

ZB Grade Ultra Low Sulfur Biodiesel Fuel Blend Stock Specifications

Product Property	*Test Method	Origin		Deliveries ^{1/}
		Minimum	Maximum	
Density, Kg/L	D4052	Report		
Filtration, Seconds (Modified), max	D7501		125	
Flash Point, °C	D93	130		
Cloud Point, °F	D2500		36	
Carbon Residue on 100% Sample, wt %	D4530		0.050	
Sulfur, ppm (mg/g) ^{2/}	D5453		15	
Stability (Three Parameters)				
Rancimat, (hrs.)	EN14112	6		3
Copper Corrosion	D130		1	
Cetane Number	D613	47		
Distillation	D1160		680	
Atmospheric equivalent temperature				
90% Recovered, °F or				
Simulated Distillation, (Modified)	D2887		680	
Viscosity at 104 °F, cst	D445	1.9	6.0	
Sulfated Ash, wt %	D874		0.020	
Free Glycerin, wt %	D6584		0.020	
Monoglyceride, wt%	D6584		0.450	
Total Glycerin, wt %	D6584		0.240	
Acid Number, mgKOH/g	D664		0.40	0.50
Haze Rating @ 60 °F	D4176		2	
Phosphorus content, wt%	D4951		0.001	
Water & Sediment, vol%	D2709		0.050	
Minimum Delivery Temperature	MMP	+50		
Calcium and Magnesium, combined, ppm (mg/g)	EN14538		5.0	
Sodium & Potassium combined, ppm (mg/g)	EN14538		5.0	
Workmanship ^{3/}	MMP			

ZB Grade Ultra Low Sulfur Biodiesel Fuel Blend Stock Specifications (continued)

- 1/ Delivered products meets all applicable requirements at time and place of delivery.
- 2/ All results provided must use an EPA qualified instrument.
- 3/ **Workmanship:** At the time of acceptance, the finished fuel shall be visually free from undissolved water, sediment, or suspended matter and shall be clear and bright.

Additives:
BioExtend 30
Eastman - Tenox 21
Kemin BF 320
NALCO EC 5609A

*Alternative methods found in association with D6751 the ASTM specification for biodiesel are accepted.