

Supplementary Materials



Figure S1: Gradual colour change observed in the Dia-bags from unaged to two weeks and three weeks of thermal aging at 70 °C

Peak #	RT min	Compound Name	m/z
1	3.52	Butadiene	54
2	3.74	1-Pentene	55 , 70
3	3.97	1,3-Cyclopentadiene	66
4	4.33	1-Hexene	56 , 69, 84
5	5.33	Benzene	51, 78
6	5.87	1-Heptene	55, 56 , 70, 83, 98
7	7.92	Toluene	51, 65, 74, 89, 91
8	8.57	1-Octene	55 , 57, 70, 83, 97, 112, 113
9	10.44	Chlorobenzene	51, 77, 112
10	10.88	Ethylbenzene	51, 65, 77, 91 , 103, 106
11	11.20	o-Xylene	51, 65, 77, 91 , 103, 106
12	11.81	1-Nonene	56 , 69, 83, 97, 111, 126
13	11.92	Styrene / Benzenepropanoyl bromide	51, 78, 104
14	14.92	1-Decene	55 , 70, 83, 97, 111, 140
15	16.65	Indene	50, 63, 74, 76, 89, 109, 116
16	18.07	o-Cresol	51, 77, 79, 107, 108
17	19.25	Benzene, 1-butenyl	51, 65, 77, 91, 105, 117 , 132
18	19.53	1H-Indene, 3-methyl-	51, 64, 77, 91, 105, 115, 128, 130
19	19.75	1H-Indene, 1-methyl-	51, 64, 77, 91, 105, 115, 128, 130
20	19.86	Naphthalene, 1,2,3,4-tetrahydro-	51, 65, 77, 91, 104 , 115, 128, 132
21	19.99	Naphthalene, 1,4-dihydro-	51, 64, 77, 89, 102, 115, 128, 130
22	20.61	Naphthalene	51, 63, 75, 102, 128
23	22.14	Undecane, 2,4-dimethyl-	51 , 71, 85, 99, 113, 126, 141, 155, 169, 184
24	22.47	Heptadecane	57 , 71, 85, 99, 113, 127, 141, 155, 169, 183, 197, 240
25	23.42	Naphthalene, 1-methyl-	57, 63, 71, 87, 89, 115, 138, 142
26	24.47	Phthalic anhydride	50, 76 , 104, 148, 149
27	25.27	Diphenyl	76, 115, 154
28	25.34	Tetradecane	57 , 71, 85, 99, 113, 127, 141, 155, 169, 198
29	27.23	Heptadecane	57 , 71, 85, 99, 113, 127, 141, 155, 169, 183, 197, 240
30	29.62	Diethyl Phthalate (DEP)	65, 76, 93, 105, 121, 149 , 177, 222
31	29.74	Fluorene	63, 82, 115, 139, 166
32	31.39	Heneicosane	57 , 71, 85, 99, 113, 127, 141, 155, 169, 183, 197, 211, 225, 296
33	33.24	Benzoic acid, octyl ester	70, 77, 97, 105, 123 , 135, 163
34	33.71	Anthracene	51, 63, 76, 89, 115, 139, 152, 163, 178
35	34.49	Diisobutyl phthalate (DIBP)	57, 76, 93, 104, 121, 149 , 167, 205, 223
36	36.12	Bibutyl phthalate (DBP)	76, 104, 149 , 205, 223, 278
37	36.19	Palmitic acid	60, 73 , 83, 129, 143, 171, 185, 199, 241, 284
38	36.69	Benzoic acid, octyl ester	56 , 77, 83, 105, 123, 163
39	39.28	Stearic acid	60, 73 , 83, 101, 129, 143, 157, 171, 185, 213, 227, 256
40	41.80	Dihexyl phthalate (DHP)	55, 76, 85, 104, 121, 132, 149 , 167, 233, 251
41	42.85	Triphenyl phosphate (TPP)	51, 65, 77, 94, 115, 141, 169, 215, 233, 249, 326
42	43.94	Cresyl diphenyl phosphate (CDP)	65, 77, 108, 115, 152, 165, 184, 229, 247, 263, 340
43	44.35	Cresyl diphenyl phosphate (CDP)	65, 77, 108, 115, 152, 165, 184, 229, 247, 263, 340
45	44.48	Bis(2-ethylhexyl)phthalate (DEHP)	57, 70, 83, 104, 121, 149 , 167, 233, 251, 279
45	44.04	Dicresyl phenyl phosphate (DCPP)	65, 77, 91, 153, 165, 198, 229, 247, 261, 354 , 355
46	45.54	Dicresyl phenyl phosphate (DCPP)	65, 77, 91, 153, 165, 198, 229, 247, 261, 354 , 355
47	46.18	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368
48	46.87	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368
49	47.41	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368
50	47.96	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368

Table S1: Main pyrolysis products obtained by Py-GC/MS of the investigated **artwork's cover-plate** at their corresponding retention time (RT min) and mass to charge ratio (*m/z*) (base peak marked in bold).

Peak #	RT min	Compound Name	m/z
1	3.52	Butadiene	54
2	3.68	1-Pentene	55, 70
3	3.98	1,3-Cyclopentadiene	66
4	4.29	1-Hexene	56, 69, 84
5	5.31	Benzene	51, 78
6	5.84	1-Heptene	55, 56 , 70, 83, 98
7	7.90	Toluene	51, 65, 74, 89, 91
8	8.63	1-Octene	55 , 57, 70, 83, 97, 112, 113
9	10.43	Chlorobenzene	51, 77, 112
10	10.71	1-Chlorohexane	55, 69, 71, 84, 91 , 93
11	10.86	Ethylbenzene	51, 65, 77, 91 , 103, 106
12	11.78	o-Xylene	51, 65, 77, 91 , 103, 106
13	11.81	1-Nonene	56 , 69, 83, 97, 111, 126
14	11.91	Styrene	51, 78, 104
15	14.99	1-Decene	55 , 70, 83, 97, 111, 140
16	16.44	Indene	50, 63, 74, 76, 89, 109, 116
17	17.03	1-Chlorooctane	55, 57, 69, 83, 91 , 105, 119
18	17.61	1-Octanol	55 , 56, 70, 84, 95, 97, 112
19	19.25	Benzene, 1-butenyl	51, 65, 77, 91, 105, 117 , 132
20	19.54	1H-Indene, 3-methyl-	51, 64, 77, 91, 105, 115, 128, 130
21	19.75	1H-Indene, 1-methyl-	51, 64, 77, 91, 105, 115, 128, 130
22	19.86	Naphthalene, 1,2,3,4-tetrahydro-	51, 65, 77, 91, 104 , 115, 128, 132
23	19.99	Naphthalene, 1,4-dihydro-	51, 64, 77, 89, 102, 115, 128, 130
24	20.61	Naphthalene	51, 63, 75, 102, 128
25	21.40	Benzenecarboxylic acid	51, 77, 105 , 122
26	22.34	1-Chlorodecane	55, 57, 69, 83, 91 , 105, 107, 119
27	22.70	1-Decanol	55 , 70, 97, 112, 129, 140
28	23.42	Naphthalene, 1-methyl-	57, 63, 71, 87, 89, 115, 138, 142
29	24.47	Phthalic anhydride	50, 76 , 104, 148, 149
30	25.34	Diphenyl	76, 115, 154
31	26.39	Hexane, 1,1'-[methylenebis(oxy)]bis-	57, 71, 83, 85 , 96, 115
32	27.23	Heptadecane	57 , 71, 85, 99, 113, 127, 141, 155, 169, 183, 197, 240
33	29.33	Benzoic acid, hexyl ester	56 , 69, 77, 85, 105, 123, 135
34	29.62	Diethyl Phthalate (DEP)	65, 76, 93, 105, 121, 149 , 177, 222
35	29.74	Fluorene	63, 82, 115, 139, 166
36	33.24	Benzoic acid, octyl ester	70, 77, 97, 105, 123 , 135, 163
37	33.71	Anthracene	51, 63, 76, 89, 115, 139, 152, 163, 178
38	33.95	Octane, 1,1'-oxybis-	57 , 71, 84, 97, 111, 129, 143
39	36.74	Benzoic acid, octyl ester	56 , 77, 83, 105, 123, 163
40	37.20	Tritetracontane	57 , 71, 85, 97, 111, 127, 141, 155, 169, 197, 239
41	41.82	Dihexyl phthalate (DHP)	55, 76, 85, 104, 121, 132, 149 , 167, 233, 251
42	42.85	Triphenyl phosphate (TPP)	51, 65, 77, 94, 115, 141, 169, 215, 233, 249, 326
43	43.94	Cresyl diphenyl phosphate (CDP)	65, 77, 108, 115, 152, 165, 184, 229, 247, 263, 340
44	44.42	Bis(2-ethylhexyl)phthalate (DEHP)	57, 70, 83, 104, 121, 149 , 167, 233, 251, 279
45	44.97	Dicresyl phenyl phosphate (DCPP)	65, 77, 91, 153, 165, 198, 229, 247, 261, 354 , 355
46	45.37	Dicresyl phenyl phosphate (DCPP)	65, 77, 91, 153, 165, 198, 229, 247, 261, 354 , 355
47	46.02	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368
48	46.48	Tri-m-cresyl phosphate (TCP)	51, 65, 77, 91, 108, 165, 179, 195, 211, 243, 261, 277, 291, 354, 368
49	46.99	Di-n-octyl phthalate (DnOP)	57, 104, 149 , 167, 279
50	47.09	Phthalic acid, decyl hexyl ester	57, 85, 149 , 167, 251, 307

Table S2: Main pyrolysis products obtained by Py-GC/MS of the investigated **artwork's bag** at their corresponding retention time (RT min) and mass to charge ratio (*m/z*) (base peak marked in bold).

Peak #	RT min	Compound Name	m/z
1	3.52	Butadiene	54
2	3.71	Isoprene	53, 67
3	3.81	1,3-Pentadiene, (E)-	53, 67
4	3.88	1,3-Cyclopentadiene	66
5	3.98	4-Penten-1-ol	53, 56, 67 , 85
6	4.24	1-Hexene	56 , 69, 84
7	5.25	Benzene	51, 78
8	5.79	1-Heptene	55, 56 , 70, 83, 98
9	7.84	Toluene	51, 65, 74, 89, 91
10	8.42	2-Ethylhexene	55, 70 , 83, 85, 95, 112
11	8.50	1-Octene	55 , 57, 70, 83, 97, 112, 113
12	10.75	1-Pentanol, 2-ethyl-4-methyl-	57 , 69, 83, 97, 112
13	11.54	3,7-Dimethyl-1-octene	55 , 69, 84, 97, 111, 140
14	11.96	1-Octanol, 3,7-dimethyl-	55 , 69, 84, 97, 112, 125, 140
15	12.08	1-Octanol, 2-butyl-	57 , 71, 85, 97, 111, 125, 140
16	12.26	3,7-Dimethyl-1-octene	55 , 70, 83, 97, 111, 113, 125, 140
17	12.45	4-Propylheptane / 2-Ethylhexanol	55, 57 , 70, 83, 84, 97, 98, 111, 112
18	12.67	1-Decene	55 , 70, 83, 97, 111, 140
19	12.83	2-Undecene, 4,5-dimethyl-,	55, 69 , 83, 95, 98, 111, 126, 168
20	13.00	3,4-Dimethyl-1-octene	55 , 69, 84, 97, 112, 140
21	13.19	4-Isopropylheptane	57 , 98, 142
22	13.45	5-Tridecene, (E)	55 , 69, 83, 97, 111, 125, 139, 154, 182
23	13.69	Ethylhexanol	55, 57 , 70, 83, 84, 98, 99, 112
24	15.06	1-Decene	55 , 70, 83, 97, 111, 140
25	15.34	Phenol	66, 94
26	16.75	Indene	50, 63, 74, 76, 89, 109, 116
27	19.97	Naphthalene, 1,4-dihydro-	51, 64, 77, 89, 102, 115, 128, 130
28	20.22	1-Hexene, 4,4-diethyl-	57 , 69, 99
29	20.57	Naphthalene	51, 63, 75, 102, 128
30	24.68	Naphthalene, 1-methyl-	57, 63, 71, 87, 89, 115, 138, 142
31	26.35	Diphenyl	76, 115, 154
32	34.33	Anthracene	51, 63, 76, 89, 115, 139, 152, 163, 178
33	35.67	Palmitic acid, methyl ester	60, 73 , 83, 129, 143, 171, 185, 199, 241, 284
34	38.41	Oleic acid, methyl ester	55 , 69, 83, 97, 110, 125, 141, 166, 180, 222, 264
35	38.77	Stearic acid, methyl ester	60, 73 , 83, 101, 129, 143, 157, 171, 185, 213, 227, 256, 298
36	43.04	Triphenyl phosphate (TPP)	51, 65, 77, 94, 115, 141, 169, 215, 233, 249, 326
37	43.97	Phenyl palmitate	57, 71, 94 , 109, 137, 151, 221, 239, 267, 332
38	46.71	Phenyl stearate	57, 71, 94 , 109, 136, 267, 360

Table S3: Main pyrolysis products obtained by Py-GC/MS of the investigated **Jedi plate** at their corresponding retention time (RT min) and mass to charge ratio (*m/z*) (base peak marked in bold).

Peak #	RT min	Compound Name	m/z
1	3.52	Butadiene	54
2	3.73	Isoprene	53, 67
3	3.90	1,3-Cyclopentadiene	66
4	4.26	1-Hexene	56 , 69, 84
5	5.25	Benzene	51, 78
6	7.94	Toluene	51, 65, 74, 89, 91
7	8.44	2-Ethylhexene	55, 70 , 83, 112
8	8.69	3-Ethyl-3-hexene	55 , 70, 83, 112
9	9.05	2-Heptene, 3-methyl-	55, 70 , 83, 112
10	9.23	2-Octene, (E)-	55, 70 , 83, 112
11	11.18	Ethylbenzene	51, 65, 77, 91 , 103, 106
12	12.19	o-Xylene	51, 65, 77, 91 , 103, 106
13	14.39	3-Chloro-3-methylheptane	55, 63, 70 , 83, 91, 112, 119
14	16.02	1-Chloro-2-ethylhexane	57 , 99, 121
15	17.21	Ethylhexanol	55, 57 , 70, 83, 98, 112
16	20.14	Naphthalene, 1,2,3,4-tetrahydro-	51, 65, 77, 91, 104 , 115, 128, 132
17	21.20	Naphthalene	51, 63, 75, 102, 128
18	23.84	Naphthalene, 1-methyl-	57, 63, 71, 87, 89, 115, 138, 142
19	24.13	Naphthalene, 2-methyl-	63, 115, 141, 142
20	24.46	Phthalic anhydride	50, 76 , 104, 148, 149
21	32.06	2-Ethylhexyl benzoate	55, 70, 83, 92, 105 , 112, 123, 135, 149
22	35.50	Hexadecanenitrile	57 , 70, 83, 97, 110, 124, 138, 152, 166, 180, 194, 208
23	38.59	Octadecanenitrile	57 , 70, 97, 110, 124, 138, 152, 166, 180, 208, 222, 236
24	44.34	Bis(2-ethylhexyl)phthalate (DEHP)	57, 70, 83, 104, 121, 149 , 167, 233, 251, 279

Table S4: Main pyrolysis products obtained by Py-GC/MS of the investigated **Dia-bag** at their corresponding retention time (RT min) and mass to charge ratio (*m/z*) (base peak marked in bold).