

TABLE 1 OF § 1065.701—EXAMPLES OF SERVICE-ACCUMULATION AND FIELD-TESTING FUELS—Continued

Fuel category	Subcategory	Reference procedure <sup>1</sup>
Gas turbine fuel .....	Gas turbine .....	ASTM D1655
	Jet B wide cut .....	ASTM D6615
	General .....	ASTM D2880

<sup>1</sup> ASTM specifications are incorporated by reference in § 1065.1010.

[70 FR 40516, July 13, 2005, as amended at 73 FR 37339, June 30, 2008; 73 FR 59341, Oct. 8, 2008; 75 FR 23057, Apr. 30, 2010; 79 FR 23807, Apr. 28, 2014]

**§ 1065.703 Distillate diesel fuel.**

(a) Distillate diesel fuels for testing must be clean and bright, with pour and cloud points adequate for proper engine operation.

(b) There are three grades of #2 diesel fuel specified for use as a test fuel. See

the standard-setting part to determine which grade to use. If the standard-setting part does not specify which grade to use, use good engineering judgment to select the grade that represents the fuel on which the engines will operate in use. The three grades are specified in the following table:

TABLE 1 OF § 1065.703—TEST FUEL SPECIFICATIONS FOR DISTILLATE DIESEL FUEL

Property	Unit	Ultra low sulfur	Low sulfur	High sulfur	Reference procedure <sup>1</sup>
Cetane Number .....	— .....	40–50	40–50	40–50	ASTM D613.
Distillation range:					
Initial boiling point .....	°C .....	171–204	171–204	171–204	ASTM D86.
10 pct. point .....	.....	204–238	204–238	204–238	ASTM D86.
50 pct. point .....	.....	243–282	243–282	243–282	ASTM D86.
90 pct. point .....	.....	293–332	293–332	293–332	ASTM D86.
Endpoint .....	.....	321–366	321–366	321–366	ASTM D86.
Gravity .....	°API .....	32–37	32–37	32–37	ASTM D4052.
Total sulfur, ultra low sulfur .....	mg/kg .....	7–15	.....	.....	See 40 CFR 80.580.
Total sulfur, low and high sulfur .....	mg/kg .....	.....	300–500	800–2500	ASTM D2622 or alternates as allowed under 40 CFR 80.580.
Aromatics, min. (Remainder shall be paraffins, naphthenes, and olefins).	g/kg .....	100	100	100	ASTM D5186.
Flashpoint, min. ....	°C .....	54	54	54	ASTM D93.
Kinematic Viscosity .....	cSt .....	2.0–3.2	2.0–3.2	2.0–3.2	ASTM D445.

<sup>1</sup> ASTM procedures are incorporated by reference in § 1065.1010. See § 1065.701(d) for other allowed procedures.

(c) You may use the following non-metallic additives with distillate diesel fuels:

- (1) Cetane improver.
- (2) Metal deactivator.
- (3) Antioxidant, dehazer.
- (4) Rust inhibitor.
- (5) Pour depressant.
- (6) Dye.
- (7) Dispersant.
- (8) Biocide.

[70 FR 40516, July 13, 2005, as amended at 73 FR 37340, June 30, 2008; 73 FR 59341, Oct. 8, 2008; 75 FR 23057, Apr. 30, 2010; 77 FR 2464, Jan. 18, 2012; 79 FR 23807, Apr. 28, 2014]

**§ 1065.705 Residual and intermediate residual fuel.**

This section describes the specifications for fuels meeting the definition of residual fuel in 40 CFR 80.2, including fuels marketed as intermediate fuel. Residual fuels for service accumulation and any testing must meet the following specifications:

(a) The fuel must be a commercially available fuel that is representative of the fuel that will be used by the engine in actual use.

(b) The fuel must be free of used lubricating oil. Demonstrate this by showing that the fuel meets at least one of the following specifications.

**§ 1065.705**

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(1) Zinc is at or below 15 mg per kg of fuel based on the procedures specified in IP470, IP501, or ISO 8217 (incorporated by reference in §1065.1010).

(2) Phosphorus is at or below 15 mg per kg of fuel based on the procedures specified in IP500, IP501, or ISO 8217 (incorporated by reference in §1065.1010).

(3) Calcium is at or below 30 mg per kg of fuel based on the procedures specified in IP470, IP501, or ISO 8217 (incorporated by reference in §1065.1010).

(c) The fuel must meet the specifications for one of the categories in the following table:

TABLE 1 OF § 1065.705—SERVICE ACCUMULATION AND TEST FUEL SPECIFICATIONS FOR RESIDUAL FUEL

Property	Unit	Category ISO-F-										Reference Procedure <sup>1</sup>
		RMA 30	RMB 30	RMD 80	RME 180	RMF 180	RMG 380	RMH 380	RMK 380	RMH 700	RMK 700	
Density at 15 °C, max	kg/m <sup>3</sup>	960.0	975.0	980.0	991.0	991.0	991.0	1010.0	1010.0	1010.0	1010.0	ISO 3675 or ISO 12185 (see also ISO 8217).
Kinematic viscosity at 50 °C, max	cSt	30.0		80.0	180.0		380.0		700.0			ISO 3104.
Flash point, min	°C	60		60	60		60		60			ISO 2719 (see also ISO 8217).
Pour point (upper): Winter quality, max Summer quality, max	°C	0 6	24 24	30 30	30 30		30 30		30 30			ISO 3016.
Carbon residue, max	(kg/kg) %	10		14	15	20	18	22	22			ISO 10370.
Ash, max	(kg/kg) %	0.10		0.10	0.10	0.15	0.15		0.15			ISO 6245.
Water, max	(m <sup>3</sup> /m <sup>3</sup> ) %	0.5		0.5	0.5		0.5		0.5			ISO 3733.
Sulfur, max	(kg/kg) %	3.50		4.00	4.50		4.50		4.50			ISO 8754 or ISO 14596 (see also ISO 8217).
Vanadium, max	mg/kg	150		350	200	500	300	600	600			ISO 14597 or IP 501 or IP 470 (see also ISO 8217).
Total sediment potential, max	(kg/kg) %	0.10		0.10	0.10		0.10		0.10			ISO 10307-2 (see also ISO 8217).
Aluminum plus silicon, max	mg/kg	80		80	80		80		80			ISO 10478 or IP 501 or IP 470 (see also ISO 8217:2012).

<sup>1</sup> ISO procedures are incorporated by reference in § 1065.1010. See § 1065.701(d) for other allowed procedures.

[79 FR 23808, Apr. 28, 2014]