

Supplementary Material

Effect of Blending Dimethyl Carbonate and Ethanol with Gasoline on Combustion Characteristics

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1. Properties of fuels used in this study.

Table S1. Properties of DMC/gasoline blends.

	Gasoline	DMC20% /Gasoline80%	DMC40% /Gasoline60%	DMC60% /Gasoline40%	DMC
RON	92.2	94.3	98.4	108.0	121.0
MON	82.4	85.6	90.0	98.8	102.5
Density@15°C [g/cm ³]	0.7323	0.7987	0.8679	0.9379	1.076
Vapor pressure@15°C [kPa]	58.07	59.8	55.5	47.9	13.5
Total heating value [kJ/g]	46.09	37.94	31.11	25.15	16.11
Elemental analysis					
C [mass%]	86.5	-	63.0	-	40.2
H [mass%]	13.5	-	10.1	-	6.8
O [mass%]	0.00	-	26.4	-	49.3

Table S2. Properties of ethanol/gasoline blends.

	Gasoline	Ethanol20% /Gasoline80%	Ethanol40% /Gasoline60%	Ethanol60% /Gasoline40%	Ethanol
RON	92.2	95.3	98.2	101.2	106.0
MON	82.4	84.6	86.6	88.6	91.9
Density@15°C [g/cm ³]	0.7323	0.7471	0.7587	0.7710	0.7945
Vapor pressure@15°C [kPa]	58.07	41.27	32.76	25.82	16.14
Total heating value [kJ/g]	46.09	42.13	38.53	35.20	29.85
Elemental analysis					
C [mass%]	86.5	78.3	70.6	63.6	52.4
H [mass%]	13.5	13.4	13.3	13.3	13.1
O [mass%]	0.00	8.4	16.1	23.2	34.5