

Moisture Resistance, Thermal Stability and Fire Behavior of Unsaturated Polyester Resin Modified with L-histidinium Dihydrogen Phosphate-Phosphoric Acid

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Table S1. TG and DTG data of unmodified UP and resin with APP and LHP

Materials	UP	UP/ 10APP	UP/ 20APP	UP/ 30APP	UP/ 10LHP	UP/ 20LHP	UP/ 30LHP
T _{5%} , °C	278	287	266	293	275	267	256
DTG1, °C;	231;	239;	184;	240;	228;	201;	230;
%/°C	0.05	0.04	0.03	0.03	0.05	0.05	0.07
DTG2, °C;	-	326;	289;	323;	323;	320;	317;
%/°C	-	1.22	0.21	0.82	0.68	0.66	0.54
DTG3, °C;	362;	407;	378;	389;	398;	403;	402;
%/°C	1.00	0.57	0.57	0.53	0.68	0.57	0.49
DTG4, °C;	-	-	-	559;	-	-	-
%/°C	-	-	-	0.27	-	-	-
DTG5, °C;	652;	668;	-	702;	-	-	-
%/°C	0.02	0.05	-	0.06	-	-	-
DTG6, °C;	-	947;	874;	963;	896;	908;	913;
%/°C	-	0.02	0.06	0.02	0.11	0.11	0.19
Residue in 1000 °C, %	1.4	2.6	3.7	2.5	2.4	4.5	4.3

Table S2. TG and DTG data of unmodified UP and resin with APP and LHP after immersion the samples in distilled water at 70 °C.

Materials	UP ai	UP/30APP ai	UP/30LHP ai
W _{5%} , °C	276	263	257
DTG1, °C;	239;	234;	218;
%/°C	0.05	0.04	0.06
DTG2, °C; %/°C	-	329; 0.76	315; 0.58
DTG3, °C;	359;	383;	401;
%/°C	1.13	0.52	0.53
DTG4, °C;	595;	555;	-
%/°C	0.05	0.22	
DTG5, °C;		762;	
%/°C		0.04	
DTG6, °C;	-	944;	896;
%/°C		0.01	0.14
Residue in 1000 °C, %	1.3	3.3	9.2
Leaching, %	1.13 (0.2) ^a	3.78 (0.5)	15.02 (1.4)

^a The values in parentheses are the standard deviations.