

Figure 1. FTIR-ATR of waste tire.

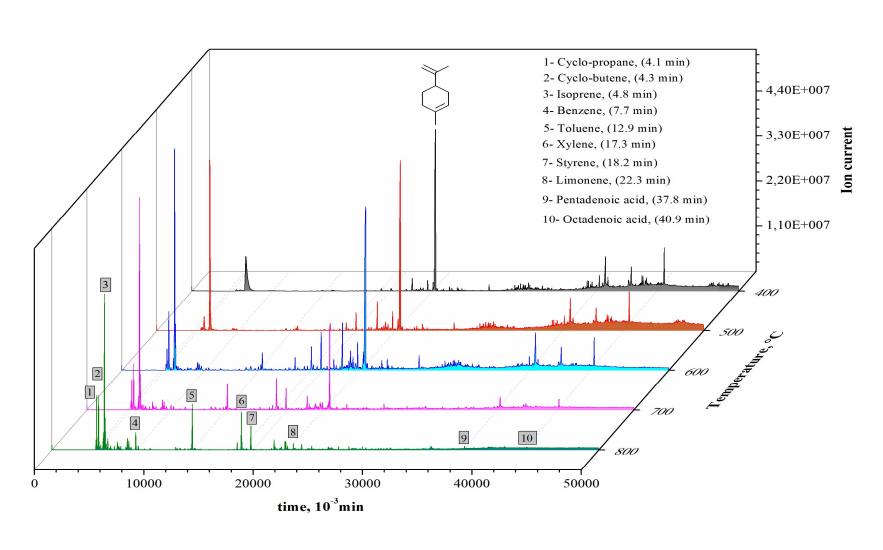


Figure S1. Chromatograms of WTs Py-GC/MS at different temperatures with the ids of the main signals detected.

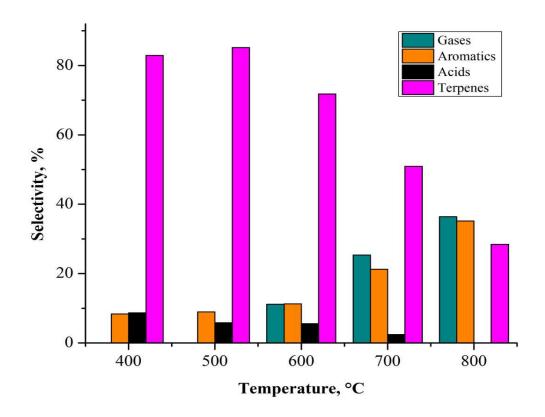


Figure S2. Effect of pyrolysis temperature on the product distribution (based on area-related selectivity).

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time	Name		
4,120	Carbon dioxide		
4,972	Isoprene		
17,327	o-Xylene		
18,223	Styrene		
20,080	Cyclohexanethiol		
20,157	D-Limonene		
	1,5-Heptadiene, 2,5-dimethyl-3-methylene-		
22,205	D-Limonene D-Limonene		
23,769	Benzene, 1-methyl-4-(1-methylethenyl)-		
27,184	Benzothiazole		
29,524	29,524 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-		
30,371	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-		
30,782	Quinoline, 1,2-dihydro-2,2,4-trimethyl-		
30,898	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-		
32,039	O39 Cyclohexane, 1-ethenyl-1-methyl-2,4-bis(1-methylethenyl)-, [1S-(1.alpha.,2.beta.,4.beta.)]-		
34,404	Squalene		
35,141	Pentadecanoic acid		
37,244	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-		
37,846	Pentadecanoic acid		
38,039	Ethyl iso-allocholate		
	9-Octadecenal, (Z)-		
	Octadecanoic acid		
40,302	Docosanoic acid, 1,2,3-propanetriyl ester		
	Ethyl iso-allocholate		
43,187	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-N'-phenyl-		

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

4,950 Isoprene 17,334 o-Xylene 18,234 Styrene 20,169 D-Limonene 21,567 2,4,6-Trimethyl-1,3,6-heptatriene 22,068 2,4,6-Trimethyl-1,3,6-heptatriene 22,284 D-Limonene 23,564 Cyclohexene, 4-ethyl-3-ethylidene- 23,774 Benzene, 1-methyl-4-(1-methylethenyl)- 24,273 Cycloheptane, 1,3,5-tris(methylene)- 27,180 Benzothiazole 29,533 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 30,382 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 30,784 Quinoline, 1,2-dihydro-2,2,4-trimethyl- Cyclohexane, 1-ethenyl-1-methyl-2,4-bis(1-32,050 methylethenyl)-, [1S-(1.alpha.,2.beta.,4.beta.)]- 36,481 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 36,601 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 37,258 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 37,584 Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid 38,053 Cycloheptane, 4-methylene-1-methyl-2-(2-	R.Tim	Name		
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(1.alpha.,2.beta.,4.beta.)]- 36,481 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 36,601 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 37,258 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-2-(2-methylethylidene)-		Cyclohexane, 1-ethenyl-1-methyl-2,4-bis(1-		
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methyl-1-propen-1-yl)-1-vinyl- Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cycloheptane, 4-methylene-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 7,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-methylethylidene)-		(1.alpha.,2.beta.,4.beta.)]-		
methyl-1-propen-1-yl)-1-vinyl- Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 7,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-methylethylidene)-	26 491	Cycloheptane, 4-methylene-1-methyl-2-(2-		
methyl-1-propen-1-yl)-1-vinyl- 37,258 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- 37,584 Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	30,481	methyl-1-propen-1-yl)-1-vinyl-		
methyl-1-propen-1-yl)-1-vinyl- 37,258 Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl- Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	26 601	Cycloheptane, 4-methylene-1-methyl-2-(2-		
methyl-1-propen-1-yl)-1-vinyl- 37,584 Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	30,001	methyl-1-propen-1-yl)-1-vinyl-		
methyl-1-propen-1-yl)-1-vinyl- Cyclohexane, 1-ethenyl-1-methyl-2-(1-methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	27 250	Cycloheptane, 4-methylene-1-methyl-2-(2-		
methylethenyl)-4-(1-methylethylidene)- 37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	37,238	methyl-1-propen-1-yl)-1-vinyl-		
37,821 Pentadecanoic acid Cycloheptane, 4-methylene-1-methyl-2-(2-	27.504	Cyclohexane, 1-ethenyl-1-methyl-2-(1-		
38 053 Cycloheptane, 4-methylene-1-methyl-2-(2-	37,364	methylethenyl)-4-(1-methylethylidene)-		
38 0031	37,821	Pentadecanoic acid		
methyl-1-propen-1-yl)-1-vinyl-	28.052	Cycloheptane, 4-methylene-1-methyl-2-(2-		
	38,033	methyl-1-propen-1-yl)-1-vinyl-		

40,185	Octadecanoic acid
41,169	2,2,4-Trimethyl-3-(3,8,12,16-tetramethyl-heptadeca-3,7,11,15-tetraenyl)-
	cyclohexanol
11 562	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
41,505	methyl-1-propen-1-yl)-1-vinyl-
	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-
43,201	N'-phenyl-

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time		Name
	4,906	Isoprene
	15,876	Cyclohexene, 4-ethenyl-
	17,342	o-Xylene
	18,238	Styrene
	19,616	2,4,6-Trimethyl-1,3,6-heptatriene
	20,176	D-Limonene
	20,923	1,6-Octadiene, 2,6-dimethyl-, (Z)-
	21,576	2,4,6-Trimethyl-1,3,6-heptatriene
	22,092	2,4,6-Trimethyl-1,3,6-heptatriene
	22,308	D-Limonene
	22,428	2,4,6-Trimethyl-1,3,6-heptatriene
	23,781	Benzene, 1-methyl-4-(1-methylethenyl)-
	24,278	Cycloheptane, 1,3,5-tris(methylene)-
	27,187	Benzothiazole
	29,541	Cycloheptane, 4-methylene-1-methyl-2-(2-
		methyl-1-propen-1-yl)-1-vinyl-
	30 390	Cycloheptane, 4-methylene-1-methyl-2-(2-
		metnyi-i-propen-i-yi)-i-vinyi-
	30,793	Quinoline, 1,2-dihydro-2,2,4-trimethyl-
		Cyclohexane, 1-ethenyl-1-methyl-2,4-bis(1-
	32,058	methylethenyl)-, [1S-
		(1.alpha.,2.beta.,4.beta.)]-
	36 610	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl 1 proper 1 yl) 1 vinyl
	50,010	metry1-1-properi-1-yr)-1-viriyi-
	37,269	Cycloheptane, 4-methylene-1-methyl-2-(2-
	31,209	methyl-1-propen-1-yl)-1-vinyl-
	37,834	Pentadecanoic acid
	38,062	Cycloheptane, 4-methylene-1-methyl-2-(2-
	38,002	methyl-1-propen-1-yl)-1-vinyl-
	40,191	Octadecanoic acid

41,573	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
43,211	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-N'-phenyl

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time	Name
4,855	Isoprene
12,866	Toluene
15,858	Cyclohexene, 4-ethenyl-
17,333	o-Xylene
18,227	Styrene
20,170	D-Limonene
21 568	2,4,6-Trimethyl-1,3,6-
22.068	2,4,6-Trimethyl-1,3,6-
22,008	heptatriene
22,283	D-Limonene
· ·	Cyclohexane, 1-butenylidene-
23.778	Benzene, 1-methyl-4-(1-
	1111e111V1e111e11V11=
24.278	Cycloheptane, 1,3,5- tris(methylene)-
	u is(incury iche)-
27,185	Benzothiazole
29,540	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
30,389	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
30,789	Quinoline, 1,2-dihydro-2,2,4-trimethyl-
Cycloheptane, 4-methylene 36,487 methyl-2-(2-methyl-1-prop 1-yl)-1-vinyl-	

36,606	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
	•
	Cycloheptane, 4-methylene-1-
37,264	methyl-2-(2-methyl-1-propen-
	1-yl)-1-vinyl-
37,814	Pentadecanoic acid
	Cycloheptane, 4-methylene-1-
38,057	methyl-2-(2-methyl-1-propen-
·	1-yl)-1-vinyl-
40,173	Octadecanoic acid
	2,2,4-Trimethyl-3-(3,8,12,16-
41.071	tetramethyl-heptadeca-
41,271	3,7,11,15-tetraenyl)-
	cyclohexanol
	Cycloheptane, 4-methylene-1-
41,568	methyl-2-(2-methyl-1-propen-
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1-yl)-1-vinyl-
42.000	1,4-Benzenediamine, N-(1,3-
43,200	dimethylbutyl)-N'-phenyl-

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time	Name	
4,040	Carbon dioxide	
4,132	Propene	
4,300	Cyclobutene	
4,727	2-Butene, 2-methyl-	
4,829	Cyclopropane, ethylidene-	
	Cyclopropane, 1,1-dimethyl-	
12,856	Toluene	
15,852	Cyclohexene, 4-ethenyl-	
17,338	o-Xylene	
18,232	Styrene	
19,392	1,5-Heptadiene, 2,3,6-trimethyl-	
20,178	D-Limonene	
20,769	1,5-Heptadiene, 2,3,6-trimethyl-	
20,922	Cyclopropane, 1,1-dimethyl-2-(1-methyl-2-propenyl)-	
21,150	1,5-Heptadiene, 2,3,6-trimethyl-	
	2,4,6-Trimethyl-1,3,6- heptatriene	
22,086	2,4,6-Trimethyl-1,3,6-heptatriene	
22,299	D-Limonene	
23,782	Benzene, 1-methyl-4-(1-	
	memylemenyl)-	
24,280	Cycloheptane, 1,3,5-	
	tris(methylene)-	
27,186	Benzothiazole	

37,260	Cycloheptane, 4-methylene-1-methyl-2-(2-methyl-1-propen-1-yl)-1-vinyl-
	Pentadecanoic acid
40,175	Octadecanoic acid
43,189	1,4-Benzenediamine, N-(1,3-dimethylbutyl)-N'-phenyl

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time	Name	
4,040	Carbon dioxide	
4,115	Propene	
4,286	Bicyclo[1.1.0]butane	
4,712	Cyclopropane, 1,1-dimethyl-	
4,815	Cyclopropane, ethylidene-	
	Cyclopropane, 1,1-dimethyl-	
	1-Hexene	
6,017	2-Pentene, 4-methyl-, (E)-	
6,927	1,3,5-Hexatriene, (Z)-	
	1,3,5-Hexatriene, (Z)-	
	Benzene	
12,855	Toluene	
16,969 o-Xylene		
	43 o-Xylene	
	Styrene	
20.157	Cyclobutane, 1,2-bis(1-	
20,137	Cyclobutane, 1,2-bis(1-methylethenyl)-, trans-	
20,337	Benzene, 1-ethyl-3-methyl-	
21,337	Benzene, 1,2,4-trimethyl-	
22,111	Benzene, 1,2-diethyl-	
22,213	D-Limonene	
22 775	Benzene, 1-methyl-4-(1-	
23,773	methylethenyl)-	
27,178	Benzothiazole	
	Pentadecanoic acid	
40,136	Octadecanoic acid	
43,167	1,4-Benzenediamine, N-(1,3-	
45,107	dimethylbutyl)-N'-phenyl-	

Table S1. Compounds identification during the WTs pyrolysis in the Py-GC/MS system.

R.Time	Name
4,030	Carbon dioxide
4,098	Propene
4,269	Cyclobutene
4,474	1-Butene, 3-methyl-
4,694	Cyclopropane, 1,1-dimethyl-
4,801	Isoprene
4,876	Cyclopropane, 1,1-dimethyl-
4,966	1,3-Pentadiene
5,116	1,3-Cyclopentadiene
5,369	2-Pentene, 4-methyl-, (E)-
5,996	2-Pentene, 4-methyl-, (E)-
6,904	1,3,5-Hexatriene, (Z)-
7,033	1,3,5-Hexatriene, (Z)-
7,668	Benzene
12,845	Toluene
16,949	Ethylbenzene
17,330	o-Xylene
18,204	Styrene
	Benzene, 1-ethyl-3-methyl-
20,430	
21,317	Benzene, 1,2,4-trimethyl-
	Benzene, 1-ethenyl-2-methyl-
21,533	Benzene, 1-ethenyl-4-methyl-
22,086	Benzene, 1,2,4-trimethyl-
	Benzene, 1,2-propadienyl-