

California Environmental Protection Agency  
AIR RESOURCES BOARD

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2001 AND SUBSEQUENT MODEL  
PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES**

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Amended: May 28, 2004  
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Note: The proposed amendments to this document are shown in single underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as last amended December 2, 2009. Amendments to these regulations that were adopted by the Board on September 24, 2009 as part of the “Rulemaking to Consider Proposed Amendments to New Passenger Motor Vehicle Greenhouse Gas Emission Standards,” but which have not yet been approved by California’s Office of Administrative Law (OAL) are indicated in dotted underline to indicate additions and ~~italics double strikeout~~ to indicate deletions. That rulemaking was sent to OAL for approval on February 22, 2010. OAL has until April 6, 2010 to make a determination. [n/a] indicated provisions of the proposed federal rule (74 Fed.Reg. 49454 (September 28, 2009)) that do not apply in California and are not proposed for incorporation. [No change] indicates proposed federal provisions that are also proposed for incorporation herein without change. Existing intervening text that is not amended in this rulemaking is indicated by “\* \* \* \*”.

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**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES  
FOR 2001 AND SUBSEQUENT MODEL  
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The provisions of Subparts B, C, and S, Part 86, Title 40, Code of Federal Regulations, as adopted or amended on May 4, 1999 or as last amended on such other date set forth next to the 40 CFR Part 86 section title listed below, and to the extent they pertain to exhaust emission standards and test procedures, are hereby adopted as the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” with the following exceptions and additions.

**PART I: GENERAL PROVISIONS FOR CERTIFICATION AND IN-USE  
VERIFICATION OF EMISSIONS**

**A. General Applicability**

**1. §86.1801 Applicability.**

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1.2 §86.1801-12. As proposed at 74 Fed.Reg. 49454, 49752 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). Amend as follows:

1.2.1 Amend subparagraph (a) as follows: Except as otherwise indicated, the provisions of this subpart apply to new passenger cars, light-duty trucks, and medium-duty vehicles, including multi-fueled, alternative fueled, hybrid electric, plug-in hybrid electric, and electric vehicles. 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 of this subpart.

1.2.2 Subparagraph (b) *Aftermarket conversions*. [n/a]

1.2.3 Amend subparagraph (c) *Optional Applicability* as follows:

(a) Amend subparagraph (c)(1) as follows: A manufacturer must certify any heavy-duty complete Otto-cycle vehicle of 14,000 pounds Gross Vehicle Weight Rating (GVWR) or less in accordance with the medium-duty chassis-standards of Section E.1 of these test procedures. A manufacturer must certify all heavy-duty diesel engines or vehicles of 14,000 pounds GVWR or less to the medium-duty engine standards in title 13, CCR, section 1956.8(g) or (h). A manufacturer may request to certify heavy-duty complete diesel vehicles to the chassis-standards in Section E.1 of these test procedures; heavy-duty engine or

heavy-duty vehicle provisions of 40 CFR Part 86 subpart A do not apply to such a vehicle or engine.

(b) Subparagraph (c)(2) [No change.]

(c) Subparagraph (c)(3) [No change.]

(d) Subparagraph (c)(4) [n/a; aftermarket conversions]

(e) Subparagraph (c)(5) [n/a]

1.2.4 Amend subparagraph (d) as follows: Small volume manufacturers. Special certification procedures are available for any manufacturer whose projected or actual combined California sales of passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles and heavy-duty engines in its product line are fewer than 4,500 units based on the average number of vehicles sold for the three previous consecutive model years for which a manufacturer seeks certification. For manufacturers certifying for the first time in California, model-year production volume shall be based on projected California sales. The small-volume manufacturer's light- and medium-duty vehicle and truck certification procedures are described in 40 CFR §86.1838, as modified in Section G.12 of these test procedures.

1.2.5 Subparagraph (e). [n/a; NLEVs.]

1.2.6 Subparagraph (f) [n/a; Tier 2 phase-in provisions]

1.2.7 Subparagraph (g) [n/a; Tier 2 phase-in provisions]

1.2.8 Subparagraph (h) [No change.]

1.2.9 Subparagraph (i) [No change, except that this subparagraph shall only apply to vehicles certifying to the National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.]

1.2.10 Subparagraph (j) [No change, except that this subparagraph shall only apply to vehicles certifying to the National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.]

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**B. Definitions, Acronyms and Abbreviations**

**1. §86.1803 Definitions.**

\* \* \* \*

1.2 §86.1803-01. As proposed at 74 Fed.Reg. 49454, 49753 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except as otherwise noted below.] The version of §86.1803-01 as incorporated by this section B.1.2 shall only apply to vehicles certifying to the National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.

**2. California Definitions.**

\* \* \* \*

“National greenhouse gas program” or “National greenhouse gas final rule” means the national program that applies to new 2012 through 2016 model year passenger cars, light-duty trucks, and medium-duty passenger vehicles as proposed by the U.S. Environmental Protection Agency at 74 Fed.Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010), as incorporated in and amended by these test procedures.

\* \* \* \*

**C. General Requirements for Certification**

**1. §86.1805 Useful Life.**

\* \* \* \*

1.3 §86.1805-12. As proposed at 74 Fed.Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section §86.1805-12 shall only apply to vehicles certifying to the National greenhouse gas program for the 2012 through 2016 model years, in accordance with section E of these test procedures.]

**2. §86.1806 On-Board Diagnostics.**

2.1 §86.1806-01; §86.1806-05. Delete.

\* \* \* \*

**5. §86.1809 Prohibition of Defeat Devices.**

\* \* \* \*

5.2 §86-1809-10. As proposed at 74 Fed.Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change except that requirements applicable to the Air Conditioning Idle Test shall only apply to vehicles certifying to the National greenhouse gas program, and subparagraph (e) shall apply to vehicles subject to the California TLEV, LEV, ULEV and SULEV standards.]

**D. §86.1810 General standards; increase in emissions; unsafe conditions; waivers**

\* \* \* \*

3. §86.1810-09. February 26, 2007. As proposed at 74 Fed.Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that the amendments to §86.1810-01 set forth in D.1 and D.2 shall also apply.]

**E. California Exhaust Emission Standards.**

Delete 40 CFR §§86.1811 through 86.1819, except that for model years 2012 through 2016, a manufacturer may demonstrate compliance with the requirements of sections E.2.5 and E.3.2 by demonstrating compliance with §86.1818.12 as proposed at 74 Fed.Reg. 49454, 49755 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010).

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**2. Emission Standards Phase-In Requirements for Manufacturers**

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**2.5 Fleet Average Greenhouse Gas Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.**

2.5.1(i) The fleet average greenhouse gas exhaust mass emission values from passenger cars, light-duty trucks, and medium-duty passenger vehicles that are produced and delivered for sale in California each model year by a large volume manufacturer shall not exceed:

<b>FLEET AVERAGE GREENHOUSE GAS EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM-DUTY PASSENGER VEHICLE WEIGHT CLASSES<sup>1</sup></b> (4,000 mile Durability Vehicle Basis)		
<b>Model Year</b>	<i>Fleet Average Greenhouse Gas Emissions (grams per mile CO<sub>2</sub>-equivalent)</i>	
	<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751 lbs. LVW - 8500 lbs. GVW; MDPVs</i>
2009	323	439
2010	301	420
2011	267	390
2012	233	361
2013	227	355
2014	222	350
2015	213	341
2016+	205	332

<sup>1</sup> Each manufacturer shall demonstrate compliance with these values in accordance with Section E.2.5.2.

2.5.1.1 For each model year, a manufacturer must demonstrate compliance with the fleet average requirements in this section E.2.5.1 based on one of two options applicable throughout the model year, either:

Option 1: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in section 1961.1, title 13, CCR, and are produced and delivered for sale in California; or

Option 2: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in section 1961.1, title 13, CCR, and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

2.5.1.1.1 For the 2009 and 2010 model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection in writing within 30 days of the effective date of the amendments to this section 2.5.1.1, or must comply with Option 1.

2.5.1.1.2 For the 2011 and later model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection in writing prior to the start of the applicable model year or must comply with Option 1.

2.5.1.1.3..... When a manufacturer is demonstrating compliance using Option 2 for a given model year, the term “in California” as used in subsections E.2.5.2.3 and E.3.2 means California, the District of Columbia, and all states that have adopted California’s greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

2.5.1.1.4..... A manufacturer that selects compliance Option 2 must provide to the Executive Officer separate values for the number of vehicles produced and delivered for sale in the District of Columbia and for each individual state within the average.

2.5.1(ii) For the 2012 through 2016 model years, a manufacturer may elect to demonstrate compliance with this section E.2.5 by demonstrating compliance with the National greenhouse gas program as follows:

2.5.1.1 A manufacturer that selects compliance with this option E.2.5.1(ii) must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or must comply with E.2.5.1(i).

2.5.1.2 The manufacturer must submit to ARB a copy of the Model Year CAFE report that it submitted to EPA as required under 40 CFR §86-1865-12 as proposed at 74 Fed.Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010 (75 Fed.Reg. [insert page] (April [insert date], 2010), for demonstrating compliance with the National greenhouse gas program and the EPA determination of compliance. These must be submitted within 30 days of receipt of the EPA determination of compliance, for each model year that a manufacturer selects compliance with this option E.2.5.1(ii). and

2.5.1.3 If a manufacturer has outstanding greenhouse gas debits at the end of the 2011 model year, as calculated in accordance with E.3.2, the manufacturer must submit to the Executive Officer a plan for offsetting all outstanding greenhouse gas debits by using greenhouse gas credits earned under the National greenhouse gas program before applying those credits to offset any National greenhouse gas program debits. Upon approval of the plan by the Executive Officer, the manufacturer may demonstrate compliance with this section E.2.5 by demonstrating compliance with the National greenhouse gas program. Any California debits not offset by the end of the 2016 model year National greenhouse gas program reporting period are subject to penalties as provided in section E.3.2.

## **2.5.2 Calculation of Fleet Average Greenhouse Gas Value.**

### **2.5.2.1 Basic Calculation.**

2.5.2.1.1 OPTION A: Each manufacturer shall calculate both a “city” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group and a “highway” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group, including AB 965 vehicles and vehicles certified in accordance with Section E.1.12 of these test

procedures, using the following formula. OPTION B: For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, “GHG vehicle test group” shall mean “subconfiguration” in this subsection E 2.5.2.1.1. Greenhouse Gas emissions used for the “city” CO<sub>2</sub>-equivalent value calculation shall be measured using the “FTP” test cycle (40 CFR, Part 86, Subpart B), as modified in Part II of these test procedures. Greenhouse Gas emissions used for the “highway” CO<sub>2</sub>-equivalent value calculation shall be based on emissions measured using the Highway Test Procedures.

$$\text{CO}_2\text{-Equivalent Value} = \text{CO}_2 + 296 \times \text{N}_2\text{O} + 23 \times \text{CH}_4 - \text{A/C Direct Emissions Allowance} - \text{A/C Indirect Emissions Allowance}$$

A manufacturer may use N<sub>2</sub>O = 0.006 grams per mile in lieu of measuring N<sub>2</sub>O exhaust emissions. A manufacturer that elects to use CAFE data to demonstrate compliance with the greenhouse gas requirements may substitute the term 1.9 CO<sub>2</sub>-equivalent grams per mile for the terms “296 x N<sub>2</sub>O + 23 x CH<sub>4</sub>” in this equation.

\* \* \* \*

**2.5.2.1.2 A/C Direct Emissions Allowance.** A manufacturer may use the following A/C Direct Emission Allowances, upon approval of the Executive Officer, if that manufacturer demonstrates that the following requirements are met. Such demonstration shall include specifications of the components used and an engineering evaluation that verifies the estimated lifetime emissions from the components and the system. A manufacturer shall also provide confirmation that the number of fittings and joints has been minimized and components have been optimized to minimize leakage. No A/C Direct Emissions Allowance is permitted if the following requirements are not met.

\* \* \* \*

(d)..... A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements shall calculate the A/C Direct Emissions Allowance for each Vehicle Configuration by calculating the A/C Direct Emissions Allowance for each air conditioning system used in that Vehicle Configuration and calculating a sales-weighted average for that Vehicle Configuration.



2.5.2.1.3 **A/C Indirect Emissions Allowance.** A manufacturer may use the following A/C Indirect Emissions Allowances, upon approval of the Executive Officer, if the manufacturer demonstrates using data or an engineering evaluation that the air conditioning system meets the following requirements. A manufacturer may use the following A/C Indirect Emissions Allowances for other technologies, upon approval of the Executive Officer, if that manufacturer demonstrates that the air conditioning system achieves equal CO<sub>2</sub>-equivalent grams per mile emissions reductions.

\* \* \* \*

(d) A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements shall calculate the A/C Indirect Emissions Allowance for each Vehicle Configuration by calculating the A/C Indirect Emissions Allowance for each air conditioning system used in that Vehicle Configuration and calculating a sales-weighted average for that Vehicle Configuration.

\* \* \* \*

**F. Requirements and Procedures for Durability Demonstration**

\* \* \* \*

4.2 §86.1823-08 ~~January 17, 2006~~ As proposed at 74 Fed.Reg. 49454, 49757 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that the amendments to §86.1823-01 set forth in F.4.1 shall apply, and subparagraph (m) applies only to vehicles certifying to the National greenhouse gas program.]

\* \* \* \*

**G. Procedures for Demonstration of Compliance with Emission Standards**

**1. §86.1827 Test Group Determination.**

1.1 §86.1827-01. ~~October 6, 2000~~ February 26, 2007 As proposed at 74 Fed.Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that subparagraphs (a)(5) and (f) shall only apply to vehicles certifying to the National greenhouse gas program.]

**2. §86.1828 Emission data vehicle selection**

\* \* \* \*

2.34.2 Greenhouse Gas Emission Test Vehicle Selection. Within each test group, the vehicle configuration shall be selected from the greenhouse gas vehicle test group that is expected to be “worst-case” for greenhouse gas emissions, as calculated in Section E.2.5.2.1, subject to approval by the Executive Officer. A manufacturer may select additional vehicle configurations from greenhouse gas vehicle test groups with lower greenhouse gas emissions values than the “worst-case” configuration.

\* \* \* \*

**3. §86.1829 Durability data and emission data testing requirements; waivers.**

3.1 §86.1829-01. ~~December 8, 2005~~~~February 26, 2007~~ As proposed at 74 Fed.Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). Amend as follows:

3.1.1 Delete (b)(1)(ii) and replace with: For Otto-cycle vehicles or hybrid vehicles that use Otto-cycle engines, evidence shall be supplied showing that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standards at barometric pressures equivalent to those expected at altitudes ranging from sea level to an elevation of 6000 feet. For fuel injected vehicles or hybrid electric vehicles that use fuel-injected engines, compliance may be demonstrated upon a showing by the manufacturer that the fuel injection system distributes fuel based on mass air flow, rather than volume flow, and is therefore self-compensating. All submitted test proposals will be evaluated on their acceptability by the Executive Officer. As an alternative to the demonstration described above, a manufacturer may demonstrate compliance by testing California vehicle configurations as part of its federal high altitude certification requirements. Engine families that meet all the applicable California low altitude emission standards when tested at the EPA test elevation are deemed to be in compliance. The SFTP standards do not apply to testing at high altitude.

3.1.2 (b)(1)(iii)(E) [No change, except that references to Tier 2 or interim non-Tier 2 vehicles shall mean California LEVs, ULEVs or SULEVs.]

3.1.3 Amend (b)(1)(iii)(G) as follows: For the 2012 model year only, in lieu of testing a vehicle for N<sub>2</sub>O emissions, a manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement must be based on previous emission tests, development tests, or other appropriate information and good engineering judgment. This subparagraph (b)(1)(iii)(G) only applies to vehicles certifying to the National greenhouse gas program.

3.1.4~~3~~ Amend (b)(4)(i) as follows: All 2001 and subsequent model-year emission-data vehicles shall be required to be tail-pipe tested at 4,000 miles or at the mileage at which the vehicle is stabilized as determined in §86.1827-01 and demonstrate compliance with the California Inspection and Maintenance (“I/M”) emission standards

as specified in the “Mandatory Exhaust Emissions Inspection Standards and Test Procedures,” title 16, California Code of Regulations, Section 3340.42. A manufacturer shall have the option of using the I/M test procedures in place at the time of certification or, if the I/M test procedures have been amended within two years of the time of certification, a manufacturer may use the preceding procedures. Test vehicles shall undergo preconditioning procedures prior to the tail-pipe test, which consist of idle conditions for a minimum period of ten minutes after the thermostat is open. Preconditioning and test procedures shall be conducted at an ambient temperature from 68° to 86° F. The manufacturer shall, in accordance with good engineering practices, attest that such test vehicles will meet the requirements of this section when preconditioned and tested at ambient temperatures from 35° to 68° F.

3.1.54 Amend (b)(4)(ii) as follows: In lieu of testing vehicles according to the provisions of §86.1829(b)(4)(i), a manufacturer may provide a statement in its application for certification that, based on the manufacturer's engineering evaluation of such I/M testing as the manufacturer deems appropriate, all light-duty vehicles and light-duty trucks comply with the I/M emission standards.

3.1.65 Delete (b)(5). Idle CO Testing.

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### **3.4 Greenhouse Gas Testing Requirements.**

A manufacturer shall demonstrate compliance with the greenhouse gas requirements each year by testing one vehicle per each test group that represents the vehicle configuration that is expected to be “worst-case” for greenhouse gas emissions, as calculated in Section E.2.5.2.1, subject to approval by the Executive Officer. A manufacturer may test additional vehicles within the test group that represent vehicle configuration with lower greenhouse gas emissions values than the “worst-case” configuration. All vehicles shall be tested using both the FTP and Highway Test Procedures as modified in Part II of these test procedures. ~~A manufacturer may use emissions data from tests it conducts as part of the Corporate Average Fuel Economy Program (CAFE), in accordance with 40 CFR Part 600 – Fuel Economy of Motor Vehicles, to demonstrate compliance with the greenhouse gas requirements, once those data have been judged acceptable by the U.S. Environmental Protection Agency. A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements must use all of the data that is used by the U.S. Environmental Protection Agency to determine a manufacturer’s corporate average fuel economy for the applicable model year, and may forego testing of the “worst-case” configuration.~~

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**H. Certification, Information and Reporting Requirements.**

**1. §86.1841 Compliance with emission standards for the purpose of certification**

\* \* \* \*

1.2 For 2012 through 2016 model year vehicles certifying to the National greenhouse gas program, §86.1841-01, as proposed at 74 Fed.Reg. 49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010), shall apply. Changes specified under section H.1.1 shall also apply for this section H.1.2.

1.32 Scope of Certification. Certification, if granted, is effective only for the vehicle/test group described in the original manufacturer's certification application. Modifications by a secondary manufacturer to vehicles/engines shall be deemed not to increase emissions above the standards under which those vehicles/engines were certified and to be within the original certification if such modifications do not: (1) increase vehicle weight more than 10 percent above the curb weight, increase frontal area more than 10 percent, or result in a combination increase of weight plus frontal area of more than 14 percent; or (2) include changes in axle ratio, tire size, or tire type resulting in changes in the drive train ratio of more than 5 percent; or (3) include any modification to the emission control system. No originally certified vehicle/engine which is modified by a secondary manufacturer in a manner described in items (1) through (3) of the preceding sentence may be sold to an ultimate purchaser, offered or delivered for sale to an ultimate purchaser, or registered in California unless the modified vehicle/engine is certified by the state board in accordance with applicable test procedures to meet emission standards for the model year for which the vehicle/engine was originally certified. For the purposes of this subsection, "secondary manufacturer" means any person, other than the original manufacturer, who modifies a new motor vehicle prior to sale to the ultimate purchaser.

1.43 SFTP. For vehicles certified to the SFTP standards in Section E.1.2.2, full and intermediate useful life shall mean 4,000 miles.

1.54 Certification of a Federal Vehicle in California. Whenever a manufacturer federally-certifies a 2004 or subsequent model-year passenger car, light-duty truck or medium-duty vehicle model to the standards for a particular emissions bin that are more stringent than the standards for an applicable California vehicle emissions category, the equivalent California model may only be certified to (i) the California standards for a vehicle emissions category that are at least as stringent as the standards for the corresponding federal emissions bin, or (ii) the exhaust emission standards to which the federal model is certified. However, where the federal exhaust emission standards for the particular emissions bin and the California standards for a vehicle emissions category are equally stringent, the California model may only be certified to either the California standards for that vehicle emissions category or more stringent California standards. The federal emission bins are those contained Tables S04-1 and S04-2 of 40 CFR section 86.1811-04(c) as adopted February 10, 2000. A California vehicle model is to be treated as equivalent to a federal vehicle model if all of the following characteristics are identical:

- (a) Vehicle make and model;
- (b) Cylinder block configuration (e.g., L-6, V-8);

- (c) Displacement;
- (d) Combustion cycle;
- (e) Transmission class;
- (f) Aspiration method (e.g., naturally aspirated, turbocharged); and
- (g) Fuel (e.g., gasoline, natural gas, methanol).

The comparative stringency of the standards for the federal exhaust emissions bin and for the California vehicle emissions category shall be based on a comparison of the sum of the 100,000, 120,000, or 150,000 mile standards for NMOG and NO<sub>x</sub>.

1.54.1 If a federally-certified vehicle model is certified in California in accordance with subparagraph 1.4, the model shall be subject to the federal requirements for exhaust emissions, SFTP emissions, cold CO emissions and highway NO<sub>x</sub>. The vehicle model shall be subject to all other California requirements including evaporative emissions, OBD II, greenhouse gas emissions, and emissions warranty, except that a 2004 or earlier model-year vehicle in the federal heavy light-duty truck or medium-duty passenger vehicle classes may at the manufacturer's option be subject to the federal requirements for evaporative emissions and OBD II.

1.54.2 Prior to certification of a 2004 or subsequent model-year vehicle, a manufacturer must submit information sufficient to enable the Executive Officer to determine whether there is a federally-certified vehicle model for that model year that is equivalent to the California vehicle model based on the criteria listed in subparagraph 1.4.

1.54.3 If the Executive Officer determines that there is a federally-certified vehicle model for that model year that is equivalent to the California vehicle model, the following information shall be submitted with the Part I or Part II Application for Certification as set forth below:

(a) Part I Application for Certification: (i) Evidence of federal certification including, but not limited to, federal certification exhaust emission levels and compliance with federal SFTP, cold CO and highway NO<sub>x</sub> emission levels; and (ii) evidence of compliance with California evaporative emission requirements, California OBD II requirements, and California greenhouse gas requirements or, where permitted under Section 1.4.1 for a 2004 or earlier model-year vehicle, evidence of federal certification evaporative emission levels and compliance with federal OBD II requirements.

(b) Part II Application for Certification: evidence of a warranty on emission-related parts in accordance with sections 2035 et seq., title 13 CCR as they apply to vehicles certified under the primary California standard.

1.54.4 For purposes of meeting the California NMOG fleet average phase-in requirements or for determining vehicle equivalent credits, the applicable California NMOG value for passenger cars and light-duty trucks or vehicle equivalent credits for medium-duty vehicles shall be determined as follows:

(a) The sum of the federal full useful life (100,000, 120,000 or 150,000) NMOG and NO<sub>x</sub> value shall be compared with the next less stringent California full useful life NMOG plus NO<sub>x</sub> value to determine which emission category (e.g., LEV, ULEV or SULEV) is to be used for the fleet average value or vehicle

equivalent credit calculation.

(b) For passenger cars and light-duty trucks, once the equivalent California emission category is determined (e.g., whether the vehicle is considered a LEV, ULEV or SULEV), the applicable NMOG value to be used in the fleet average calculation is set forth in the table in section E.2.1.2 of these test procedures for passenger cars and light-duty trucks. For example, if the full useful life (120,000 miles) NMOG plus NOx standard to which the federal vehicle is certified is 0.110 grams per mile, that vehicle would be considered a LEV II ULEV for fleet average purposes because the combined LEV full useful life NMOG plus NOx value is 0.125 and is the next less stringent emission category. The applicable emission standard to be used in the fleet average calculation would therefore be 0.040 grams per mile.

1.54.5 The vehicle shall be subject to the federal in-use requirements and the emission standard applicable for in-use compliance purposes shall be the federal standard to which the vehicle was federally-certified.

1.5.6 The tune up label shall meet the federal requirements applicable to such a vehicle with an additional sentence which reads: "This vehicle conforms to federal regulations and is certified for sale in California." The value used in the smog index label shall be the California emission category to which the vehicle was deemed certified for fleet average NMOG purposes.

1.5.7 The requirements in Section H.1.4 do not apply in the case of a federally-certified vehicle model that is only marketed to fleet operators for applications that are subject to clean fuel fleet requirements established pursuant to section 246 of the federal Clean Air Act (42 U.S.C. sec. 7586). In addition, the Executive Officer shall exclude from the requirements a federally-certified vehicle model where the manufacturer demonstrates to the Executive Officer's reasonable satisfaction that the model will primarily be sold or leased to clean fuel fleet operators for such applications, and that other sales or leases of the model will be incidental to marketing to those clean fuel fleet operators.

1.54.8 A manufacturer may certify a passenger car, light-duty truck or medium-duty vehicle to federal exhaust emission standards pursuant to Section H.1.4 prior to the 2004 model year.

\* \* \* \*

#### 4.5 Greenhouse Gas Reporting Requirements.

(a) For the purpose of demonstrating compliance with greenhouse gas requirements, the manufacturer shall provide by May 1 of the calendar year following the close of the model year:

(i) A manufacturer that demonstrates compliance under section E.2.5.2.1.1, Option A, must submit a comprehensive list of all emission test results, including the test vehicle description and identification number, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emission data, the data and/or justifications used to determine the

“worst case” greenhouse gas test vehicle configuration, as required by G.2.34.2, for each greenhouse gas vehicle test group. A manufacturer that demonstrates compliance under section E.2.5.2.1.1, Option B, must submit a comprehensive list of all emission test results used to calculate its Corporate Average Fuel Economy, including the test vehicle description and identification number, for each subconfiguration and the number of vehicles produced and delivered for sale under Option 1 or Option 2 in section E.2.5.1.1, as applicable, that are represented by the subconfiguration. A manufacturer must not submit any emission test results from vehicles tested, or calculated results, as part of the Corporate Average Fuel Economy Program, unless those results have been judged acceptable by the U.S. Environmental Protection Agency, in accordance with §600.007-08. A manufacturer that submits data from the Corporate Average Fuel Economy Program must clearly indicate whether the data is derived from vehicle testing or whether it is calculated. A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements must use all of the data that is used by the U.S. Environmental Protection Agency to determine a manufacturer’s corporate average fuel economy for the applicable model year, and may forego testing of the “worst-case” configuration;

\* \* \* \*

(b) For the 2012 through 2016 model years, a manufacturer that elects to demonstrate compliance with the requirements of sections E.2.5 and E.3.2 by demonstrating compliance with the National greenhouse gas program must submit all data to the Executive Officer in accordance with the reporting requirements as required under section E.2.5.1(ii) and 40 CFR §86.1865-12, as proposed at 74 Fed.Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010).

(bc) All data submitted in accordance with this section H.4.5, must be submitted electronically and organized in a format specified by the Executive Officer to clearly demonstrate compliance with the fleet average greenhouse gas exhaust emission requirements in section E.2.5 or 40 CFR §86.1865-12 (as proposed at 74 Fed.Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010)), as applicable,

## **I. In-Use Compliance Requirements and Procedures**

### **1. §86.1845 Manufacturer in-use verification testing requirements.**

\* \* \* \*

1.2 §86.1845-04. ~~December 8, 2005~~ December 28, 2006 As proposed at 74 Fed.Reg.

49454, 49758 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). Amend as follows:

\* \* \* \*

**1.5 Greenhouse Gas Requirements.**

The manufacturer in-use verification testing requirements shall not apply to the greenhouse gas emission requirements set forth in Section E.2.5 of these test procedures.

**2. §86.1846 Manufacturer in-use confirmatory testing requirements.**

2.1 §86.1846-01 ~~July 12, 2007~~ December 28, 2006 As proposed at 74 Fed.Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page], (April [insert date], 2010). [No Change.]

\* \* \* \*

**2.4 Greenhouse Gas Requirements.**

The manufacturer in-use compliance testing requirements shall not apply to the greenhouse gas emission requirements set forth in Section E.2.5 of these test procedures.

\* \* \* \*

**J. Procedural Requirements**

1. §86.1848-01 Certification. October 6, 2000. [No change.]
- ~~2. §86.1848-10 Certification. February 26, 2007. [No change.]~~
3. §86.1848-10 Certification. As proposed at 74 Fed.Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this version of §86.1848-10 shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
- ~~43.~~ §86.1849-01 Right of entry. [No change.]
- ~~54.~~ §86.1850-01 Denial, Suspension or Revocation of Certificate of Conformity. [No change.]
- ~~65.~~ §86.1851 Application of good engineering judgment to manufacturers' decisions. [No change.]
- ~~76.~~ §86.1852 Waivers for good in-use emission performance. [No change.]
- ~~87.~~ §86.1853 Certification hearings. [No change.]
9. §86.1854-12 Prohibited acts. As proposed at 74 Fed.Reg. 49454, 49759 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change.]



108. §§86.18554 - 86.1859. [Reserved]
119. §86.1860-04 How to comply with the Tier 2 and interim Tier 2 fleet average NOx standards. [n/a]
120. §86.1861-04 How do the Tier 2 and interim Tier 2 NOx averaging, banking and trading programs work? [n/a]
131. §86.1862-04 Maintenance of records and submittal of information relevant to compliance with fleet average NOx standards. [n/a]
142. §86.1863-07 Optional Chassis Certification for Diesel Vehicles. ~~January 18, 2004~~ June 17, 2003. [No change]
15. §86.1865-12 How to comply with the fleet average CO<sub>2</sub> standards. As proposed at 74 Fed.Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
16. §86.1866-12 CO<sub>2</sub> fleet average credit programs. As proposed at 74 Fed.Reg. 49454, 49763 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
17. §86.1867-12 Optional early CO<sub>2</sub> credit programs. As proposed at 74 Fed.Reg. 49454, 49766 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]

**PART II: CALIFORNIA EXHAUST AND PARTICULATE EMISSION TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES**

This part describes the equipment required and the procedures necessary to perform gaseous and particulate exhaust emission tests (40 CFR Part 86, Subpart B); cold temperature test procedures (40 CFR Part 86, Subpart C); the California 50°F test procedure; the development of reactivity adjustment factors; and the supplemental federal test procedure (40 CFR Part 86, Subpart B) on passenger cars, light-duty trucks and medium-duty vehicles.

**A. 40 CFR Part 86, Subpart B - Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles and New Light-Duty Trucks; Test Procedures.**

\* \* \* \*

**100.2 Equipment and Facility Requirements.**

\* \* \* \*

86.111-94 Exhaust gas analytical-system. ~~September 30, 1994~~ As proposed at 74 Fed.Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010).

\* \* \* \*

**100.5 Test Procedures and Data Requirements.**

86.127-00 Test procedures; overview. ~~May 4, 1999~~ As proposed at 74 Fed.Reg. 49454, 49748 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010).

\* \* \* \*

**100.5.3 California Vehicle Preconditioning Requirements.**

\* \* \* \*

86.135-00 Dynamometer procedure. As proposed at 74 Fed.Reg. 49454, 49749 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change.]

\* \* \* \*

**100.5.4 Calculations; exhaust emissions.**

\* \* \* \*

- 86.165-12 Air Conditioning idle test procedure. As proposed at 74 Fed.Reg. 49454, 49749 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
- 86.166-12 Method for calculating emissions due to air conditioning leakage. As proposed at 74 Fed.Reg. 49454, 49750 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
- 86.167-12 N<sub>2</sub>O measurement devices. As proposed at 74 Fed.Reg. 49454, 49751 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]
- 86.168-12 Interference verification for N<sub>2</sub>O analyzers. As proposed at 74 Fed.Reg. 49454, 49752 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010). [No change, except that this section shall only apply to vehicles certifying under the National greenhouse gas program for the 2012 through 2016 model years.]

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