

ATTACHMENT B – HECO BIOFUEL FUEL SPECIFICATION

Required Specifications

Property	ASTM Method	Limit
Pour Point	D 97 or D 5949	125° F max
Total Acid Number	D 664	15 mg KOH/ml max
Moisture & Impurities (M&I)	D 2709	0.1% max
Heating Value (high)	D 240	16,500 BTU/lb min
FFA (Free fatty acids)	Per PORAM	Report Results
Iodine value	AOCS Cd 1c-85	120 g iodine / 100 g max
Viscosity	D 7042	21 Cst @ 50° C min 100 Cst @ 40° C max
Flash Point	D 93	150° F min
Sulfur Content	D 1552, D 2622 or D 4294	0.00150% Weight max
Nitrogen	D 4629 or D 5762	.50% Weight max
Vanadium	D 5863	50 ppm max
API Gravity	D 4052	Report Degrees

Preferred Specifications

Property	Method	Limit
Pour Point	D 97 or D5949	70° F min, 90° F max
Density	ISO 3675 or 12185	991 kg/m ³ max
Ignition Property Cetane	FIA Test	35 min
Ignition Property CCAI	FIA Test	870 max
Total Sediment Existent	ISO 10307-1	.05% m/m max
Water, Before Engine	ISO 3733	.20% v/v max
Micro Carbon Residue	ISO 10370	.50% m/m max
Ash	ISO 6245 / LP1001	.01% m/m max
Phosphorus	ISO 10478 extended	16 mg/kg max
Aluminum	ISO 10478	3 mg/kg max
Ca + Mg	ISO 10478 extended	25 mg/kg max
Iron	ISO 10478 extended	15 mg/kg max
Silicon (organic)	not specified	.5 mg/kg max
Silicon (inorganic)	ISO 10478	15 mg/kg max
Alkali Content (Na + K)	ISO 10478 extended	13 mg/kg max
Cloud Point	ISO 3015	55° F max
Cold Filter Plugging Point	IP 309	55° F max
Copper Strip Corrosion	ASTM D130	1b max
Steel Corrosion (24/72 hours @ 20, 60, and 120 °C)	LP 2902	No signs of corrosion
Strong Acid Number	ASTM D664	0.0 mg KOH/g max
Synthetic Polymers	LP2401 ext. and LP3402	Report