Supplementary Material

Table S1. Degradation temperature of HES and its individual components.

Components	Initial loss			Main loss I			Main loss II		
	Onset (ºC)	Endset (ºC)	% loss	Onset (ºC)	Endset (ºC)	% loss	Onset (ºC)	Endset (ºC)	% loss
Camphor	40.56	63.08	2.05	127.83	179.08	98.04	____		
Borneol	78.35	92.83	1.17	135.68	184.20	99.30			
Octanoic acid (C8)	84.17	106.81	1.81	150.21	182.44	97.87			
Decanoic acid (C10)	99.54	112.27	0.44	166.07	203.28	98.38			
Dodecanoic acid (C12)	131.74	144.09	0.99	214.28	256.47	98.41			
Oleic acid (C18)	123.91	183.76	0.12	245.45	280.81	96.45			
1-octanol (C8OH)	58.50	67.05	1.71	112.74	144.65	97.19			
1-decanol (C10OH)	74.64	96.54	1.56	139.30	172.78	98.37			
1-dodecanol (C12OH)	104.38	127.22	1.95	179.52	222.73	97.79			
Oleyl alcohol (C18OH)	130.71	163.94	0.83	213.65	251.77	95.15			
HES 1	40.43	51.63	2.03	121.62	179.01	97.46			
HES 2	52.34	62.00	2.56	101.95	143.07	65.73	169.39	186.44	29.30
HES 3	59.08	65.44	1.76	111.01	158.59	68.09	193.39	213.77	29.43
HES 4	72.34	86.30	2.75	134.81	207.48	49.51	277.24	297.43	42.33
HES 5	40.06	63.04	1.63	111.15	141.54	96.78			
HES 6	45.13	66.74	1.43	116.95	158.76	98.06			
HES 7	52.68	59.83	1.27	112.89	159.45	62.58	166.98	182.58	35.02
HES 8	55.71	66.07	1.69	102.79	151.17	39.37	216.45	250.08	56.04
HES 9	79.75	96.64	1.94	139.62	180.78	97.36			
HES 10	78.66	96.39	1.91	158.04	199.93	97.06			
HES 11	71.62	96.71	1.72	119.73	162.73	30.98	194.49	221.43	65.58
HES 12	78.62	95.80	0.51	116.26	159.15	21.23	247.54	278.04	76.19
HES 13	66.89	76.72	1.77	111.58	143.31	95.91			
HES 14	74.95	95.23	2.38	137.40	171.74	98.54			
HES 15	75.59	88.71	1.96	152.59	189.76	95.87			
HES 16	66.05	110.19	0.81	127.38	175.25	45.36	234.26	261.68	52.29

Table S2. Regression coefficients of the adjusted model for the extraction of TPC, using HES 3 (camphor: dodecanoic acid) and HES 11 (borneol and dodecanoic acid).

Parameters	**HES 3**	**HES 11**
β_0	90.20*	94.56*
β_1	9.73*	10.11*
β_2	20.78*	-0.22
β_3	17.58*	28.63*
β_{11}	-3.30	-1.00
β_{22}	-2.84*	-3.87*
β_{33}	-7.42*	-3.30*
β_{12}	-1.03*	24.82*
β_{13}	5.97	-5.46*
β_{23}	-6.43	-18.26*
Lack of Fit	0.13	0.10
R^2	0.95	0.98
R-adjusted	0.90	0.97

Table S3. Analysis of Variance (ANOVA) results for the models derived from total phenolic compounds (TPC), obtained through the application of response surface methodology.

HES 3						
Source	**Sum of Squares**	**df**	**Mean Square**	**F-value**	**p-value**	**Significance**
Model	13162.41	9	1462.49	17.79	0.0006	**
X_1-Water Content	12.7951	1	12.7951	79.5666	0.012336	**
X_2-Solid-Liquid Ratio	4193.86	1	4193.86	260.7970	0.003812	**
X_3-Temperature	4173.72	1	4173.72	259.5446	0.003831	
X_1X_2	8.64	1	8.64	0.5370	0.539914	
X_1X_3	285.37	1	285.37	17.7456	0.051996	**
X_2X_3	336.76	1	336.76	20.9414	0.44583	**
X_1^2	121.88	1	121.88	7.5794	0.110495	**
X_2^2	321.57	1	321.57	19.9968	0.046544	**
X_3^2	614.18	1	614.18	38.1932	0.025197	**
Residual	575.46	7	82.21			
Lack of Fit	543.30	5	108.659	6.7570	0.133921	not significant
Pure Error	32.16	2	16.081			
Total SS	13737.87	16				
R^2	0.95					
R^2 adjusted	0.90					

HES 11						
Source	**Sum of Squares**	**df**	**Mean Square**	**F-value**	**p-value**	**Significance**
Model	225.5883	9	25.0654	60.79	< 0.0001	**
X_1-Water Content	13.7939	1	13.7939	229.515	0.004329	**
X_2-Solid-Liquid Ratio	0.0047	1	0.0047	0.078	0.806480	
X_3-Temperature	110.7112	1	110.7112	1842.117	0.000542	**
X_1X_2	50.1534	1	50.1534	834.499	0.001196	**
X_1X_3	2.3762	1	2.3762	39.537	0.024372	**
X_2X_3	27.0929	1	27.0929	450.796	0.002211	**
X_1^2	0.1118	1	0.1118	1.860	0.305832	
X_2^2	5.9576	1	5.9576	99.128	0.009938	**
X_3^2	1.2124	1	1.2124	20.173	0.046165	**
Residual	2.8859	7	0.4123			
Lack of Fit	2.7657	5	0.5531	9.204	0.100896	not significant
Pure Error	0.1202	2	0.0601			
Total SS	228.4742	16				
R^2	0.98					
R^2 adjusted	0.97					

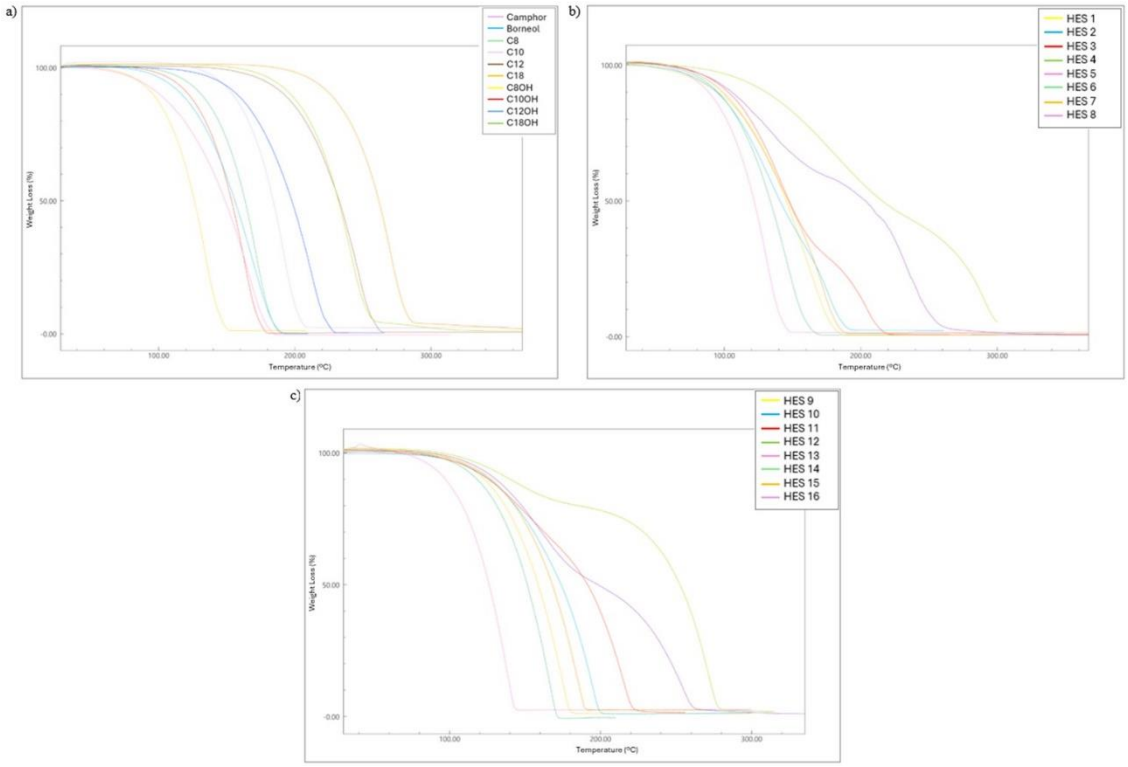
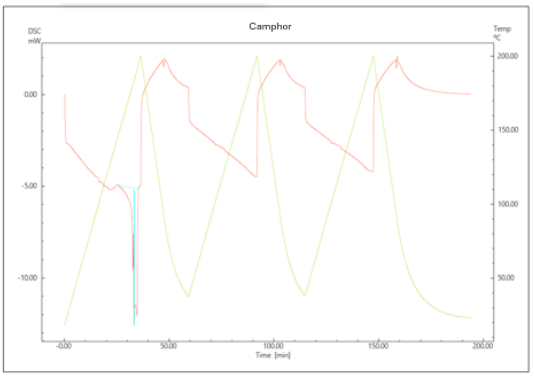
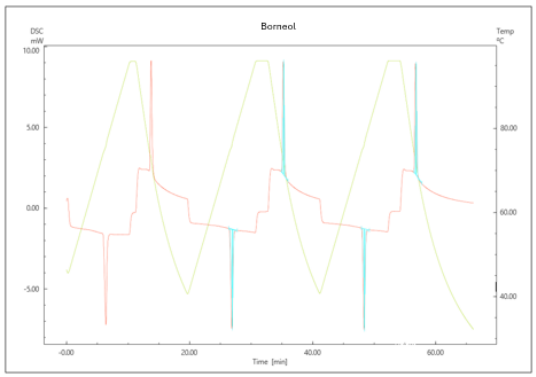


Figure S1. TGA curves for (a) pure constituents, (b) HES formed by mixing camphor with fatty acids and alcohols, and (c) borneol with fatty acids and alcohols.

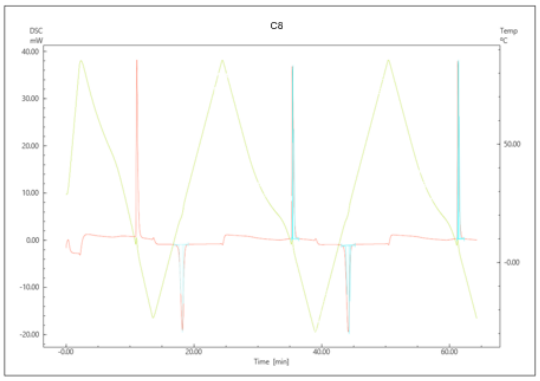
a)


Camphor
DSC
mW
Temp
°C
Time [min]

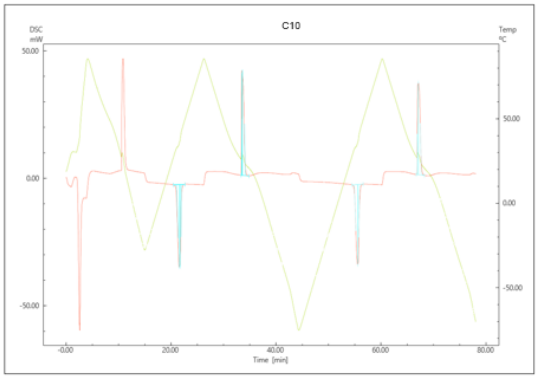
b)


Borneol
DSC
mW
Temp
°C
Time [min]

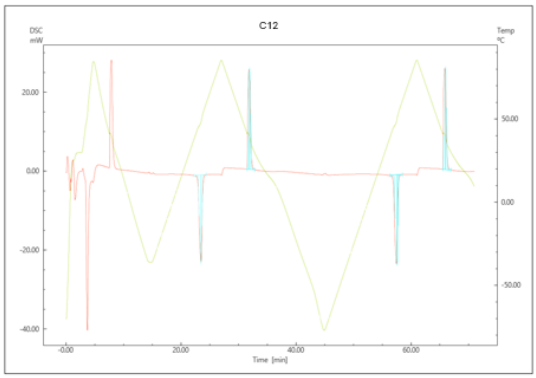
c)


C8
DSC
mW
Temp
°C
Time [min]

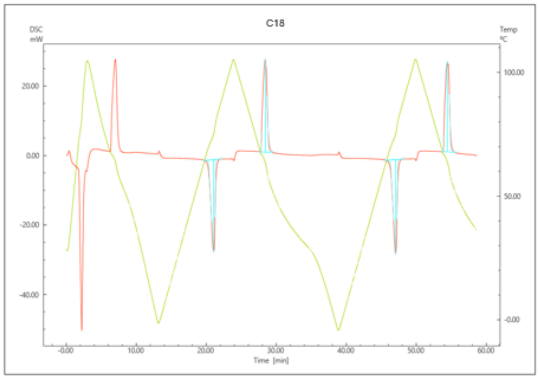
d)


C10
DSC
mW
Temp
°C
Time [min]

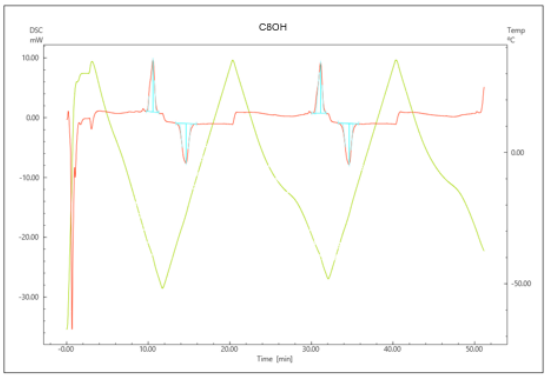
e)


C12
DSC
mW
Temp
°C
Time [min]

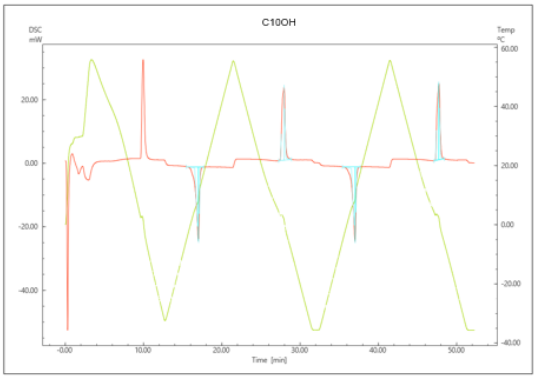
f)


C18
DSC
mW
Temp
°C
Time [min]

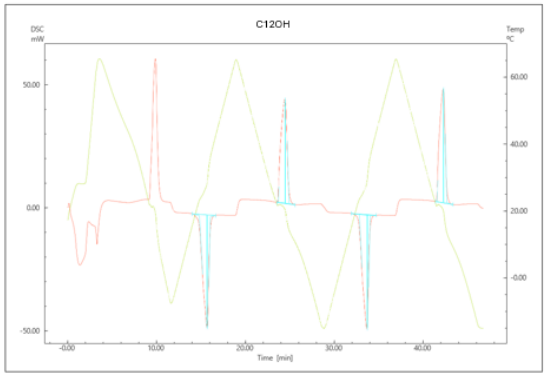
g)


C8OH
DSC
mW
Temp
°C
Time [min]

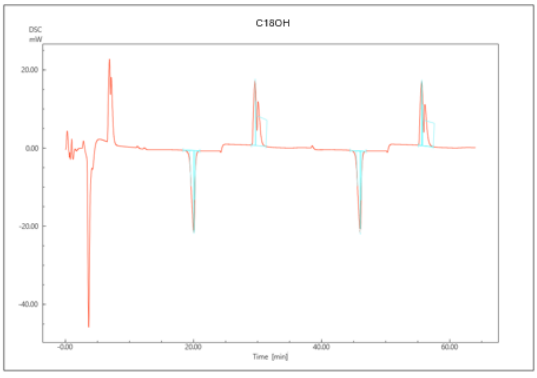
h)


C10OH
DSC
mW
Temp
°C
Time [min]

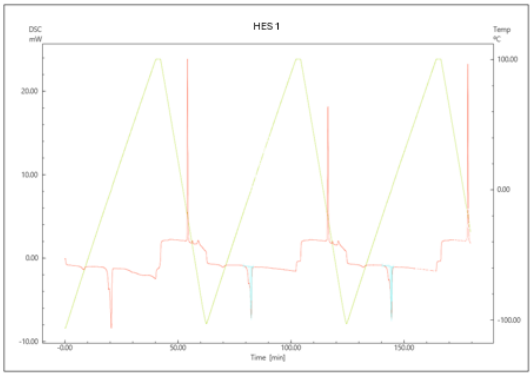
i)


C12OH
DSC
mW
Temp
°C
Time [min]

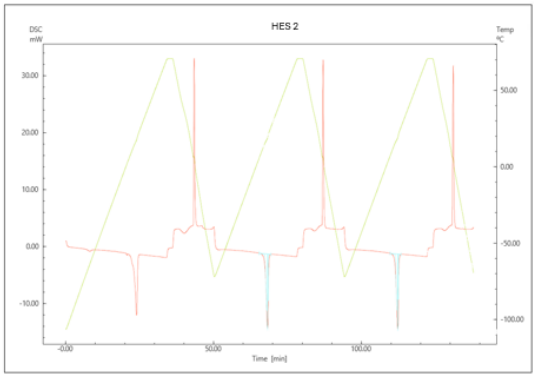
j)


C18OH
DSC
mW
Time [min]

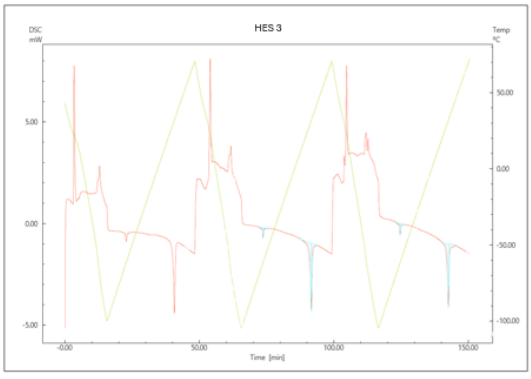
k)


HES 1
DSC
mW
Temp
°C
Time [min]

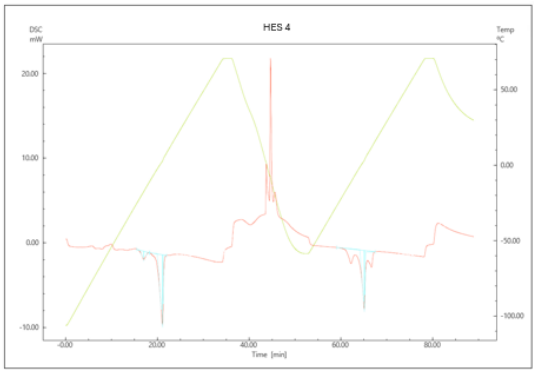
l)


HES 2
DSC
mW
Temp
°C
Time [min]

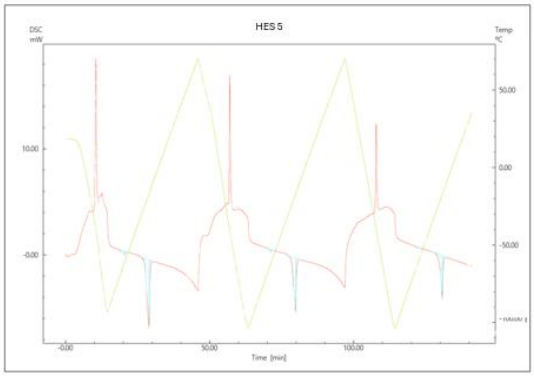
m)


HES 3
DSC
mW
Temp
°C
Time [min]

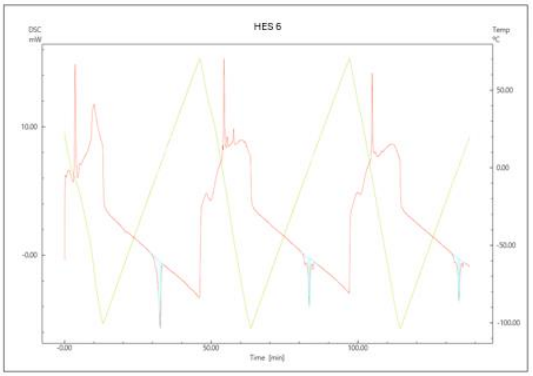
n)


HES 4
DSC
mW
Temp
°C
Time [min]

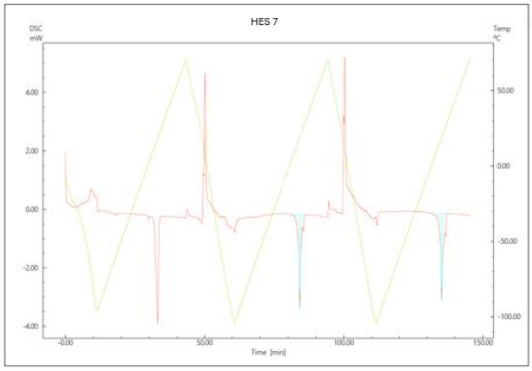
o)


HES 5
DSC
mW
Temp
°C
Time [min]

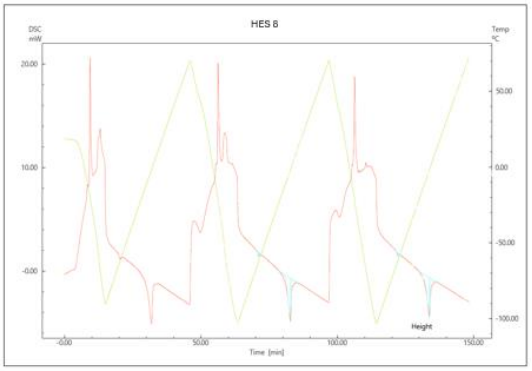
p)


HES 6
DSC
mW
Temp
°C
Time [min]

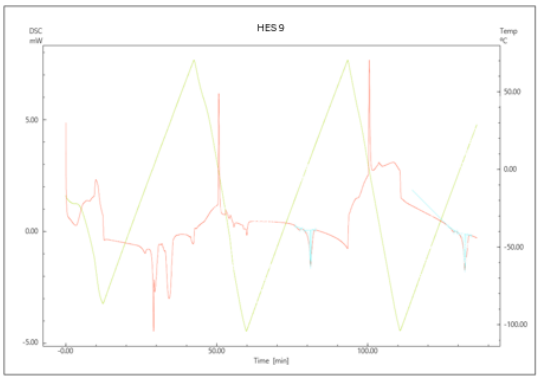
q)


HES 7
DSC
mW
Temp
°C
Time [min]

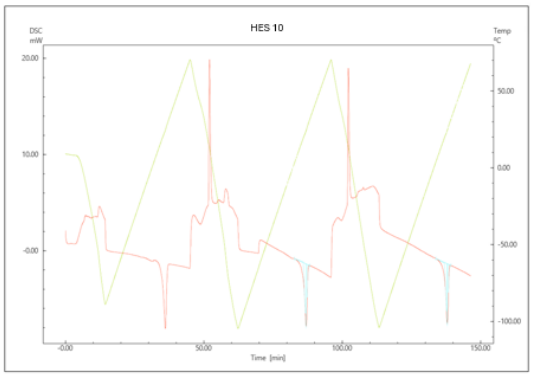
r)


HES 8
DSC
mW
Temp
°C
Time [min]

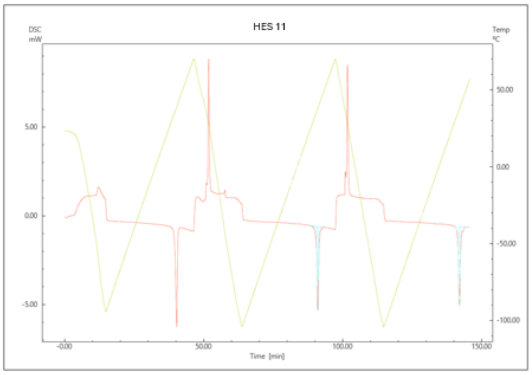
s)


HES 9
DSC
mW
Temp
°C
Time [min]

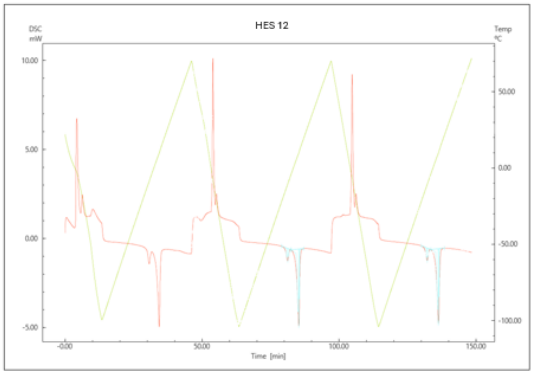
t)


HES 10
DSC
mW
Temp
°C
Time [min]

u)


HES 11
DSC
mW
Temp
°C
Time [min]

v)


HES 12
DSC
mW
Temp
°C
Time [min]

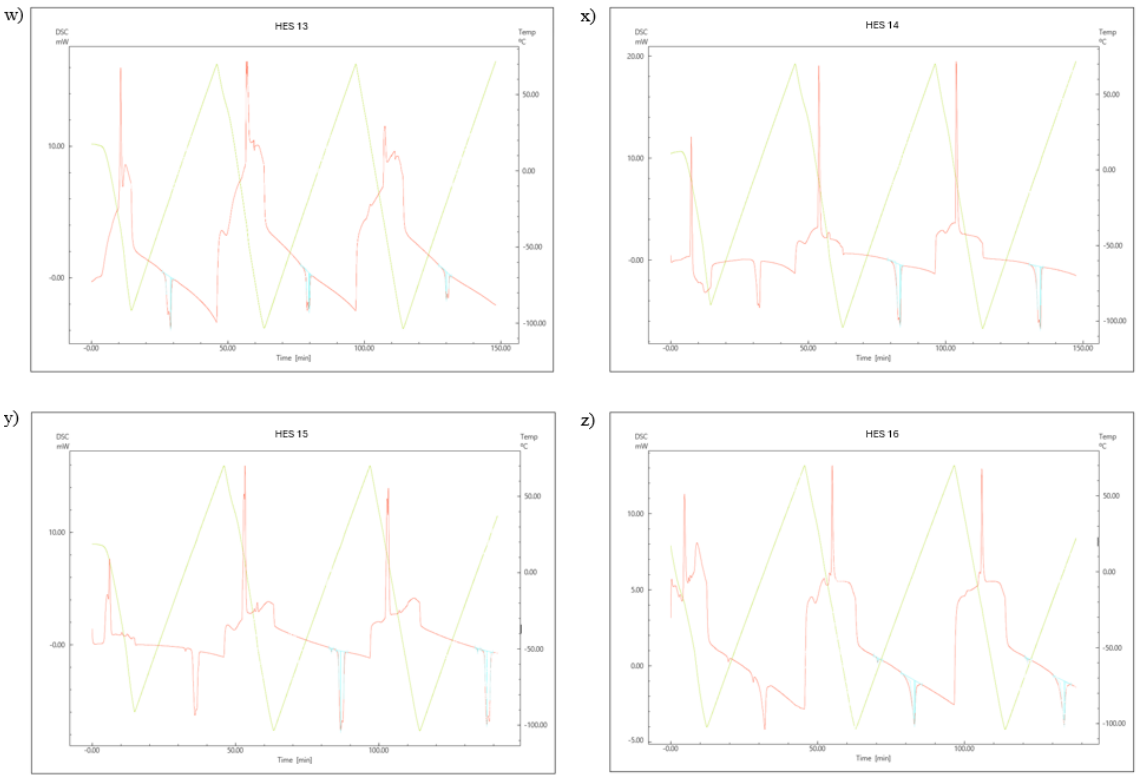


Figure S2. DSC curves for HES formed by camphor and borneol with fatty acids or alcohols, and their individual components.