Table S1. Effect of gasification temperature (GT) on tar composition at an equivalence ratio of 0.05

Category	Compounds	Relative content(%)		
		700	**800**	**900**
Acids	Acetic acid	2.53	ND	ND
	2-(4-ethylphenoxy)acetic acid	ND	0.28	ND
	2-hexyl-1-cyclopropaneacetic acid	0.1	ND	ND
	3-[(1-phenylethyl-2-propynyl)oxy]butanoic acid	ND	1.20	ND
	Oleic acid	0.88	ND	ND
	(Z)-8-methyl-9-tetradecenoic acid	1.29	0.26	ND
	Total	**4.8**	**1.74**	**0**
Esters	Cyclopropanecarboxylic acid, 2-(2-propynyl)methyl ester	ND	1.12	ND
	Methyl palmitate	ND	0.69	ND
	2-Phenethyl hexanoate	0.28	ND	ND
	Methyl pyruvate	0.24	ND	ND
	Methyl 14-methylhexadecanoate	1.01	ND	ND
	Methyl isostearate	3.65	4.58	3.08
	Lauric acid, 2,3-diacetoxypropyl ester	0.13	ND	ND
	Methyl 16-hydroxyhexadecanoate	4.35	ND	ND
	Isobutyl palmitate	ND	16.71	10.29
	Glyceryl monostearate	ND	ND	5.94
	2-Monopalmitin	7.91	ND	8.95
	Stearyl hexanoate	ND	3.07	ND
	Fumaric acid, 2-butylhexadecyl ester	ND	ND	0.46
	2-Monooctadecanoylglycerol	2.88	ND	0.3
	Isobutyl (Z)-10-heptadecenoate	ND	ND	1.18
	Total	**20.45**	**26.17**	**30.2**
Ketones	Methylcyclopentenolone	0.37	ND	ND
	Bicyclo[3.2.2]non-2,6-dien-5-ol-4-one	ND	ND	0.19
	2,7-Bis(spirocyclopropane)bicyclo[2.2.1]heptan-5-one	ND	ND	1.02
	1-(5-Hexyl-2,4-dihydroxyphenyl)ethanone	ND	ND	7.66
	6,6-Dimethylcycloocta-2,4-dien-1-one	0.64	ND	ND
	6-Hydroxy-6-phenyltricyclo[3.3.1.0(3,7)]nonan-2-one	0.11	ND	ND
	5,6-Dimethoxy-3-methyl-2,3-dihydro-1H-inden-1-one	0.21	8.73	ND
	10-tert-Butyl-10-hydroxytricyclo[4.2.1.1(2,5)]decan-9-one	0.79	ND	ND
	1-(2,5-Dimethoxy-4-methylphenyl)propan-2-one	0.17	ND	ND
	Total	**2.29**	**8.73**	**8.87**
Aldehydes	2-Oxo-3-cyclopentene-1-acetaldehyde	ND	3.27	ND
	7,7-Dimethylbicyclo[4.1.0]hept-3-ene-4-carbaldehyde	3.65	ND	ND
	4-Benzyloxy-4-(2,2-dimethyl-1,3-dioxolan-4-yl)butanal	5.95	ND	ND
	Total	**9.6**	**3.27**	**0**
Alcohols	Glycerol	0.95	0.34	ND
	Erythritol	0.35	ND	ND
	trans-2-(2-Propynyloxy)cyclopentanol	0.09	ND	ND
	trans-1,2-Cyclopentanediol	0.74	ND	ND
	1,2-Cyclohexanedimethanol	0.4	ND	ND
	1-(Adamantan-1-yl)butan-1-ol	0.66	ND	ND
	5-Octen-2-yn-4-ol	0.18	ND	ND
	1-(1-Butynyl)cyclopentanol	0.61	ND	ND
	Cyclopropylbenzyl alcohol	6.35	ND	ND
	1,2,3,4-Tetrahydro-2-methylnaphthalen-1-ol	1.86	3.56	ND
	1-[4-(1-Hydroxycyclohexyl)but-1,3-diynyl]cyclohexan-1-ol	1.02	ND	ND
	cis-2,4,5,6,7,7a-Hexahydro-4,4,7a-trimethyl-2-benzofuranmethanol	ND	8.5	ND
	3-Deoxy-17β-estradiol	1.61	ND	3.4
	Total	**14.82**	**12.4**	**3.4**
Phenols	Phenol	16.61	22.2	2.79
	o-Cresol (2-Methylphenol)	ND	1.33	ND
	m-Cresol (3-Methylphenol)	7.87	ND	ND
	p-Cresol (4-Methylphenol)	2.6	10.8	ND
	2,5-Dimethylphenol	ND	1.2	ND
	2,3-Dimethylphenol	7.73	ND	ND
	3-Ethylphenol	2.99	ND	ND

	3,5-Di-tert-butylphenol	1.49	ND	ND
	2,4-Di-tert-butylphenol	ND	1.11	2.16
	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	ND	0.46	0.31
	Total	**39.29**	**37.1**	**5.26**
Aromatics	1-Phenyl-1-propyne	ND	2.87	5.99
	3-Phenyl-1-propyne	0.32	ND	1.38
	Naphthalene	ND	3.31	26.14
	1-Methylnaphthalene	ND	ND	2.96
	2-Methylnaphthalene	ND	ND	1.21
	7H-Benzocycloheptene	ND	0.66	ND
	1-(Pent-4-enyl)naphthalene	ND	ND	0.53
	Biphenyl	ND	ND	0.26
	Acenaphthylene	ND	0.58	8.2
	Fluorene	ND	ND	0.78
	1,2-Dihydroanthracene	ND	ND	0.51
	Phenanthrene	ND	ND	1.17
	1,4-Dihydro-1,4-ethanoanthracene	ND	0.51	0.32
	9,10-Dimethylanthracene	ND	ND	0.46
	2,3-Dihydrofluorene	ND	ND	0.34
	1-Hexadecyl-2,3-dihydro-1H-indene	ND	ND	0.25
	Total	**0.32**	**7.93**	**50.5**
Furans	2,5-Dimethylfuran	4.07	ND	ND
	2-Vinylfuran	ND	ND	0.77
	Total	**4.07**	**0**	**0.77**
Aliphatic hydrocarbons	Cycloheptatriene	2.22	ND	ND
	Cyclooctatetraene	ND	0.32	ND
	1,2,6,6-Tetramethylcyclohexa-1,3-diene	ND	0.56	ND
	1,2-Bismethylenecyclobutane	0.42	ND	ND
	1-Methyl-3-(2-methylcyclopropyl)cyclopropene	0.44	0.87	ND
	1,1,2,2-Tetramethyl-3-methylenecyclopropane	0.58	ND	ND
	Octahydro-1-oxa-cycloprop[c]indene	0.7	ND	ND
	1,5-Heptadiene	ND	0.91	1
	Total	**4.36**	**2.66**	**1**