

Supplementary material

Effect of the Coupling Agent (3-aminopropyl) triethoxysilane on the Structure and Fire Behavior of Solvent-Free One-Pot Synthesized Silica-Epoxy Nanocomposites

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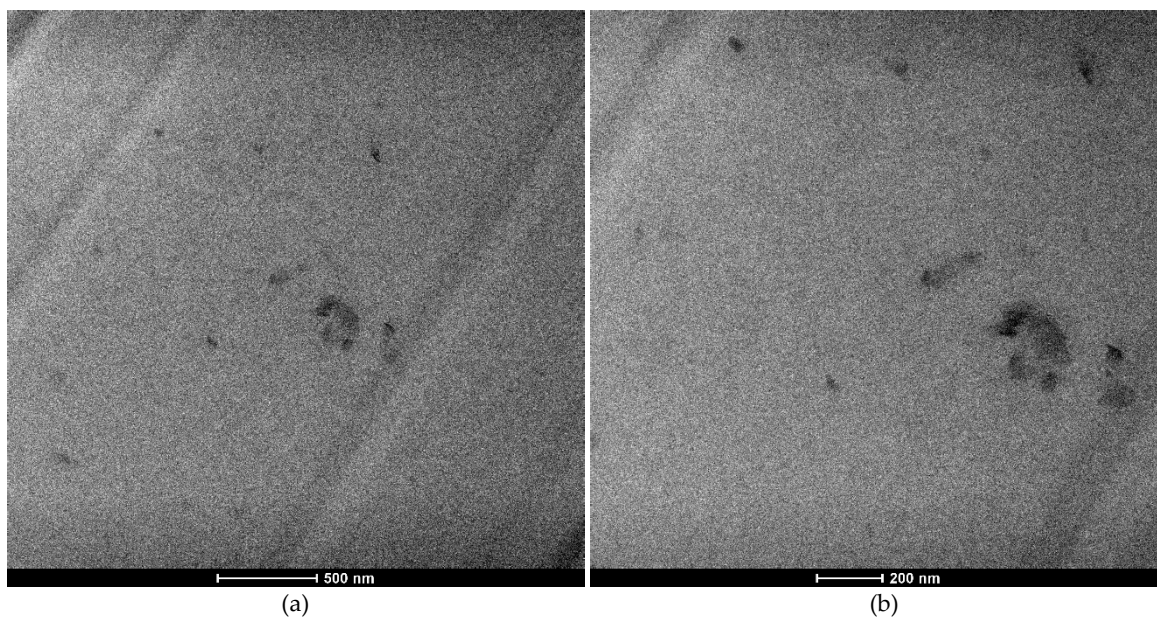


Figure S1. Low-resolution TEM micrographs of EPO_6%Si_2.32 at different magnifications.

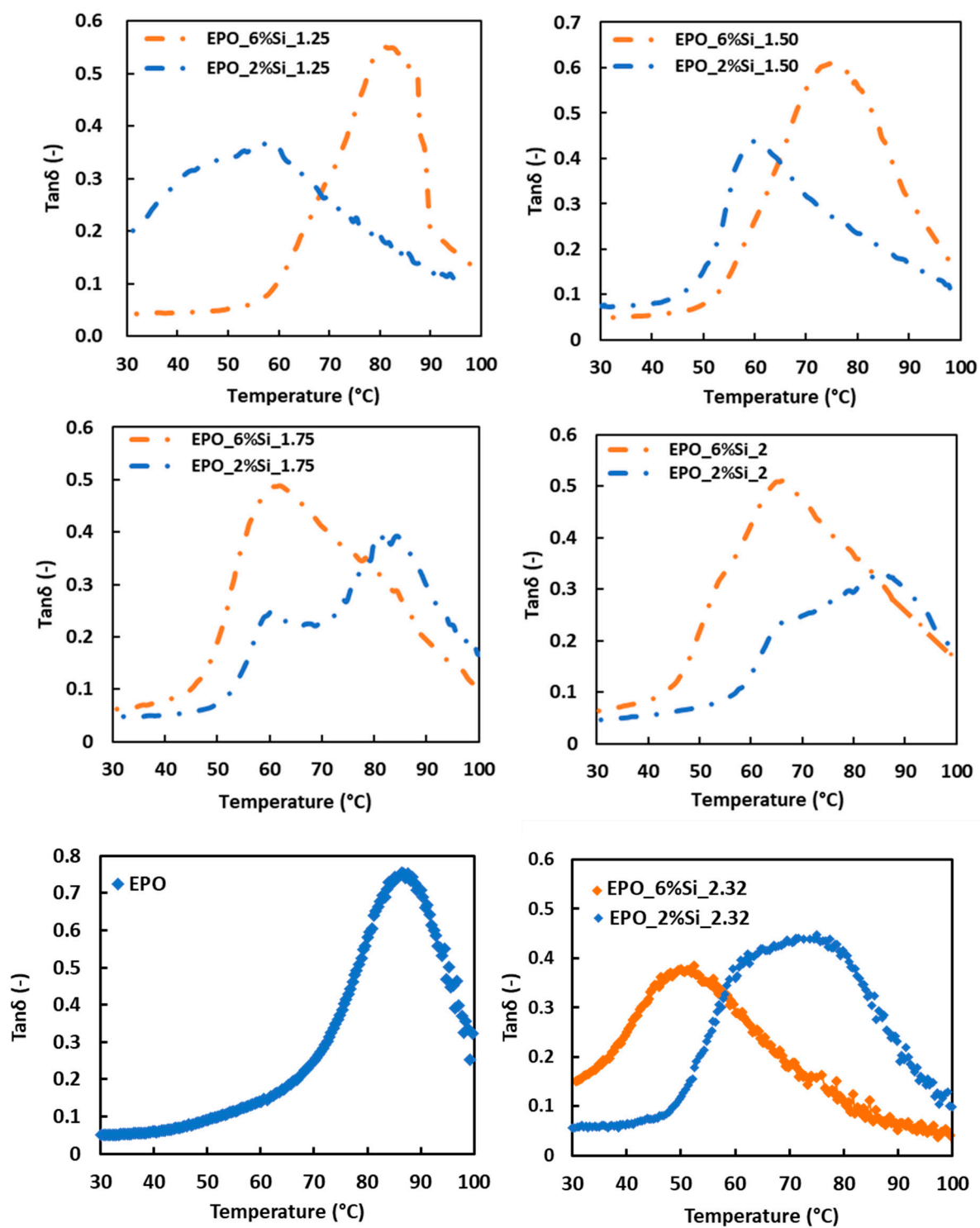


Figure S2. Tanδ vs. temperature curves of the investigated samples.

Table S1. TGA analysis of all samples (TEOS/APTS=2.32) in air and N₂. T_{5%}, T_{10%} and T_{50%} are the temperatures at which 5 wt.%, 10 wt.% and 50 wt.% losses were recorded, respectively. T_{peak} is the temperature, at which the weight loss rate reached a maximum; the residues at T_{peak} and 800 °C are also reported.

Sample	T _{5%} (°C)	T _{10%} (°C)	T _{50%} (°C)	T _{peak} (°C)	Residue at T _{peak} (%)	Residue at 800°C (%)
<i>N₂</i>						
EPO	295	347	381	370	65.6	8.42
EPO_2%Si_2.32	213	288	384	363	72.9	9.61
EPO_6%Si_2.32	239	300	404	377	66.6	16.7
<i>Air</i>						
EPO	280	352	358	365	84.6	0.75
EPO_2%Si_2.32	231	300	398	370	73.3	3.37
EPO_6%Si_2.32	185	243	407	369	71.2	3.46

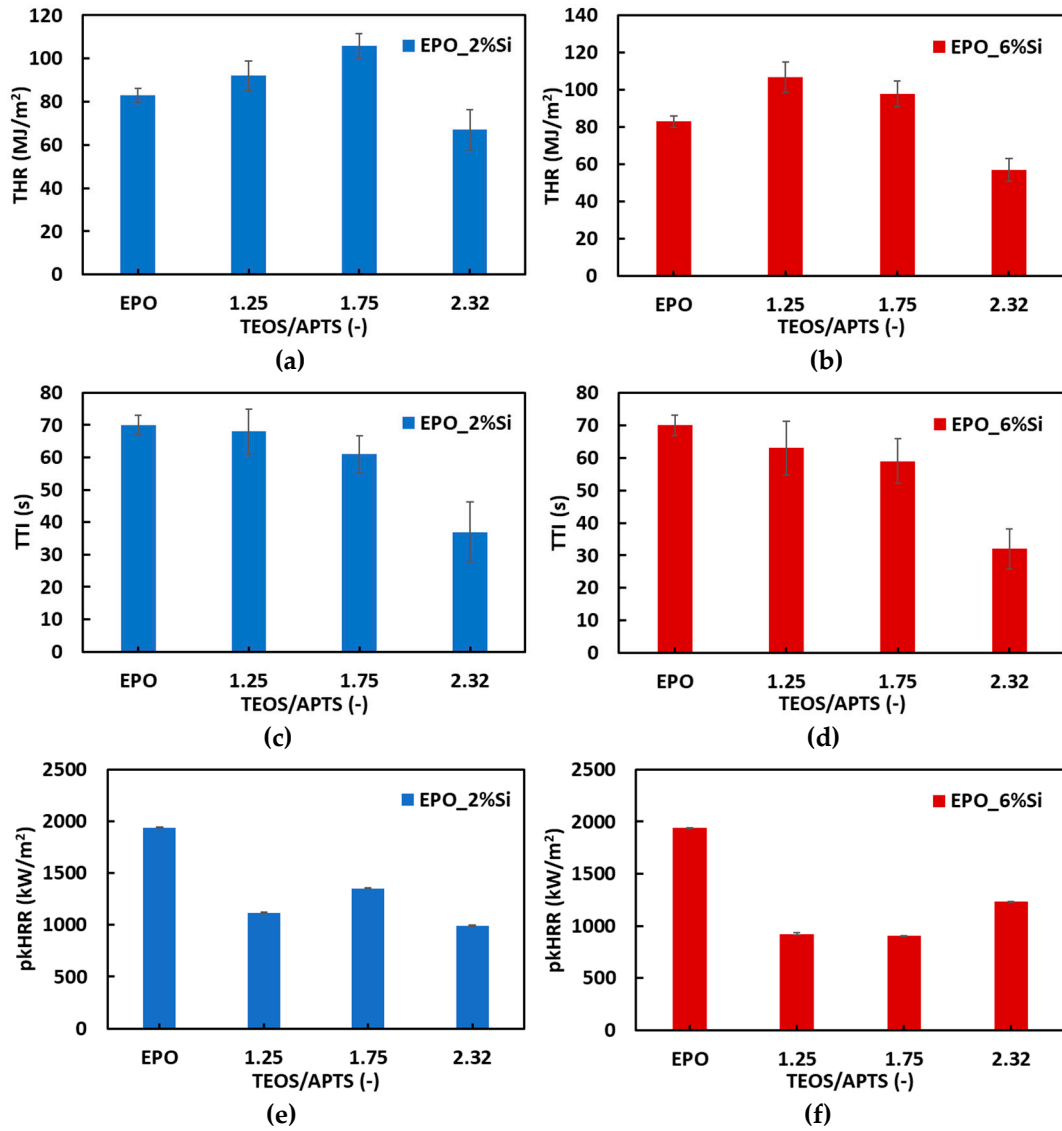


Figure S3. THR vs. TEOS/APTES molar ratio for the two investigated series containing (a) 2 wt.% of silica and (b) 6 wt.% of silica. TTI vs. TEOS/APTES molar ratio for the two investigated series containing (c) 2 wt.% of silica and (d) 6 wt.% of silica. pkHRR vs. TEOS/APTES molar ratio for the two investigated series containing (e) 2 wt.% of silica and (f) 6 wt.% of silica.