

Supplementary material

Conditions for and Characteristics of the Dispersion of Gel Fuel Droplets during Ignition

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Table S1. Static contact angles ($\theta \pm \Delta\theta$) formed by droplets of studied liquids and surfaces of AMG-6 and PTFE.

Liquid	$\theta \pm \Delta\theta$ (°) on AMG-6	$\theta \pm \Delta\theta$ (°) on PTFE
1st group (polar liquids)		
Water	88.5 ± 2.5	105.0 ± 3.5
Monoethanolamine	69.2 ± 2.2	90.1 ± 2.1
2nd group (dispersive liquids with a high value of the polar part)		
Glycerol	72.1 ± 2.6	90.3 ± 2.1
Ethylene glycol	56.3 ± 1.8	81.0 ± 2.0
3rd group (dispersive liquids with a low value of the polar part)		
Acetone	< 5	44.5 ± 2.8
Ethyl alcohol 95%	< 5	35.5 ± 2.9
4th group (dispersive liquids)		
Diiodomethane	64.0 ± 2.4	77.9 ± 4.5
Dodecane	10.1 ± 2.9	49.0 ± 3.5
Synthetic engine oil	22.4 ± 3.1	54.8 ± 3.4
Compressor oil	25.8 ± 2.9	53.4 ± 3.2
Oil TEDEX TU 32	29.7 ± 3.6	57.5 ± 3.9

Table S2. Surface free energy the liquid-liquid interface formation

Binary liquid	ΔG
Water + Monoethanolamine	-117.93
Water + Glycerol	-130.19
Water + Ethylene glycol	-110.45
Water + Acetone	-69.05
Water + Ethyl alcohol 95%	-69.70

Water + Diiodomethane	-66.56
Water + Dodecane	-47.06
Water + Synthetic engine oil	-69.72
Water + Compressor oil	-50.84
Water + Oil TEDEX TU 32	-70.22
Monoethanolamine + Glycerol	-108.47
Monoethanolamine + Ethylene glycol	-92.65
Monoethanolamine + Acetone	-59.86
Monoethanolamine + Ethyl alcohol 95%	-59.54
Monoethanolamine + Diiodomethane	-61.81
Monoethanolamine + Dodecane	-43.70
Monoethanolamine + Synthetic engine oil	-61.89
Monoethanolamine + Compressor oil	-46.97
Monoethanolamine + Oil TEDEX TU 32	-62.68
Glycerol + Ethylene glycol	-109.75
Glycerol + Acetone	-75.28
Glycerol + Ethyl alcohol 95%	-72.93
Glycerol + Diiodomethane	-86.71
Glycerol + Dodecane	-61.31
Glycerol + Synthetic engine oil	-80.98
Glycerol + Compressor oil	-65.40
Glycerol + Oil TEDEX TU 32	-82.75
Ethylene glycol + Acetone	-66.70
Ethylene glycol + Ethyl alcohol 95%	-64.09
Ethylene glycol + Diiodomethane	-79.24
Ethylene glycol + Dodecane	-56.03
Ethylene glycol + Synthetic engine oil	-72.59

Ethylene glycol + Compressor oil	-59.65
Ethylene glycol + Oil TEDEX TU 32	-74.37
Acetone + Ethyl alcohol 95%	-46.88
Acetone + Diiodomethane	-67.01
Acetone + Dodecane	-47.39
Acetone + Synthetic engine oil	-57.35
Acetone + Compressor oil	-50.10
Acetone + Oil TEDEX TU 32	-59.32
Ethyl alcohol 95% + Diiodomethane	-59.63
Ethyl alcohol 95% + Dodecane	-42.17
Ethyl alcohol 95% + Synthetic engine oil	-52.40
Ethyl alcohol 95% + Compressor oil	-44.70
Ethyl alcohol 95% + Oil TEDEX TU 32	-53.99
Diiodomethane + Dodecane	-71.84
Diiodomethane + Synthetic engine oil	-80.64
Diiodomethane + Compressor oil	-75.43
Diiodomethane + Oil TEDEX TU 32	-84.33
Dodecane + Synthetic engine oil	-57.02
Dodecane + Compressor oil	-53.34
Dodecane + Oil TEDEX TU 32	-59.63
Synthetic engine oil + Compressor oil	-60.10
Synthetic engine oil + Oil TEDEX TU 32	-69.41
Compressor oil + Oil TEDEX TU 32	-62.82
