

<b>aggreko</b>	<b>Specification</b>  Diesel Fuel Oil for use in Aggreko Engines	No.	G32300022
		Rev.	D
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Aggreko diesel engines have been developed to take advantage of the high-energy content and generally lower cost of No.2 diesel fuels. Experience has shown that the diesel engines will operate satisfactorily on No.1 fuels or other fuels within the following specifications.

**Distillate Fuels:**

The following specifications apply with relevant ASTM test method Specification of Fuel Oil properties - ASTM D-975.

**(Table 1)**

<b>Diesel Fuel Test Methods (No1 and No2 Diesel)</b>				
Test	Test Standards Primary Alternative		Limits	Notes
Active sulfur (Copper strip corrosion at 50°C)	ASTM D130	ISO 2160	< #2	
Ash	ASTM D482	ISO 6245	0.02% by mass	
Bacteria / biological growth	ASTM D7463	IP385	Nil	
Carbon residue	ASTM D4530 or ISO 10370	ASTM D189	<0.35% mass on 10% residuum	ASTM D4530 and ISO 10370 are identical
Cetane index	ASTM D4737	ISO 4264	-	This test is not preferred
Cetane number	ASTM D613	ISO 5165	42 minimum above 0°C 45 minimum below 0°C	
Cloud point	ASTM D2500	ISO 3015	6°C below operating ambient	
Cold filter plugging point	ASTM D6371	IP 309	-	Consult Engineering for operation below 0°C Not a standard test
Density	ASTM D4052	ISO 3675	0.816 – 0.876 @ 15°C	SFC quoted at 0.85kg/L
Distillation	ASTM D86	ISO 3405	90% by 360°C, all by 385°C	Curve must be smooth and continuous
Flash point	ASTM D93	-	Minimum 55°C	
Fuel cleanliness	ISO 4406	-	18/16/13	Entering the Genset
Net heat of combustion	ASTM D240	-	-	42700kJ/kg nominal
Lubricity	ASTM D6078	ASTM D6079 or ISO 12156	<b>ASTM D6078</b> - Scuffing Load Ball-on-Cylinder Lubricity Evaluator (SLBOCLE): Minimum of 3100 grams <b>ASTM D6079 or ISO 12156</b> - High Frequency Reciprocating Rig (HFRR): Maximum of 0.45 mm Wear Scar Diameter (WSD) at 60°C	
Pour point	ASTM D97	-	8°C below operating ambient	Not a standard test
Sulfur Content	ASTM D4294	ASTM D2622	<0.5% mass	
Water & sediment	ASTM D2709	ASTM D1796	<0.05% volume	Mechanical fuel systems – KTA50
	ASTM D2709	ASTM D1796	<0.02% volume	Electronic fuel systems – QSK50
Total Acid Number	ASTM D664	-	<0.5	Not a standard test
Viscosity @ 40°C	ASTM D445	ISO 3104	1.3 – 4.1 Centistokes	

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Where a distillate type of fuel is specified, any declared specific fuel consumption of a liquid-fuel engine given in mass units shall be related to a lower calorific value of 42700 kJ/kg and density of 0.85kg/L.

Where any other type of fuel is specified, the declared specific fuel consumption shall either be expressed in energy units, or both the specific fuel consumption in mass units and the associated lower calorific value shall be stated.

**Note: “Table 1” references fuel quality to be used outside of the European Union (EU), Fuel for UK Non Road Mobile Machinery (NRMM) applications must meet BS2869:2010 and EN590 for use across Continental Europe, legislation permits a maximum sulphur content of 10ppm.**

**Note: For information regarding Genset fuel consumption, please refer to DATA SHEET G08300227**

**Biodiesel:**

<b>Biodiesel Fuel Test Methods</b>				
Test	Test Standards		Limits	Notes
	Primary	Alternative		
FAME content	EN 14078	ASTM D6751	-	Dependent upon biodiesel blend
Phosphorous content	ASTM D7111	EN 14214	<10mg/kg	
Total glycerol content	ASTM D6584	EN 14214	<0.24% mass	

EN14214 is the European Standard that describes the minimum requirements for biodiesel that has been produced from rapeseed fuel stock (also known as RME). This applies to B100.

ASTM D6751 is the US standard specification for (B100) blend stock for distillate fuels.

In most cases it is unlikely that samples of the blend stock will be available for test. Therefore the tests to be conducted on biodiesel are as per the above with the following additions. Note that this list is not exhaustive but represents a suite of tests considered to ensure fuel acceptability.

**Note: For information regarding the use of Biodiesel in aggreko products, please refer to PRODUCT BULLETIN M05000303**

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