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TABLE B4—CERTIFICATION STANDARD ATMOSPHERIC HAIL SIZE DISTRIBUTION—Continued

Hail diameter (mm)	Contribution total HWC (%)
Total	100.00

Median diameter of hail is 16 mm
NOTE: Source of data—Results of the Aerospace Industries Association (AIA Propulsion Committee (PC) Study, Project PC 338–1, June 1990.

[Doc. No. 28652, 63 FR 14799, Mar. 26, 1998]

PART 34—FUEL VENTING AND EXHAUST EMISSION REQUIREMENTS FOR TURBINE ENGINE POWERED AIRPLANES

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AUTHORITY: 42 U.S.C 4321 *et seq.*, 75721 49 U.S.C. 106(g), 40113, 44701–44702, 44704, 44714

SOURCE: Docket No. 25613, 55 FR 32861, Aug. 10, 1990, unless otherwise noted.

Subpart A—General Provisions

§ 34.1 Definitions.

As used in this part, all terms not defined herein shall have the meaning given them in the Clean Air Act, as amended (42 U.S.C. 7401 *et seq.*):

Act means the Clean Air Act, as amended (42 U.S.C. 7401 *et seq.*).

Administrator means the Administrator of the Federal Aviation Administration or any person to whom he has delegated his authority in the matter concerned.

Administrator of the EPA means the Administrator of the Environmental Protection Agency and any other officer or employee of the Environmental Protection Agency to whom the authority involved may be delegated.

Aircraft as used in this part means any airplane as defined in 14 CFR part 1 for which a U.S. standard airworthiness certificate or equivalent foreign airworthiness certificate is issued.

Aircraft engine means a propulsion engine which is installed in, or which is manufactured for installation in, an aircraft.

Aircraft gas turbine engine means a turboprop, turbofan, or turbojet aircraft engine.

Characteristic level has the meaning given in Appendix 6 of ICAO Annex 16 as of July 2008. The characteristic level is a calculated emission level for each pollutant based on a statistical assessment of measured emissions from multiple tests.¹

¹This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document can be obtained from the ICAO, Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada, phone +1 514-954-8022, or www.icao.int or sales14icao.int. Copies can be reviewed at the FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts, 781-238-7101, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/>

Class TP means all aircraft turboprop engines.

Class TF means all turbofan or turbojet aircraft engines or aircraft engines designed for applications that otherwise would have been fulfilled by turbojet and turbofan engines except engines of class T3, T8, and TSS.

Class T3 means all aircraft gas turbine engines of the JT3D model family.

Class T8 means all aircraft gas turbine engines of the JT8D model family.

Class TSS means all aircraft gas turbine engines employed for propulsion of aircraft designed to operate at supersonic flight speeds.

Commercial aircraft engine means any aircraft engine used or intended for use by an “air carrier” (including those engaged in “intrastate air transportation”) or a “commercial operator” (including those engaged in “intrastate air transportation”) as these terms are defined in Title 49 of the United States Code and Title 14 of the Code of Federal Regulations.

Commercial aircraft gas turbine engine means a turboprop, turbofan, or turbojet commercial aircraft engine.

Date of manufacture of an engine is the date the inspection acceptance records reflect that the engine is complete and meets the FAA approved type design.

Derivative engine for emissions certification purposes means an engine that has the same or similar emissions characteristics as an engine covered by a U.S. type certificate issued under 14 CFR part 33. These characteristics are specified in §34.48.

Emission measurement system means all of the equipment necessary to transport the emission sample and measure the level of emissions. This includes the sample system and the instrumentation system.

Engine model means all commercial aircraft turbine engines which are of the same general series, displacement, and design characteristics and are approved under the same type certificate.

Excepted, as used in §34.9, means an engine that may be produced and sold that does not meet otherwise applicable standards. Excepted engines must

conform to regulatory conditions specified for an exception in §34.9. Excepted engines are subject to the standards of this part even though they are not required to comply with the otherwise applicable requirements. Engines excepted with respect to certain standards must comply with other standards from which they are not specifically excepted.

Exempt means an engine that does not meet certain applicable standards but may be produced and sold under the terms allowed by a grant of exemption issued pursuant to §34.7 of this part and part 11 of this chapter. Exempted engines must conform to regulatory conditions specified in the exemption as well as other applicable regulations. Exempted engines are subject to the standards of this part even though they are not required to comply with the otherwise applicable requirements. Engines exempted with respect to certain standards must comply with other standards as a condition of the exemption.

Exhaust emissions means substances emitted into the atmosphere from the exhaust discharge nozzle of an aircraft or aircraft engine.

Fuel venting emissions means raw fuel, exclusive of hydrocarbons in the exhaust emissions, discharged from aircraft gas turbine engines during all normal ground and flight operations.

In-use aircraft gas turbine engine means an aircraft gas turbine engine which is in service.

Introduction date means the date of manufacture of the first individual production engine of a given engine model or engine type certificate family to be certificated. Neither test engines nor engines not placed into service affect this date.

New aircraft turbine engine means an aircraft gas turbine engine which has never been in service.

Power setting means the power or thrust output of an engine in terms of kilonewtons thrust for turbojet and turbofan engines or shaft power in terms of kilowatts for turboprop engines.

Rated output (rO) means the maximum power/thrust available for take-off at standard day conditions as approved for the engine by the Federal

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Aviation Administration, including reheat contribution where applicable, but excluding any contribution due to water injection, expressed in kilowatts or kilonewtons (as applicable), rounded to at least three significant figures.

Rated pressure ratio (rPR) means the ratio between the combustor inlet pressure and the engine inlet pressure achieved by an engine operation at rated output, rounded to at least three significant figures.

Reference day conditions means the reference ambient conditions to which the gaseous emissions (HC and smoke) are to be corrected. The reference day conditions are as follows: Temperature=15 °C, specific humidity=0.00629 kg H₂O/kg of dry air, and pressure=101325 Pa.

Sample system means the system which provides for the transportation of the gaseous emission sample from the sample probe to the inlet of the instrumentation system.

Shaft power means only the measured shaft power output of a turboprop engine.

Smoke means the matter in exhaust emissions which obscures the transmission of light.

Smoke number (SN) means the dimensionless term quantifying smoke emissions.

Standard day conditions means standard ambient conditions as described in the United States Standard Atmosphere 1976, (i.e., temperature=15 °C, specific humidity=0.00 kg H₂O/kg dry air, and pressure=101325 Pa.)

Taxi/idle (in) means those aircraft operations involving taxi and idle between the time of landing roll-out and final shutdown of all propulsion engines.

Taxi/idle (out) means those aircraft operations involving taxi and idle between the time of initial starting of the propulsion engine(s) used for the taxi and the turn onto the duty runway.

Tier, as used in this part, is a designation related to the NO_x emission standard for the engine as specified in § 34.21 or § 34.23 of this part (e.g., Tier 0).

[Doc. No. 25613, 55 FR 32861, Aug. 10, 1990; 55 FR 37287, Sept. 10, 1990, as amended by Amdt. 34–3, 64 FR 5558, Feb. 3, 1999; Amdt. 34–5, 77 FR 76849, Dec. 31, 2012]

§ 34.2 Abbreviations.

The abbreviations used in this part have the following meanings in both upper and lower case:

CO₂ Carbon dioxide
CO Carbon monoxide
EPA United States Environmental Protection Agency
FAA Federal Aviation Administration, United States Department of Transportation
g Gram(s)
HC Hydrocarbon(s)
HP Horsepower
hr Hour(s)
H₂O water
kg Kilogram(s)
kJ Kilojoule(s)
kN Kilonewton(s)
kW Kilowatt(s)
lb Pound(s)
LTO Landing and takeoff
min Minute(s)
NO_x Oxides of nitrogen
Pa Pascal(s)
rO Rated output
rPR Rated pressure ratio
sec Second(s)
SP Shaft power
SN Smoke number
T Temperature, degrees Kelvin
TIM Time in mode
°C Degrees Celsius
% Percent

[Doc. No. 25613, 55 FR 32861, Aug. 10, 1990, as amended by Amdt. 34–3, 64 FR 5559, Feb. 3, 1999; Amdt. 34–5, 77 FR 76850, Dec. 31, 2012]

§ 34.3 General requirements.

(a) This part provides for the approval or acceptance by the Administrator or the Administrator of the EPA of testing and sampling methods, analytical techniques, and related equipment not identical to those specified in this part. Before either approves or accepts any such alternate, equivalent, or otherwise nonidentical procedures or equipment, the Administrator or the Administrator of the EPA shall consult with the other in determining whether or not the action requires rulemaking under sections 231 and 232 of the Clean Air Act, as amended, consistent with the responsibilities of the Administrator of the EPA and the Secretary of Transportation under sections 231 and 232 of the Clean Air Act.