

Vaporizing vs Combusting Sprays

High-Speed Schlieren Movies of Diesel Sprays

Parameter	Vaporizing	Combusting
Ambient O ₂ [%]	0	21
Ambient Temperature [K]	1000	1000
Ambient Density [kg/m ³]	29	29
ΔP_{inj} [MPa]	139	137
Orifice Diameter [mm]	0.200	0.200

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Fuel is #2 diesel fuel. Injector tip to wall is 109 mm.

Soot luminosity is visible from the combusting spray. The dark region outside of the combusting spray is the Schlieren effect from hot combustion products at the edge of the spray—not soot. The combusting spray penetrates more quickly than the vaporizing spray because of dilation of hot combustion products within the spray.

*For further information, contact Web Grand Pooh-Bar
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