

(2) In addition, the manufacturer (or contractor for the manufacturer, if applicable) of each certified engine family shall establish, maintain, and retain adequately organized records of the actual U.S. sales volume for the model year for each engine family. The manufacturer may petition the Administrator to allow actual volume produced for U.S. sale to be used in lieu of actual U.S. sales. Such petition shall be submitted within 30 days of the end of the model year to the Manufacturer Operations Division. For the petition to be granted, the manufacturer must establish to the satisfaction of the Administrator that actual production volume is functionally equivalent to actual sales volume.

(3) The manufacturer (or contractor for the manufacturer, if applicable) shall retain all records required to be maintained under this section for a period of eight (8) years from the due date for the applicable end-of-model year report. Records may be retained as hard copy or reduced to microfilm, ADP film, etc., depending on the manufacturer's record retention procedure, provided that in every case all the information contained in the hard copy is retained.

(4) Nothing in this section limits the Administrator's discretion in requiring the manufacturer to retain additional records or submit information not specifically required by this section.

(5) Pursuant to a request made by the Administrator, the manufacturer shall submit to him the information that is required to be retained.

(6) *Voiding a certificate.* (i) EPA may void ab initio a certificate for a vehicle certified to Tier 0 certification standards for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

(ii) EPA may void ab initio a certificate for a 1994 or 1995 model year light-duty vehicle or light-duty truck that is not certified in compliance with the cold temperature CO standard for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

(iii) Any voiding ab initio of a certificate under § 86.094-7(c) and paragraph

(h) of this section will be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with § 86.614 for light-duty vehicles or under § 86.1014 for light-duty trucks and heavy-duty engines.

(i) Any voiding ab initio of a certificate under § 86.091-7 (c) and paragraph (h) of this section will be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with § 86.614 for light-duty vehicles or under § 86.1014 for light-duty trucks and heavy-duty engines.

[56 FR 25740, June 5, 1991, as amended at 57 FR 31897, July 17, 1992]

§ 86.094-8 Emission standards for 1994 and later model year light-duty vehicles.

Section 86.094-8 includes text that specifies requirements that differ from § 86.090-8. Where a paragraph in § 86.090-8 is identical and applicable to § 86.094-8, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For guidance see § 86.090-8." Where a corresponding paragraph of § 86.090-8 is not applicable, this is indicated by the statement "[Reserved]."

(a)(1) *Standards.* (i) Exhaust emissions from 1994 and later model year vehicles (optional for 1994 through 1996 model year gaseous-fueled vehicles) shall meet all standards in tables A94-2, A94-3, A94-5 and A94-6 in the rows designated with the applicable fuel type, according to the implementation schedule in tables A94-1 and A94-4, as follows:

(A)(i)(i) A minimum of the percentage shown in table A94-1 of a manufacturer's sales of the applicable model year's light-duty vehicles shall not exceed the applicable Tier 1 standards in table A94-2 and shall not exceed the applicable Tier 1 standards in table A94-3. The remaining vehicles shall not exceed the applicable Tier 0 standards in table A94-2.

(ii) Optionally, a minimum of the percentage shown in table A94-1 of a manufacturer's combined sales of the applicable model year's light-duty vehicles and light-duty trucks shall not exceed the applicable Tier 1 standards.

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Under this option, the light-duty vehicles shall not exceed the applicable Tier 1 standards in table A94-2 and shall not exceed the applicable Tier 1 standards in table A94-3. Further, the light light-duty trucks shall not exceed the applicable Tier 1 standards in table A94-8 of §86.094-9 and shall not exceed the applicable Tier 1 standards of table A94-9 of §86.094-9. The remaining percentage of the manufacturer's combined sales of the applicable model year's light-duty vehicles and light

light-duty trucks shall not exceed the corresponding Tier 0 standards.

(2) A minimum of the percentage shown in table A94-4 of a manufacturer's sales of the applicable model year's light-duty vehicles shall not exceed the applicable Tier 1 standards in table A94-5 and shall not exceed the applicable Tier 1 standards in table A94-6. The remaining vehicles shall not exceed the applicable Tier 0 standards in table A94-5.

TABLE A94-1—IMPLEMENTATION SCHEDULE FOR LIGHT-DUTY VEHICLES FOR HCs, CO AND NO_x

Model year	Tier 1 percentage
1994	40
1995	80
After 1995	100

TABLE A94-2—INTERMEDIATE USEFUL LIFE STANDARDS (G/MI) FOR LIGHT-DUTY VEHICLES FOR HCs, CO AND NO_x

Fuel	Standards	THC	NMHC	THCE	NMHCE	CO	NO _x
Gasoline	Tier 0	0.41	.....	.....	.....	3.4	1.0
Gasoline	Tier 1	0.41	0.25	.....	.....	3.4	0.4
Diesel	Tier 0	0.41	.....	.....	.....	3.4	1.0
Diesel	Tier 1	0.41	0.25	.....	.....	3.4	1.0
Methanol	Tier 0 .....	.....	.....	0.41	.....	3.4	1.0
Methanol	Tier 1 .....	.....	.....	0.41	0.25	3.4	0.4
Natural Gas	Tier 0 .....	.....	0.34	.....	.....	3.4	1.0
Natural Gas	Tier 1 .....	.....	0.25	.....	.....	3.4	0.4
LPG	Tier 0	0.41	.....	.....	.....	3.4	1.0
LPG	Tier 1	0.41	0.25	.....	.....	3.4	0.4

TABLE A94-3—FULL USEFUL LIFE STANDARDS (G/MI) FOR LIGHT-DUTY VEHICLES FOR HCs, CO AND NO_x

Fuel	Standards	THC	NMHC	THCE	NMHCE	CO	NO _x
Gasoline	Tier 0 .....	.....	.....	.....	.....	.....	.....
Gasoline	Tier 1 .....	.....	0.31	.....	.....	4.2	0.6
Diesel	Tier 0 .....	.....	.....	.....	.....	.....	.....
Diesel	Tier 1 .....	.....	0.31	.....	.....	4.2	1.25
Methanol	Tier 0 .....	.....	.....	.....	.....	.....	.....
Methanol	Tier 1 .....	.....	.....	.....	0.31	4.2	0.6
Natural Gas	Tier 0 .....	.....	.....	.....	.....	.....	.....
Natural Gas	Tier 1 .....	.....	0.31	.....	.....	4.2	0.6
LPG	Tier 0 .....	.....	.....	.....	.....	.....	.....
LPG	Tier 1 .....	.....	0.31	.....	.....	4.2	0.6

TABLE A94-4—IMPLEMENTATION SCHEDULE FOR LIGHT-DUTY VEHICLES FOR PM

Model year	Tier 1 percentage
1994	40
1995	80
After 1995	100

TABLE A94-5—INTERMEDIATE USEFUL LIFE STANDARDS (G/MI) FOR LIGHT-DUTY VEHICLES FOR PM

Fuel	Standards	PM
Gasoline	Tier 0 .....	.....

TABLE A94-5—INTERMEDIATE USEFUL LIFE STANDARDS (G/MI) FOR LIGHT-DUTY VEHICLES FOR PM—Continued

Fuel	Standards	PM
Gasoline	Tier 1	0.08
Diesel	Tier 0	0.20
Diesel	Tier 1	0.08
Methanol	Tier 0	¹ 0.20
Methanol	Tier 1	0.08
Natural Gas	Tier 0	¹ 0.20
Natural Gas	Tier 1	0.08
LPG	Tier 0	¹ 0.20
LPG	Tier 1	0.08

¹ Applicable only to diesel-cycle vehicles.

TABLE A94-6—FULL USEFUL LIFE STANDARDS (G/MI) FOR LIGHT-DUTY VEHICLES FOR PM

Fuel	Standards	PM
Gasoline	Tier 0 .....	.....
Gasoline	Tier 1	0.10
Diesel	Tier 0 .....	.....
Diesel	Tier 1	0.10
Methanol	Tier 0 .....	.....
Methanol	Tier 1	0.10
Natural Gas	Tier 0 .....	.....
Natural Gas	Tier 1	0.10
LPG	Tier 0 .....	.....
LPG	Tier 1	0.10

(B)(1)(i) Sales percentages for the purposes of determining compliance with paragraph (a)(1)(i)(A) of this section shall be based on total actual U.S. sales of light-duty vehicles of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale. If the option of paragraph (a)(1)(i)(A)(1)(ii) of this section is taken, such sales percentages shall be based on the total actual combined U.S. sales of light-duty vehicles and light light-duty trucks of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(ii) The manufacturer may petition the Administrator to allow actual volume produced for U.S. sale to be used in lieu of actual U.S. sales for purposes of determining compliance with the implementation schedule sales percentages of tables A94-1 and A94-4 of this section. Such petition shall be submitted within 30 days of the end of the model year to the Manufacturers Operations Division. For the petition to be granted, the manufacturer must establish to the satisfaction of the Administrator that actual production volume

is functionally equivalent to actual sales volume.

(iii) The manufacturer may count toward the sales percentages light-duty vehicles of the applicable model year that meet certain standards for that same model year contained in Title 13, California Code of Regulations, Section 1960.1, and the incorporated “California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.” (Copies may be obtained from Barclays Law Publishers, P.O. Box 3066, San Francisco, CA 94080.) The relevant standards from that source are those that are designated as phase-in standards for selected pollutants and were first applied in the 1993 model year, as well as those for all remaining pollutants that require compliance at the one hundred percent level. If this option is taken, all light-duty vehicles sold in jurisdictions adopting such standards shall be counted toward the total upon which the sales percentage is based. If this option is not taken, light-duty vehicles sold in such jurisdictions are to be excluded from counting toward either the total upon which

the sales percentage is based on the sales percentage itself.

(iv) Small volume manufacturers, as defined in § 86.092-14 (b)(1) and (2), are exempt from the implementation schedules of tables A94-1 and A94-4 of this section for model years 1994 and 1995. For small volume manufacturers, Tier 0 standards of tables A94-2 and A94-5 continue to apply until model year 1996 when one hundred percent compliance with the Tier 1 standards of tables A94-2, A94-3, A94-5, and A94-6 is required. This exemption does not apply to small volume engine families as defined in § 86.092-14 (b)(5).

(2)(i) Where the required implementation schedule sales percentages for in-use purposes, as prescribed in subpart H of this part, are the same in a given model year as the required implementation schedule sales percentages for certification purposes, as prescribed in this section, the same engine families must comprise the respective percentages.

(ii) Where the required implementation schedule sales percentages for in-use purposes differ from implementation schedule sales percentages for certification purposes in a particular model year, the manufacturer must designate, at the time of Application for Certification, which families will meet each applicable in-use phase-in percentage.

(3) The manufacturer must state at the time of Application for Certification, based on projected U.S. sales or projected production for U.S. sale, which families will be used to attain the required implementation schedule sales percentages for certification purposes.

(4) A manufacturer can not use one set of engine families to meet its intermediate useful life standards and another to meet its full useful life standards. The same families which are used to meet the intermediate useful life standards will be required without deviation to meet the corresponding full useful life standards.

(ii) A manufacturer may elect to include all or some of its diesel-cycle light-duty vehicle engine families subject to the Tier 0 standards in the appropriate particulate averaging program (petroleum or methanol), pro-

vided that vehicles produced for sale in California or in designated high-altitude areas may be averaged only within each of these areas. Averaging is not permitted between fuel types. If the manufacturer elects to average light-duty vehicles and light-duty trucks together in the appropriate particulate averaging program, its composite particulate standard applies to the combined set of light-duty vehicles and light-duty trucks included in the average and is calculated as defined in § 86.090-2.

(2) The standards set forth in paragraph (a)(1)(i) of this section refer to the exhaust emitted over a driving schedule as set forth in subpart B of this part and measured and calculated in accordance with those procedures. The test weight basis for light-duty vehicles, for the purposes of determining equivalent test weight as prescribed in § 86.129-94, shall be loaded vehicle weight.

(b) Fuel evaporative emissions from 1994 and later model year light-duty vehicles shall not exceed (compliance with these standards is optional for 1994 model year methanol-fueled engines):

(1) *Hydrocarbons (for gasoline-fueled vehicles)*. 2.0 grams per test.

(2) *Total Hydrocarbon Equivalent (for methanol-fueled vehicles)*. 2.0 grams carbon per test.

(3) The standards set forth in paragraphs (b) (1) and (2) of this section refer to a composite sample of the fuel evaporative emissions collected under the conditions set forth in subpart B of this part and measured in accordance with those procedures.

(c) No crankcase emissions shall be discharged into the ambient atmosphere from any 1994 and later model year Otto-cycle, or methanol- or gaseous-fueled diesel light-duty vehicle. This requirement is optional for 1994 through 1996 model year gaseous-fueled light-duty vehicles.

(d)-(f) [Reserved]. For guidance see § 86.090-8.

(g) Any 1994 and later model year light-duty vehicle that a manufacturer wishes to certify for sale shall meet the emission standards under both low- and high-altitude conditions as specified in

§ 86.082-2, except as provided in paragraphs (h) and (i) of this section. Vehicles shall meet emission standards under both low- and high-altitude conditions without manual adjustments or modifications. Any emission control device used to meet emission standards under high-altitude conditions shall initially actuate (automatically) no higher than 4,000 feet above sea level.

(h) The manufacturer may exempt 1994 and later model year vehicles from compliance at high altitude with the emission standards set forth in paragraphs (a) and (b) of this section if the vehicles are not intended for sale at high altitude and if the requirements of paragraphs (h) (1) and (2) of this section are met.

(1) A vehicle configuration shall only be considered eligible for exemption under paragraph (h) of this section if the requirements of either paragraph (h)(1) (i), (ii), (iii), or (iv) of this section are met.

(i) Its design parameters (displacement-to-weight ratio (D/W) and engine speed-to-vehicle-speed ratio (N/V)) fall within the exempted range for that manufacturer for that year. The exempted range is determined according to the following procedure:

(A) The manufacturer shall graphically display the D/W and N/V data of all vehicle configurations it will offer for the model year in question. The axis of the abscissa shall be D/W (where (D) is the engine displacement expressed in cubic centimeters and (W) is the equivalent vehicle test weight expressed in pounds), and the axis of the ordinate shall be N/V (where (N) is the crankshaft speed expressed in revolutions per minute and (V) is the vehicle speed expressed in miles per hour). At the manufacturer's option, either the 1:1 transmission gear ratio or the lowest numerical gear ratio available in the transmission will be used to determine N/V. The gear selection must be the same for all N/V data points on the manufacturer's graph. For each transmission/axle ratio combination, only the lowest N/V value shall be used in the graphical display.

(B) The product line is then defined by the equation, $N/V = C(D/W)^{-0.9}$, where the constant, C, is determined by the requirement that all the vehicle

data points either fall on the line or lie to the upper right of the line as displayed on the graphs.

(C) The exemption line is then defined by the equation, $N/V = C(0.84 D/W)^{-0.9}$, where the constant, C, is the same as that found in paragraph (h)(1)(i)(B) of this section.

(D) The exempted range includes all values of N/V and D/W which simultaneously fall to the lower left of the exemption line as drawn on the graph.

(ii) Its design parameters fall within the alternate exempted range for that manufacturer that year. The alternate exempted range is determined by substituting rated horsepower (hp) for displacement (D) in the exemption procedure described in paragraph (h)(1)(i) of this section and by using the product line $N/V = C(\text{hp}/W)^{-0.9}$.

(A) Rated horsepower shall be determined by using the Society of Automotive Engineers Test Procedure J 1349, June 1990, Engine Power Test Code—Spark Ignition and Compression Ignition—Net Power Rating. This 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. Copies may be obtained from SAE International, 400 Commonwealth Drive, Warrendale, PA, 15096-0001. Copies may be inspected at U.S. EPA, OAR, 401 M St., SW., Washington, DC 20460, 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/federal_register/code_of_federal_regulations/ibr_locations.html. Any of the horsepower determinants within that test procedure may be used, as long as it is used consistently throughout the manufacturer's product line in any model year.

(B) No exemptions will be allowed under paragraph (h)(1)(ii) of this section to any manufacturer that has exempted vehicle configurations as set forth in paragraph (h)(1)(i) of this section.

(iii) Its acceleration time (the time it takes a vehicle to accelerate from 0 miles per hour to a speed not less than 40 miles per hour and not greater than 50 miles per hour) under high-altitude

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conditions is greater than the largest acceleration time under low-altitude conditions for that manufacturer for that year. The procedure to be followed in making this determination is:

(A) The manufacturer shall list the vehicle configuration and acceleration time under low-altitude conditions of that vehicle configuration which has the highest acceleration time under low-altitude conditions of all the vehicle configurations it will offer for the model year in question. The manufacturer shall also submit a description of the methodology used to make this determination.

(B) The manufacturer shall then list the vehicle configurations and acceleration times under high-altitude conditions of all those vehicle configurations which have higher acceleration times under high-altitude conditions than the highest acceleration time at low altitude identified in paragraph (h)(1)(iii)(A) of this section.

(iv) In lieu of performing the test procedure of paragraphs (h)(1)(iii) (A) and (B) of this section, its acceleration time can be estimated based on the manufacturer's engineering evaluation, in accordance with good engineering practice, to meet the exemption criteria of paragraph (h)(1)(iii) of this section.

(2) A vehicle shall only be considered eligible for exemption under this paragraph (h) if at least one configuration of its model type (and transmission configuration in the case of vehicles equipped with manual transmissions, excluding differences due to the presence of overdrive) is certified to meet emission standards under high-altitude conditions as specified in paragraphs (a) through (c) and (g) of this section. The Certificate of Conformity (the Certificate) covering any exempted configuration(s) will also apply to the corresponding non-exempt configuration(s) required under this paragraph (h)(2). As a condition to the exemption, any suspension, revocation, voiding, or withdrawal of the Certificate as it applies to a non-exempt configuration for any reason will result in a suspension of the Certificate as it applies to the corresponding exempted configuration(s) of that model type, unless there is at least one other corresponding

non-exempt configuration of the same model type still covered by the Certificate. The suspension of the Certificate as it applies to the exempted configuration(s) will be terminated when any one of the following occurs:

(i) Another corresponding non-exempt configuration(s) receive(s) coverage under the Certificate; or

(ii) Suspension of the Certificate as it applies to the corresponding non-exempt configuration(s) is terminated; or

(iii) The Agency's action(s), with respect to suspension, revocation, voiding, or withdrawal of the Certificate as it applies to the corresponding non-exempt configuration(s), is reversed.

(3) The sale of a vehicle for principal use at a designated high-altitude location that has been exempted as set forth in paragraph (h) of this section will be considered a violation of section 203(a)(1) of the Clean Air Act.

(i)(1) The manufacturers may exempt 1994 and later model year vehicles from compliance at low altitude with the emission standards set forth in paragraph (a) of this section and § 86.090-8 (b) if the vehicles:

(i) Are not intended for sale at low altitude; and

(ii) Are equipped with a unique, high-altitude axle ratio (rear-wheel drive vehicles) or a unique, high-altitude drivetrain (front-wheel drive vehicles) with a higher N/V ratio than other configurations of that model type which are certified in compliance with the emission standards of paragraph (a) of this section and § 86.090-8 (b) under low-altitude conditions.

(2) The sale of a vehicle for principal use at low altitude that has been exempted as set forth in paragraph (i)(1) of this section will be considered a violation of section 203(a)(1) of the Clean Air Act.

(j) Any exempted light-duty vehicle that a manufacturer wishes to certify for sale under the provisions of § 86.090-8 (h) or paragraph (i) of this section is subject to the provisions of subpart Q of this part.

(k) *Cold Temperature Carbon Monoxide (CO) Standards.* (1) For gasoline-fueled light-duty vehicles, a minimum of the percentage shown in table A94-16 of a manufacturer's sales of the applicable model year's light-duty vehicles shall

not exceed the applicable cold temperature CO standard of 10.0 grams per mile for an intermediate useful life of 50,000 miles, as measured and calculated under the provisions set forth in subpart C of this part. This standard applies under both low and high altitude conditions. At the manufacturer's option, the manufacturer may combine the sales of gasoline-fueled light-duty vehicles and gasoline-fueled light-duty trucks in determining compliance with the required 1994 and 1995 model year phase-in percentages as included in table A94-16.

(2)(i) Sales percentages for the purposes of determining compliance with paragraph (k)(1) of this section shall be based on total actual and, at the manufacturer's option, combined U.S. sales of light-duty vehicles, light light-duty trucks, and heavy light-duty trucks of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(ii) The manufacturer may petition the Administrator to allow actual volume produced for U.S. sales to be used in lieu of actual U.S. sales for purposes of determining compliance with the implementation schedule sales percentages of table A94-16. Such petition shall be submitted within 30 days of the end of the model year the Manufacturers Operations Division. For the petition to be granted, the manufacturer must establish to the satisfaction of the Administrator that actual production volume is functionally equivalent to actual sales volume.

(iii) The manufacturer may count towards the sales percentages those light-duty vehicles, light light-duty trucks, and heavy light-duty trucks of the applicable model year sold in the state of California or in jurisdictions which have adopted the California emission standards under section 177 of the Clean Air Act if those light-duty vehicles, light light-duty trucks, and heavy light-duty trucks certified have been to meet the federally mandated cold CO standards. If this option is taken, all light-duty vehicles, light light-duty trucks, and heavy light-duty trucks sold in California and such jurisdictions shall be counted toward the total upon which the sales percentage

is based. If this option is not taken, light-duty vehicles, light light-duty trucks, and heavy light-duty trucks sold in California or such jurisdictions are to be excluded from counting toward either the total upon which the sales percentage is based or the sales percentage itself.

(iv) Small volume manufacturers, as defined in § 86.092-14(b) (1) and (2), are exempt from the implementation schedules of table A94-16 for model years 1994 and 1995. This exemption does not apply to small volume engine families as defined in § 86.092-14(b)(5).

(v) The manufacturer must state at the time of applying for the Certificate, based on projected U.S. sales or projected production for U.S. sale, which engine families will be used to attain the required implementation schedule sales percentages.

[56 FR 25740, June 5, 1991, as amended at 57 FR 31898, July 17, 1992; 59 FR 48494, Sept. 21, 1994; 62 FR 47120, Sept. 5, 1997]

§ 86.094-9 Emission standards for 1994 and later model year light-duty trucks.

(a)(1) *Standards*—(i) *Light light-duty trucks.* Exhaust emission from 1994 and later model year light light-duty trucks shall meet all standards in Tables A94-8, A94-9, A94-11 and A94-12 in the rows designated with the applicable fuel type and loaded vehicle weight, according to the implementation schedule in Tables A94-7 and A94-10 as follows (optional for 1994 through 1996 model year gaseous-fueled light light-duty trucks):

(A)(1)(i) A minimum of the percentage shown in table A94-7 of a manufacturer's sales of the applicable model year's light light-duty trucks shall not exceed the applicable Tier 1 standards in table A94-8 and shall not exceed the applicable Tier 1 standards in table A94-9. The remaining vehicles shall not exceed the applicable Tier 0 standards in table A94-9.

(ii) Optionally, a minimum of the percentage shown in table A94-7 of a manufacturer's combined sales of the applicable model year's light-duty vehicles and light light-duty trucks shall not exceed the applicable Tier 1 standards. Under this option, the light-duty vehicles shall not exceed the applicable