

Tabela 1 - Propriedades de Bio-óleos de Pirólise Rápida e métodos de teste adequados (Oasmaa et al., 2015)

property	typical range	applicable test methods
higher heating value, HHV	14–19 MJ/kg	DIN51900, ASTM D240
lower heating value, LHV	13–18 MJ/kg	DIN51900, ASTM D240, ASTM D5291 for H
water	20–30 wt %	ASTM E203
pH	2–3	ASTM E70
TAN	70–100 mg KOH/g	ASTM D664
kinematic viscosity at 40 °C	15–40 mm ² /s	EN ISO 3104, ASTM D445
density at 15 °C	1.11–1.30 kg/dm ³	EN ISO 12185, ASTM D4052
pour point	–9..-36 °C	EN ISO 3016, ASTM D97
carbon	50–60 wt % (d.b.)	ASTM D5291
hydrogen	7–8 wt % (d.b.)	ASTM D5291
nitrogen	<0.5 wt % (d.b.)	ASTM D5291
sulfur	<0.05 wt % (d.b.)	EN ISO 20846, ASTM D 5453
oxygen	35–40 wt % (d.b.)	as difference
solids	<1 wt %	ASTM D7579
MCR, CCR	17–23 wt %	ASTM D4530, ASTM D189
ash	<0.3 wt %	EN ISO 6245
flash point	40–110 °C	EN ISO 2719, ASTM D93B
sustained combustibility	does not sustain combustion	EN ISO 9038
Na, K, Ca, Mg	<0.06 wt % (d.b.)	EN ISO 16476
chlorine	<75 ppm	not specified