

Supplementary Materials: Thermal Stability and Flammability of Styrene-Butadiene Rubber-Based (SBR) Ceramifiable Composites

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Table S1. Optimal vulcanization time τ_{90} and scorch time τ_{02} of the mixes studied.

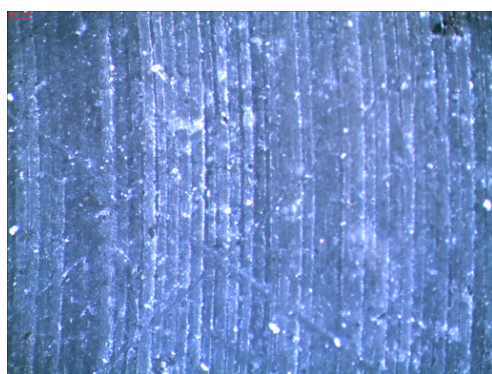
Parameter	Sample Description				
	SBR_pris	SBR_hal	SBR_kao	SBR_mic	SBR_wol
τ_{02} ¹	7 min. 20 s	8 min. 00 s	5 min. 55 s	6 min. 10 s	6 min. 45 s
τ_{90} ²	15 min. 45 s	21 min. 30 s	13 min. 10 s	11 min. 25 s	11 min. 20 s

¹ Scorch time is a time of 2% increase of torque value during kinetic of vulcanization test; ² Optimal vulcanization time is a time of 90% increase of torque value during kinetic of vulcanization test.

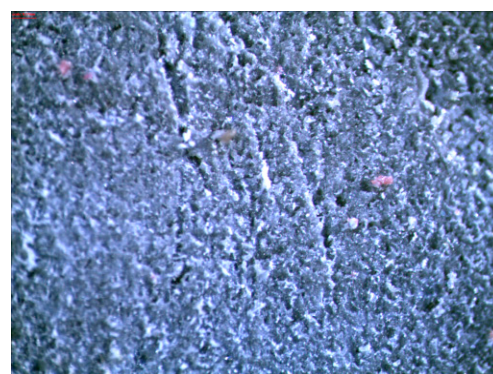
Table S2. Mechanical properties of the vulcanizates studied: Shore hardness, scale *A* and *D*, tear resistance (*Tes*), stress at 100% (SE100), 200% (SE200) and 300% (SE300) of elongation, tensile strength (*Ts*), elongation at break (*Eb*) and abrasion (*A*).

Parameter	Sample Description				
	SBR_pris	SBR_hal	SBR_kao	SBR_mic	SBR_wol
Hardness (°ShA)	48.5 ± 0.2	87.1 ± 4.2	85.2 ± 0.4	83.0 ± 1.2	85.7 ± 0.6
Hardness (°ShD)	10.0 ± 0.3	26.9 ± 0.1	26.8 ± 0.1	22.4 ± 0.4	24.8 ± 0.5
<i>Tes</i> (N/mm)	0.4 ± 0.2	41.3 ± 3.0	18.2 ± 1.3	26.2 ± 2.6	20.6 ± 1.8
SE100 (MPa)	0.8 ± <0.1	5.9 ± 0.1	3.7 ± 0.1	3.5 ± 0.1	3.5 ± 0.1
SE200 (Mpa)	1.2 ± <0.1	6.5 ± 0.1	4.4 ± 0.1	4.1 ± 0.1	4.1 ± 0.1
SE300 (Mpa)	1.5 ± <0.1	-	4.9 ± 0.1	4.6 ± 0.1	4.5 ± 0.1
<i>Ts</i> (Mpa)	2.3 ± 0.1	6.6 ± 0.2	5.3 ± 0.2	5.6 ± 0.1	5.5 ± 0.3
<i>Eb</i> (%)	536 ± 71	227 ± 27	424 ± 44	463 ± 88	514 ± 52
<i>A</i> (mm ³)	- ¹	0.43 ± 0.06	0.29 ± 0.04	0.51 ± 0.13	0.35 ± 0.05

¹ Abrasion test was impossible to perform due to high elasticity of the pristine sample, which fall out the device grip.



(a)



(b)

Figure S1. Cont.

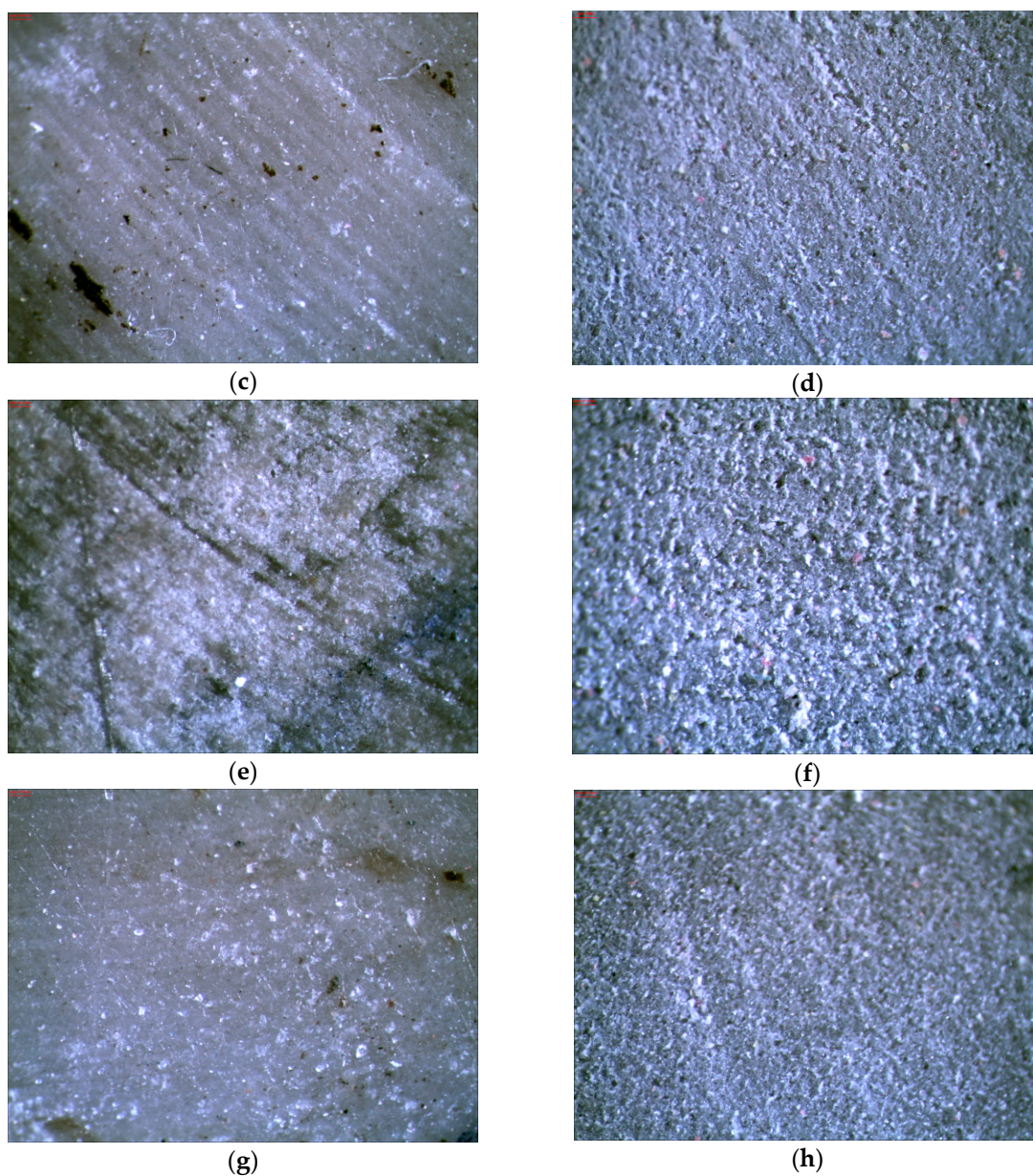


Figure S1. Abrasion test photographs of the ceramifiable samples filled with: halloysite before (a) and after (b) the test, calcined kaolin before (c) and after (d) the test, mica before (e) and after (f) the test and wollastonite before (g) and after (h) the test.