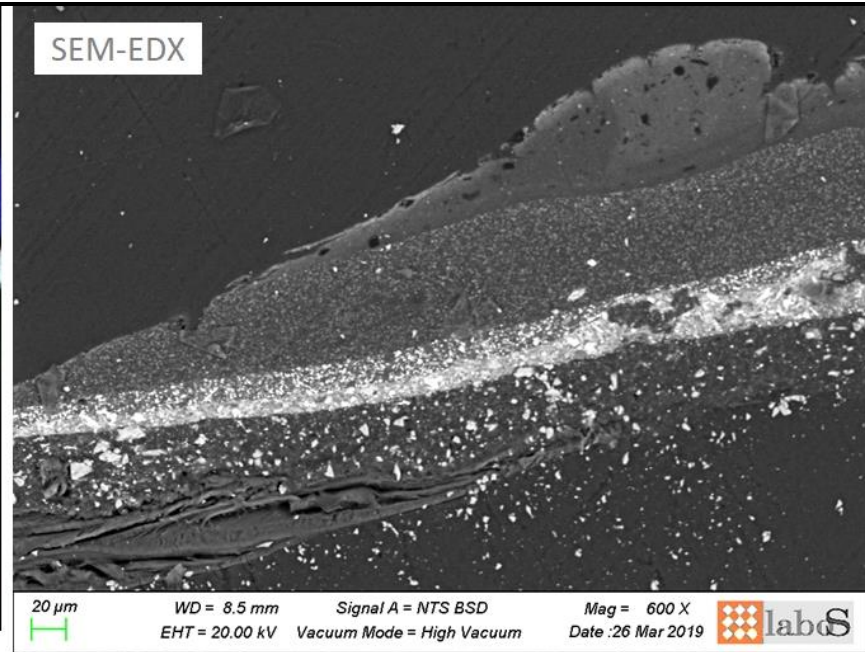
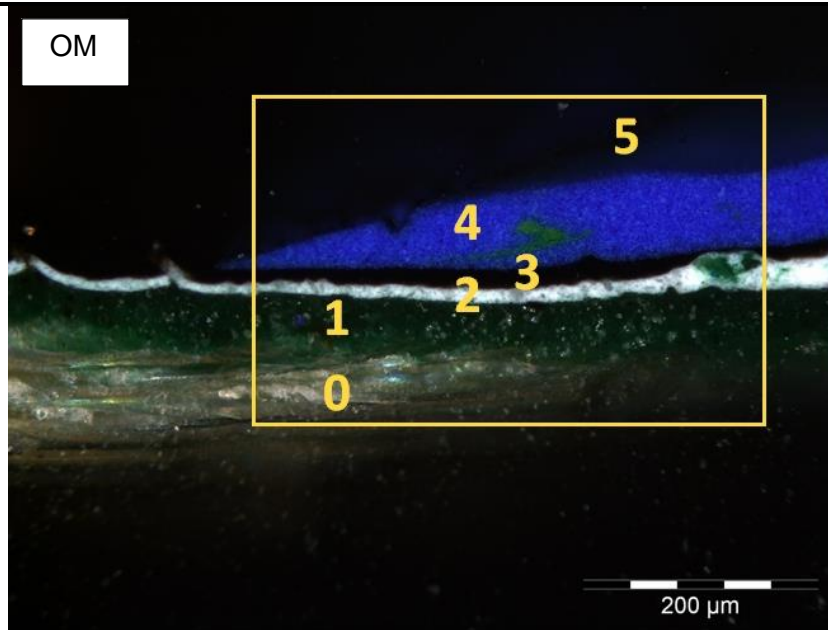
Sample n°: OBJ11_9



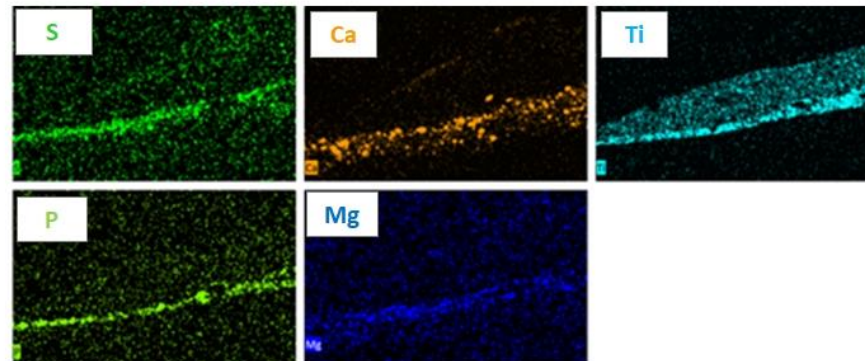
0 – support	wood
1 – green (bench)	Ca, Si, Fe, (Cl)
2 – white	Ti, Ca, Si, P, Al, Na, (Mg), (S)
3 – black	Ba, S, Ca, Mg, (Al)
4 – red	organic? Ti, Cl, (Si)



Sample n°: OBJ11_9

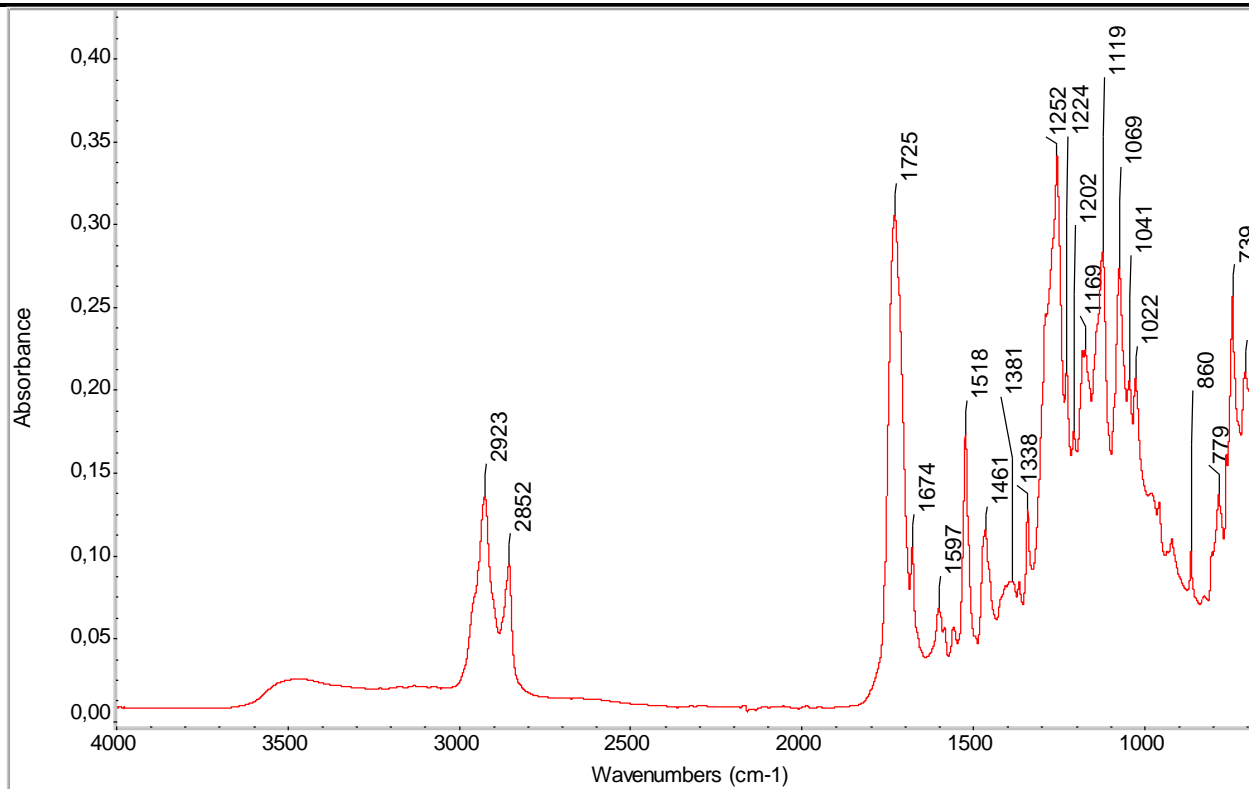


0 – support	wood
1 – green (bench)	Si, Ca, Fe, (Al), (Cl)
2 – white	Ti, Ca, Si, P, Al, Mg, Zn, (S)
3 – black	Ba, S, Si, Mg, (Ca)
4 – blue	organic? Ti
5 – deposit	Si, Al



FOURIER-TRANSFORM INFRARED SPECTROSCOPY (FTIR)

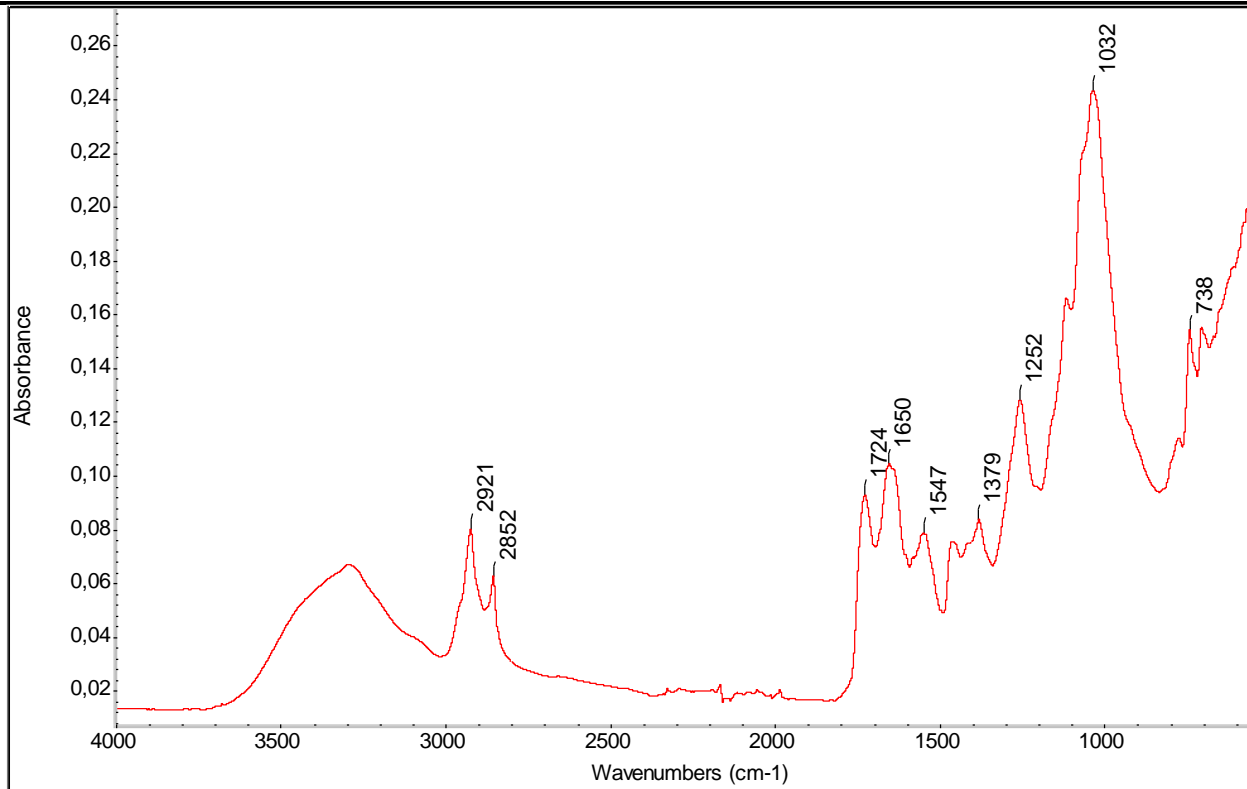
Sample n°: OBJ 11E-1



ASSIGNMENTS:

Alkyd: 2852 cm⁻¹, 1725 cm⁻¹, 1597 cm⁻¹,
 1583 cm⁻¹, 1465 cm⁻¹, 1260 cm⁻¹, 1116 cm⁻¹,
 1065 cm⁻¹, 742 cm⁻¹, 702 cm⁻¹

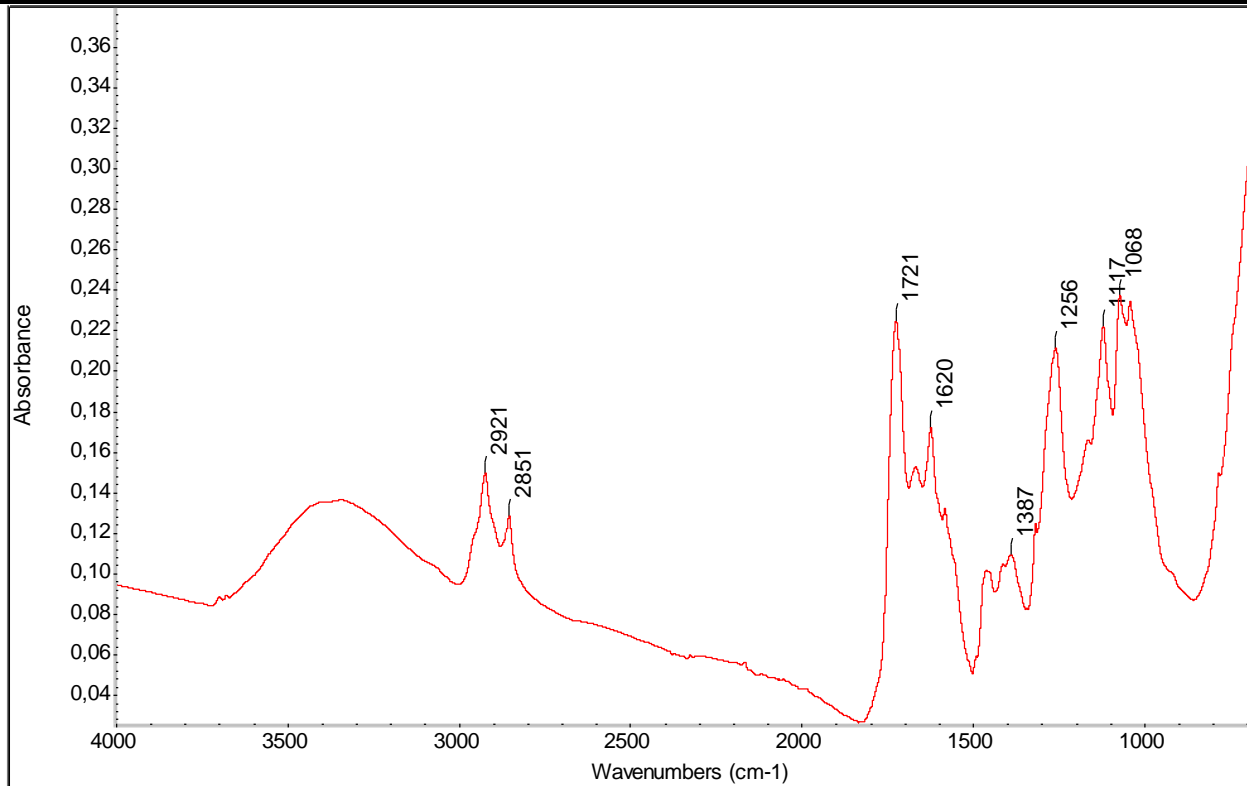
Sample n°: OBJ 11E-12



ASSIGNMENTS:

Alkyd: 2921 cm⁻¹, 2852 cm⁻¹, 1724 cm⁻¹,
1604 cm⁻¹, 1584 cm⁻¹, 1455 cm⁻¹, 1252 cm⁻¹,
1113 cm⁻¹, 1069 cm⁻¹, 738 cm⁻¹, 707 cm⁻¹

Sample n°: OBJ 111-5

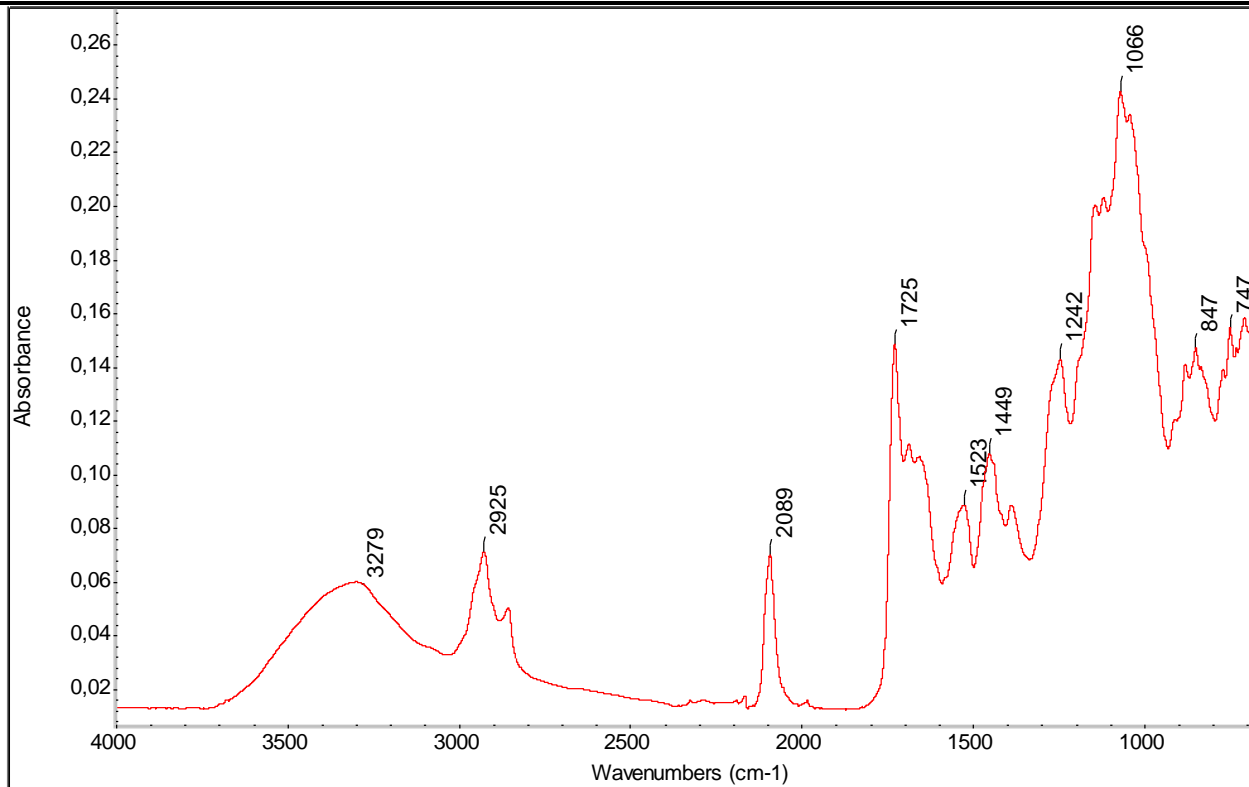


ASSIGNMENTS:

Alkyd: 2921 cm⁻¹, 2851 cm⁻¹, 1721 cm⁻¹,
1457 cm⁻¹, 1256 cm⁻¹, 1117 cm⁻¹, 1068 cm⁻¹,

Silicates: 900-1200 cm⁻¹

Sample n°: OBJ 111-6



ASSIGNMENTS:

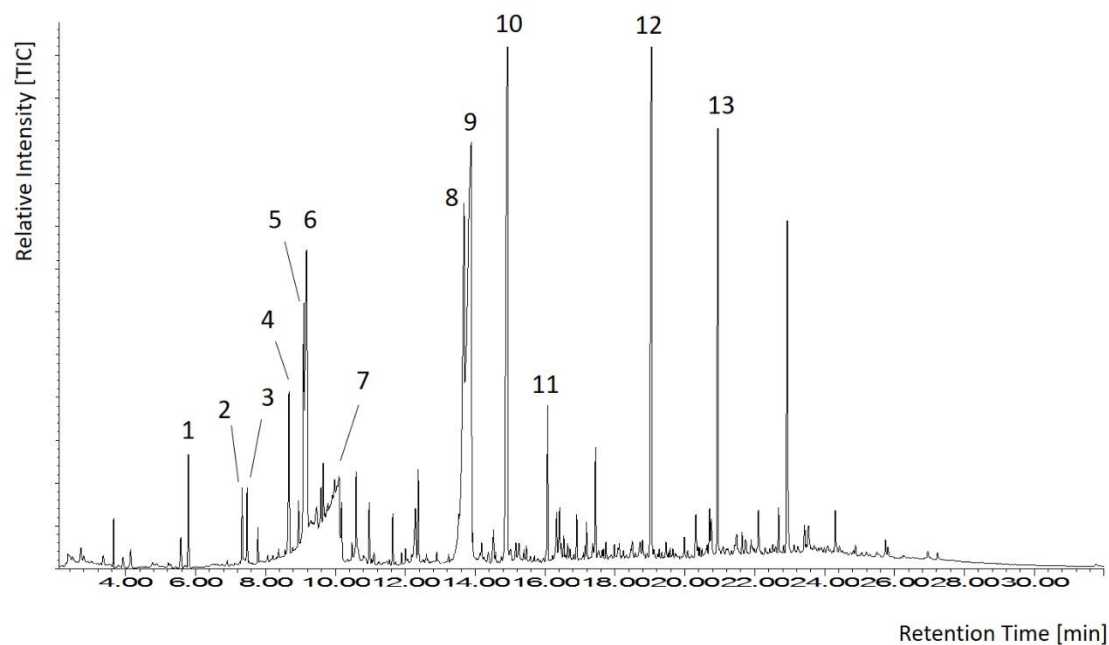
Acrylic: 2854 cm⁻¹, 1725 cm⁻¹, 1449 cm⁻¹, 1386 cm⁻¹, 1242 cm⁻¹, 1144 cm⁻¹, 1067 cm⁻¹, 847 cm⁻¹, 747 cm⁻¹

Alkyd: 2952 cm⁻¹, 2854 cm⁻¹, 1725 cm⁻¹, 1602 cm⁻¹, 1584 cm⁻¹, 1449 cm⁻¹, 1386 cm⁻¹, 1242 cm⁻¹, 1067 cm⁻¹, 747cm⁻¹, 708 cm⁻¹

Prussian Blue: 2090 cm⁻¹

PYROLYSIS-GAS CHROMATOGRAPHY/MASS SPECTROMETRY

Sample n°: OBJ 11E-1



Peak N.	Assignment	Rt (min)
1	hexanoic acid, methyl ester	5.8
2	6-heptenoic acid, methyl ester	7.3
3	heptanoic acid, methyl ester	7.5
4	benzoic acid, methyl ester	8.7
5	nonanoic acid, methyl ester	9.1
6	1,3-dimethoxy-2,2-bis(methoxymethyl)-propane	9.2
7	3-methoxy-2,2-bis(methoxymethyl)-propanol	10.2
8	octandioic acid, dimethyl ester	13.7
9	dimethyl phthalate	13.9
10	nonandioic acid, dimethyl ester	14.9
11	decandioic acid, dimethyl ester	16.1
12	hexadecanoic acid, methyl ester	19.0
13	octadecanoic acid, methyl ester	20.9

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