ISO 8178–1 (incorporated by reference in § 1065.1010).

§ 1065.135 NO_X analyzers.

This section describes the requirements for chemiluminescent detectors (CLD) used to measure NO_X. Good engineering practice may require the use of other detectors.

(a) A CLD must meet the following requirements:

(1) Make sure your CLD meets the accuracy and precision specifications in ISO 8178–1 (incorporated by reference in § 1065.1010).

(2) The NO to NO_2 converter must have an efficiency of at least 90 percent.

(3) Use an overflow sampling system for continuous CLDs. (In an overflow system excess zero gas or span gas spills out of the probe when you are doing zero or span checks.)

(4) You do not need a heated CLD to test spark-ignition engines.

(b) Using CLDs is generally acceptable even though they measure only NO and NO_2, since conventional engines do not emit significant amounts of other NO_X species.

§ 1065.140 CO and CO_2 analyzers.

This section describes the requirements for non-dispersive infrared absorption detectors (NDIR) to measure CO and CO_2.

(a) The NDIR must meet the applicable accuracy and precision specifications of ISO 8178–1 (incorporated by reference in § 1065.1010).

(b) The NDIR must meet the applicable quench and interference requirements of ISO 8178–1 (incorporated by reference in § 1065.1010).

§ 1065.145 Smoke meters. [Reserved]

§ 1065.150 Flow meters.

(a) Flow meters must have accuracy and precision of ±2 percent of point or better and be traceable to NIST standards.

(b) You may correct flow measurements for temperature or pressure, if your temperature and pressure measurements have accuracy and precision of ±2 percent of point or better (absolute).

§ 1065.155 Temperature and pressure sensors.

(a) Except where we specify otherwise in this part, must meet the applicable accuracy and precision specifications of ISO 8178–1 (incorporated by reference in § 1065.1010).

(b) Use good engineering judgment to design and operate your temperature and pressure measuring systems to minimize delays in response time and avoid hysteresis.

Subpart C—Test Fuels and Analytical Gases

§ 1065.201 General requirements for test fuels.

(a) For all emission tests, use test fuels meeting the specifications in this subpart, unless the standard-setting part directs otherwise. For any service accumulation on a test engine, if we do not specify a fuel, use the specified test fuel or a fuel typical of what you would expect the engine to use in service.

(b) We may require you to test the engine with each type of fuel it can use (for example, gasoline and natural gas).

(c) If you will produce engines that can run on a type of fuel (or mixture of fuels) that we do not specify in this subpart, we will allow you to test with fuel representing commercially available fuels of that type. However, we must approve your fuel's specifications before you may use it for emission testing.

(d) You may use a test fuel other than those we specify in this subpart if you do all of the following:

(1) Show that it is commercially available.

(2) Show that your engines will use only the designated fuel in service.

(3) Show that operating the engines on the fuel we specify would increase emissions or decrease durability.

(4) Get our written approval before you start testing.

(e) We may allow you to use other test fuels (for example, California Phase 2 gasoline) if they do not affect the demonstration of compliance.

§ 1065.205 Test fuel specifications for distillate diesel fuel.

(a)(1) 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 as follows:

Item		ASTM test method No.[1]	Ultra low sulfur	Low sulfur	High sulfur
(i) Cetane Number		D 613	40–50	40–50	40–50
(ii) Cetane Index		D 976	40–50	40–50	40–50
(iii) Distillation range:					
(A) IBP	°C	D 86	171–204	171–204	171–204
(B) 10 pct. point	°C	D 86	204–238	204–238	204–238
(C) 50 pct. point	°C	D 86	243–282	243–282	243–282
(D) 90 pct. point	°C	D 86	293–332	293–332	293–332
(E) EP	°C	D 86	321–366	321–366	321–366
(iv) Gravity	°API	D 287	32–37	32–37	32–37
(v) Total sulfur	ppm	D 2622	7–15	300–500	2000–4000
(vi) Hydrocarbon composition:					
Aromatics, minimum. (Remainder shall be paraffins, naphthenes, and olefins).	pct	D 5186	10	10	10
(vii) Flashpoint, min	°C	D 93	54	54	54
(viii) Viscosity	centistokes	D 445	2.0–3.2	2.0–3.2	2.0–3.2

[1] All ASTM standards are incorporated by reference in §1065.1010.

(2) [Reserved]

(b) There are no specifications for #1 diesel fuel. See §1065.201(d) if your engines are designed to operate only on #1 diesel fuel.

[69 FR 39260, June 29, 2004]

EFFECTIVE DATE NOTE: At 69 FR 39260, June 29, 2004, text was added to §1065.205, effective Aug. 30, 2004.

§1065.210 Test fuel specifications for gasoline.

Gasoline used as a test fuel must meet the following specifications:

(a) Unless the standard-setting part requires testing with fuel appropriate for low temperatures, use gasoline test fuels meeting the specifications in the following table:

TABLE 1 OF §1065.210—GENERAL TEST-FUEL SPECIFICATIONS FOR GASOLINE

Item	Procedure[1]	Value
Distillation Range:		
1. Initial boiling point, °C	ASTM D 86–01	23.9–35.0[2]
2. 10% point, °C	ASTM D 86–01	48.9–57.2
3.50% point, °C	ASTM D 86–01	93.3–110.0
4. 90% point, °C	ASTM D 86–01	148.9–162.8
5. End point, °C (maximum)	ASTM D 86–01	212.8.
Hydrocarbon composition:		
1. Olefins, volume %	ASTM D 1319–02	10 maximum
2. Aromatics, volume %	ASTM D 1319–02	35 maximum
3. Saturates	ASTM D 1319–02	Remainder
Lead (organic), g/liter	ASTM D 3237–97	0.013 maximum
Phosphorous, g/liter	ASTM D 3231–02	0.0013 maximum
Sulfur, weight %	ASTM D 1266–98	0.008 maximum
Volatility (Reid Vapor Pressure), kPa	ASTM D 323–99a	60.0 to 63.4.[2,3]

[1] All ASTM standards are incorporated by reference in §1065.1010.

[2] For testing at altitudes above 1 219 m, the specified volatility range is 52 to 55 kPa (7.5 to 8.0) and the specified initial boiling point range is 23.9° to 40.6° C.

[3] For testing unrelated to evaporative emissions, the specified range is 55 to 63 kPa (8.0 to 9.1 psi).