

**§ 86.000-28**

**40 CFR Ch. I (7-1-04 Edition)**

(d)(3)-(d)(6) [Reserved]. For guidance see § 86.094-26.

[61 FR 54883, Oct. 22, 1996]

**§ 86.000-28 Compliance with emission standards.**

Section 86.000-28 includes text that specifies requirements that differ from § 86.094-28 or § 86.098-28. Where a paragraph in § 86.094-28 or § 86.098-28 is identical and applicable to § 86.000-28, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.094-28.” or “[Reserved]. For guidance see § 86.098-28.”

(a)(1) This paragraph (a) applies to light duty vehicles.

(2) Each exhaust, evaporative and refueling emission standard (and family particulate emission limits, as appropriate) of § 86.000-8 applies to the emissions of vehicles for the appropriate useful life as defined in §§ 86.000-2 and 86.000-8.

(a)(3) [Reserved]. For guidance see § 86.094-28.

(a)(4) Introductory text [Reserved]. For guidance see § 86.098-28.

(a)(4)(i) Separate emission deterioration factors for each regulated exhaust constituent shall be determined from the FTP exhaust emission results of the durability-data vehicle(s) for each engine-system combination. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable FTP deterioration factors will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels. Separate evaporative and/or refueling emission deterioration factors shall be determined for each evaporative/refueling emission family-emission control system combination from the testing conducted by the manufacturer (gasoline-fueled and methanol-fueled vehicles only). Separate refueling emission deterioration factors shall be determined for each evaporative/refueling emission family-emission control system combination from the testing conducted by the manufacturer (petroleum-fueled diesel cycle vehicles not certified under the provisions of § 86.098-28(g) only).

(a)(4)(i)(A)-(a)(4)(i)(B)(2)(i) [Reserved]. For guidance see § 86.094-28.

(a)(4)(i)(B)(2)(ii) These interpolated values shall be carried out to a minimum of four places to the right of the decimal point before dividing one by the other to determine the deterioration factor. The results shall be rounded to three places to the right of the decimal point in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(a)(4)(i)(B)(2)(iii)-(a)(4)(i)(B)(2)(iv) [Reserved]. For guidance see § 86.094-28.

(a)(4)(i)(C)-(a)(4)(i)(D)(2) [Reserved]. For guidance see § 86.098-28.

(a)(4)(ii)(A)(1) The official exhaust emission test results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be multiplied by the appropriate deterioration factor: *Provided*, that if a deterioration factor as computed in paragraph (a)(4)(i)(B)(2)(ii) of this section is less than one, that deterioration factor shall be one for the purposes of this paragraph. For the SFTP composite standard of (NMHC+NO<sub>x</sub>), the measured results of NMHC and NO<sub>x</sub> must each be multiplied by their corresponding deterioration factors before the composite (NMHC+NO<sub>x</sub>) standard is calculated.

(2) The calculation specified in paragraph (a)(4)(ii)(A)(1) of this section may be modified with advance approval of the Administrator for engine-system combinations which are certified under the Alternative Service Accumulation Durability Program specified in § 86.094-13(e).

(a)(4)(ii)(B)-(a)(4)(ii)(C) [Reserved]. For guidance see § 86.098-28.

(a)(4)(iii) The emissions to compare with the standard (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of § 86.098-28 (a)(4)(ii)(B) and (C) and paragraph (a)(4)(ii)(A) of this section 211a for each emission-data vehicle. For the SFTP composite (NMHC+NO<sub>x</sub>) results, the individual deterioration factors must be applied to the applicable NMHC and NO<sub>x</sub> test results prior to calculating the adjusted composite

(NMHC+NO<sub>x</sub>) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in §86.164-00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard (or the family particulate emission limit, as appropriate), it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see §86.1). The rounded emission values may not exceed the standard (or the family particulate emission limit, as appropriate).

(a)(4)(iv) [Reserved]. For guidance see §86.094-28.

(a)(4)(v) [Reserved]. For guidance see §86.098-28.

(a)(5)-(a)(6) [Reserved]. For guidance see §86.094-28.

(a)(7) introductory text [Reserved]. For guidance see §86.098-28.

(a)(7)(i) Separate deterioration factors shall be determined from the exhaust emission results of the durability data vehicles for each emission standard applicable under §86.000-8, for each engine family group. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable deterioration factors determined from FTP exhaust emission results will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels. The evaporative and/or refueling emission deterioration factors for each evaporative/refueling family will be determined and applied in accordance with §86.098-28 (a)(4) introductory text, (a)(4)(i)(C) and (D), (a)(4)(ii)(B) and (C), and (a)(4)(v) and §86.094-28 (a)(4)(i)(A)-(a)(4)(i)(B)(2)(i), (a)(4)(i)(B)(2)(iii) and (iv), and (a)(4)(iv) and paragraphs (a)(4)(i) introductory, (a)(4)(i)(B)(2)(ii), (a)(4)(ii)(A), and (a)(4)(iii) of this section.

(a)(7)(ii)-(b)(4)(i) [Reserved]. For guidance see §86.094-28.

(b)(4)(ii) Separate exhaust emission deterioration factors for each regulated exhaust constituent, determined

from tests of vehicles, engines, subsystems, or components conducted by the manufacturer, shall be supplied for each standard and for each engine-system combination. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable deterioration factors determined from FTP exhaust emission results will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels.

(iii) The official exhaust emission results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph (b)(4)(iii).

(iv) The emissions to compare with the standard(s) (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of paragraph (b)(4)(iii) of this section for each emission-data vehicle. For the SFTP composite (NMHC+NO<sub>x</sub>) results, the individual deterioration factors must be applied to the applicable NMHC and NO<sub>x</sub> test results prior to calculating the adjusted composite (NMHC+NO<sub>x</sub>) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in §86.164-00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard, it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see §86.1).

(5)(i) Paragraphs (b)(5)(i)(A) and (B) of this section apply only to manufacturers electing to participate in the particulate averaging program.

(A) If a manufacturer chooses to change the level of any family particulate emission limit(s), compliance with the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family particulate emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the particulate standards in § 86.099-9 (a)(1)(iv) or (d)(1)(iv), or the composite particulate standard as defined in § 86.094-2, as appropriate, at the end of the product year.

(ii) Paragraphs (b)(5)(ii) (A) and (B) of this section apply only to manufacturers electing to participate in the NO<sub>x</sub> averaging program.

(A) If a manufacturer chooses to change the level of any family NO<sub>x</sub> emission limit(s), compliance with the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family FTP NO<sub>x</sub> emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the NO<sub>x</sub> standards of § 86.099-9(a)(1)(iii) (A) or (B), or the composite NO<sub>x</sub> standard as defined in § 86.094-2, at the end of the product year.

(b)(6) [Reserved]

(b)(7)(i)-(b)(7)(iii) [Reserved]. For guidance see § 86.094-28.

(b)(7)(iv) The emission value for each evaporative emission data vehicle to compare with the standards shall be the adjusted emission value of § 86.094-28 (b)(7)(iii) rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(b)(8)-(c)(4)(iii)(B)(3) [Reserved]. For guidance see § 86.094-28.

(c)(4)(iv) The emission values for each emission data engine to compare with the standards (or family emission limits, as appropriate) shall be the ad-

justed emission values of § 86.094-28 (c)(4)(iii), rounded to the same number of significant figures as contained in the applicable standard in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(c)(5)-(d)(4) [Reserved]. For guidance see § 86.094-28.

(d)(5) The emission level to compare with the standard shall be the adjusted emission level of § 86.094-28 (d)(4). Before any emission value is compared with the standard it shall be rounded to two significant figures, in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1). The rounded emission values may not exceed the standard.

(6) Every test vehicle of an evaporative emission family must comply with the evaporative emission standard, as determined in paragraph (d)(5) of this section, before any vehicle in that family may be certified.

(e)-(h) [Reserved]. For guidance see § 86.098-28.

[61 FR 54884, Oct. 22, 1996]

#### § 86.001-1 General applicability.

(a) The provisions of this subpart generally apply to 2001 and later model year new Otto-cycle and diesel-cycle heavy-duty engines. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section or paragraph. The provisions of this subpart continue to generally apply to 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty vehicles and 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty trucks produced. Provisions generally applicable to all 2001 and later model year new Otto-cycle and diesel-cycle light-duty vehicles and 2001 and later model year new Otto-cycle and diesel-cycle light-