

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**

Adopted: August 5, 1999
Amended: December 27, 2000
Amended: July 30, 2002
Amended: September 5, 2003 (corrected February 20, 2004)
Amended: May 28, 2004
Amended: August 4, 2005
Amended: June 22, 2006
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Amended: May 2, 2008
Amended: December 2, 2009
Amended: February 22, 2010

Note: The proposed amendments to this document are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions compared to the test procedures as last amended December 2, 2009. Existing intervening text that is not amended is indicated by “* * * *”.

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

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

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B. Definitions, Acronyms and Abbreviations

1. §86.1803 Definitions.

1.1 §86.1803-01. ~~January 18, 2001~~February 26, 2007. [No change, except as otherwise noted below.]

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2. California Definitions.

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“**Optional GHG Test Vehicle Configuration**” means any GHG vehicle configuration that is selected for testing by the manufacturer as allowed by section G.2.34, other than the “worst-case” configuration.

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3. §86.1804 Acronyms and Abbreviations.

3.1 §86.1804.01 ~~October 6, 2000~~January 17, 2006. [No change.]

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C. General Requirements for Certification

1. §86.1805 Useful Life.

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1.2 §86.1805-04. ~~October 6, 2000~~February 26, 2007. Amend as follows:

1.2.1 Subparagraph (a). [No change.]

1.2.2 Amend subparagraph (b) as follows: The full useful life of LEV, ULEV and SULEV passenger cars, light-duty trucks and medium-duty vehicles certified to the optional LEV II 150,000 mile standards in section E.1.1.2 shall be 15 years or 150,000 miles, whichever occurs first.

1.2.3 Subparagraph (c) [No change.]

1.2.4 Subparagraph (d) [No change.]

1.2.5 Subparagraph (e) [n/a]

1.2.6 Subparagraph (f) [n/a]

1.2.7 Subparagraph (g) [No change.]

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3. §86.1807 Vehicle Labeling.

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3.2 §86.1807-07. ~~January 18, 2001~~July 13, 2005. [No change, except that the amendments to §86.1807-01, 70 FR 72917 (December 8, 2005), still apply.]

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4. §86.1808 Maintenance Instructions.

4.1 §86.1808-01. ~~October 6, 2000~~July 13, 2005. [No change.]

4.2 §86.1808-07. ~~January 18, 2001~~July 13, 2005. [No change.]

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

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3. §86.1810-09. February 26, 2007. [No change, except that the amendments to §86.1810-01 set forth in D.1 and D.2 shall apply.]

E. California Exhaust Emission Standards.

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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 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:

FLEET AVERAGE GREENHOUSE GAS EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM-DUTY PASSENGER VEHICLE WEIGHT CLASSES¹ (4,000 mile Durability Vehicle Basis)		
Model Year	<i>Fleet Average Greenhouse Gas Emissions (grams per mile CO₂-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

¹ 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.

2.5.2 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 CO₂-equivalent value for each GHG vehicle test group and a “highway” grams per mile average CO₂-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” CO₂-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” CO₂-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 $N_2O = 0.006$ grams per mile in lieu of measuring N_2O exhaust emissions. A manufacturer that elects to use CAFE data to demonstrate compliance with the greenhouse requirements may substitute the term $1.9 CO_2$ -equivalent grams per mile for the terms “ $296 \times N_2O + 23 \times CH_4$ ” in this equation.

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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.

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(d) A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse 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_2 -equivalent grams per mile emissions reductions.

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(d) A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse 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.

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3. Calculation of Credits/Debits

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3.2 Calculation of Greenhouse Gas Credits/Debits.

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3.2.3 Procedure for Offsetting Greenhouse Gas Debits.

3.2.3.1. A manufacturer shall equalize Greenhouse Gas emission debits by earning g/mi Greenhouse Gas emission credits in an amount equal to the g/mi Greenhouse Gas debits, or by submitting a commensurate amount of g/mi Greenhouse Gas credits to the Executive Officer that were earned previously or acquired from another manufacturer. A manufacturer shall equalize Greenhouse Gas debits for PCs, LDTs, and MDPVs within five model years after they are earned. If emission debits are not equalized within the specified time period, the manufacturer shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer which sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the emission debits are not equalized by the end of the specified time period. A manufacturer demonstrating compliance under Option 2 in section E.2.5.1.1, must calculate the emission debits that are subject to a civil penalty under Health and Safety Code section 43211 separately for California, the District of Columbia, and for each individual state that is included in the fleet average greenhouse gas requirements in subsection E.2.5.1.1. The manufacturer must calculate these emission debits separately for California, the District of Columbia, and each individual state using the formula in subsections E. 3.2.1.2 and E.3.2.2, except that the “Total No. of Vehicles Produced and Delivered for Sale in California, Including ZEVs and HEVs” shall be calculated separately for the District of Columbia and each individual state.

For the purposes of Health and Safety Code section 43211, the number of passenger cars and LDT1s not meeting the state board’s emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year calculated for California by the g/mi Greenhouse Gas fleet average requirement for PCs and LDTs 0-3750 lbs. LVW applicable for the model year in which the debits were first incurred, and the number of LDT2s and MDPVs not meeting the state board’s emission standards shall be determined by dividing the total amount of g/mi Greenhouse Gas emission debits for the model year calculated for California by the g/mi Greenhouse Gas fleet average requirement for LDTs 3751 lbs. LVW – 8500 lbs. GVW and MDPVs applicable for the model year in which the debits were first occurred.

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F. Requirements and Procedures for Durability Demonstration

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4. §86.1823 Durability demonstration procedures for exhaust emissions.

4.1 §86.1823-01 ~~October 6, 2000~~February 26, 2007. Amend as follows: Add the following sentences to the first paragraph: Beginning with 2010 model-year vehicles or engines, at the time of certification manufacturers shall state, based on good engineering judgment and available information, that the emission control devices on their vehicles or engines are durable and are designed and will be manufactured to operate properly and in compliance with all applicable requirements for the full useful life (or allowable maintenance interval) of the vehicles or engines. Also, vehicles and engines tested for certification shall be, in all material respects, substantially the same as production vehicles and engines. If it is determined pursuant to title 13 CCR, Division 3, Chapter 2, Article 5, sections 2166 through 2174 that any emission control component or device experiences a systemic failure because valid failures for that component or device meet or exceed four percent or 50 vehicles (whichever is greater) in a California-certified engine family or test group, it constitutes a violation of the foregoing test procedures and the Executive Officer of the Air Resources Board may require that the vehicles or engines be recalled or subjected to corrective action as set forth in title 13 CCR, Division 3, Chapter 2, Article 5, sections 2166 through 2174. Certification applications may not be denied based on the foregoing information provided that the manufacturer commits to correct the violation.

4.2 §86.1823-08 January 17, 2006. [No change, except that the amendments to §86.1823-01 set forth in F.4.1 shall apply.]

4.23 **SFTP**. These procedures are not applicable to vehicles certified to the SFTP standards set forth in Section E.1.2.2.

4.34 **HEVs**. A manufacturer shall consider expected customer usage as well as emissions deterioration when developing its durability demonstration for HEVs.

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7. §86.1826 Assigned Deterioration Factors for Small Volume Manufacturers and Small Volume Test Groups.

7.1 §86.1826-01. ~~October 6, 2000~~January 17, 2006. [No change.]

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. [No change.]

2. §86.1828 Emission data vehicle selection

2.1 §86.1828-01. [No change.]

2.2 §86.1828-10. February 26, 2007. [No change.]

2.23 50°F Requirements.

2.23.1 Vehicle Selection. A manufacturer shall select at least three emission data and/or engineering development vehicles each year from PC or LDT test groups and at least three emission data and/or engineering development vehicles from MDV test groups.

2.23.2 The same test group shall not be selected in the succeeding two years unless the manufacturer produces fewer than three test groups. If the manufacturer produces more than three TLEV, LEV, ULEV or SULEV test groups per model year, the Executive Officer may request 50°F testing of specific test groups. If the manufacturer provides a list of the TLEV, LEV, ULEV and SULEV test groups that it will certify for a model year and provides a description of the technologies used on each test group (including the information in Section G.2.3.1.2(4)), the Executive Officer shall select the test groups subject to 50°F testing within a 30 day period after receiving such a list and description. The Executive Officer may revise the test groups selected after the 30 day period if the information provided by the manufacturer does not accurately reflect the test groups actually certified by the manufacturer.

2.34 Greenhouse Gas Vehicle Test Group.

2.34.1 Within each test group, a manufacturer shall group vehicles into Greenhouse Gas Vehicle Test Groups based on the following criteria being identical.

- (a) Vehicle make and model;
- (b) Transmission class and driveline (e.g., 2-wheel-drive, 4-wheel-drive);
- (c) Aspiration method (e.g., naturally aspirated, turbocharged);
- (d) Camshaft configuration;
- (e) Valvetrain configuration; and
- (f) Inertia weight class.

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 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. Amend as follows:

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3.2 50°F Requirements.

A manufacturer shall demonstrate compliance with the 50°F requirement each year by testing at least three PC or LDT and three MDV emission data and/or engineering development vehicles (with at least 4000 miles) as determined under the provisions of Section G.2.23 of these test procedures. Only TLEVs, LEVs, ULEVs and SULEVs are to be considered for testing at 50°F. It is not necessary to apply deterioration factors (DFs) to the 50°F test results to comply with this requirement.

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3.4 Greenhouse Gas Testing Requirements.

A manufacturer shall demonstrate compliance with the greenhouse 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 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 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.

4. §86.1830-01 Acceptance of Vehicles for Testing. January 17, 2006. [No change.]

5. §86.1831-01 Mileage accumulation requirements for test vehicles. January 17, 2006. [No change.]

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8. §86.1834 Allowable maintenance.

8.1 §86.1834-01. ~~October 6, 2000~~July 13, 2005. [No change except that the first allowable maintenance interval under subparagraphs (b)(3)(v) and (b)(4)(ii) shall be at the full useful life of the vehicle.]

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9. §86.1835-01 Confirmatory certification testing. ~~July 12, 2001~~April 13, 2001.
[No change.]

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12. §86.1838 Small volume manufacturers certification procedures. January 17, 2006.

12.1 §86.1838-01. December 6, 2002. [No change, except that the reference to 15,000 units shall mean 4,500 units in California and the reference to 14,999 units shall mean 4,499 units in California.]

13. §86.1839-01 Carryover of certification data. January 17, 2006. [No change.]

13.1 Greenhouse Gas Requirements.

The provisions of Section E.13 shall apply to greenhouse gas certification data only if the following conditions are met.

(a) To carry over greenhouse gas certification data for a greenhouse gas vehicle group, a manufacturer must demonstrate to the Executive Officer, using good engineering judgement, that design changes to the vehicle from the previous model year do not increase greenhouse gas emissions or

(b) To carry over greenhouse gas certification data for a “worst-case” vehicle configuration, a manufacturer must demonstrate to the Executive Officer, using good engineering judgement, that the previous model-year “worst-case” vehicle configuration still represents the “worst-case” vehicle configuration for the current model-year.

14. §86.1840 Special test procedures.

14.1 §86.1840-01 ~~October 6, 2000~~August 30, 2006. [No change.]

H. Certification, Information and Reporting Requirements.

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

1.1 §86.1841-01. ~~July 12, 2001~~January 17, 2006.

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3. §86.1843 General information requirements

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3.3 Credit Reporting.

In order to verify the status of a manufacturer's compliance with the fleet average, and phase-in requirements in Sections E.2.1 through E.2.4, or the greenhouse gas requirements in Section E.2.5 for a given model year, and in order to confirm the accrual of credits or debits, each manufacturer shall submit an annual report to the Executive Officer which sets forth the

production data used to establish compliance, by no later than March 1 or May 1, respectively, of the calendar year following the close of the model year.

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4. §86.1844 Information Requirements: Application for Certification and Submittal of Information Upon Request.

- 4.1 §86.1844-01. ~~October 6, 2000~~February 26, 2007. Amend as follows:
 - 4.1.1 All references to “test group” shall mean “test group and greenhouse gas vehicle test group.”
 - 4.1.2 Modify §86.1844-01(d) as follows:
 - (a) Delete §86.1844-01(d)(9).
 - (b) Add the following requirement: A description of each greenhouse gas test vehicle including the criteria listed in Section G.2.3.4 and any additional information used by a manufacturer to demonstrate a “worst-case” vehicle configuration used to comply with the requirements of Section G.2.34.
 - 4.1.3 Add the following requirements to §86.1844-01(e):
 - (a) The information required in sections 2037, 2038 and 2039, title 13, CCR.
 - (b) The NMOG/NMHC and/or formaldehyde to NMHC ratios established according to Section I.1.4 of these test procedures

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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, CO₂, CH₄, and N₂O emission data, the data and/or justifications used to determine the “worst case” greenhouse gas test vehicle configuration, as required by G.2.3.2, 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 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;

(ii) a description of each air conditioning system and all data used to calculate the A/C Direct Emissions Allowance in subsection E.2.5.2.1.2 and the A/C Indirect Emissions Allowance in subsection E.2.5.2.1.3;

(iii) for vehicles certifying using the optional alternative compliance mechanisms in subsection E.2.5.2.2.1, all data required therein;

(iv) for manufacturers demonstrating compliance under section E.2.5.1.1, Option 1, and E.2.5.2.1.1 Option A, final volume of California vehicles produced and delivered for sale for each greenhouse gas vehicle test group;

(v) for manufacturers demonstrating compliance under section E.2.5.1.1, Option 1, and E.2.5.2.1.1 Option B, final volume of California vehicles produced and delivered for sale for each subconfiguration;

(vi) for manufacturers demonstrating compliance under section E.2.5.1.1, Option 2, and E.2.5.2.1.1 Option A, final combined and individual state volumes of vehicles produced and delivered for sale for each greenhouse gas vehicle test group for 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); and

(vii) for manufacturers demonstrating compliance under section E.2.5.1.1, Option 2, and E.2.5.2.1.1 Option B, final combined and individual state volumes of vehicles produced and delivered for sale for each subconfiguration for 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).

(b) 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.

I. In-Use Compliance Requirements and Procedures

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

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1.2 §86.1845-04. ~~December 8, 2005~~December 28, 2006. Amend as follows:

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

2.1 §86.1846-01 ~~July 12, 2001~~ December 28, 2006. [No Change.]

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J. Procedural Requirements

- 1. §86.1848-01 Certification. October 6, 2000. [No change.]
- 2. ~~§86.1848-10 Certification. February 26, 2007. [No change.]~~
- 23. §86.1849-01 Right of entry. [No change.]
- 34. §86.1850-01 Denial, Suspension or Revocation of Certificate of Conformity. [No change.]
- 45. §86.1851 Application of good engineering judgment to manufacturers' decisions. [No change.]
- 56. §86.1852 Waivers for good in-use emission performance. [No change.]
- 67. §86.1853 Certification hearings. [No change.]
- 78. §§86.1854 - 86.1859. [Reserved]
- 89. §86.1860-04 How to comply with the Tier 2 and interim Tier 2 fleet average NOx standards. [n/a]
- 910. §86.1861-04 How do the Tier 2 and interim Tier 2 NOx averaging, banking and trading programs work? [n/a]
- 101. §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]

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.

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100.4 Calibration methods and frequency.

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86.121-90 Hydrocarbon analyzer calibration. ~~June 30, 1995~~July 13, 2005.

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100.5 Test Procedures and Data Requirements.

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100.5.3 California Vehicle Preconditioning Requirements.

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86.144-94 Calculations; exhaust emissions. ~~September 5, 1997~~July 13, 2005.

100.5.4 Calculations; exhaust emissions.

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86.158-00 Supplemental Federal Test Procedures; overview. ~~October 22, 1996~~July 13, 2005.

86.158-08 Supplemental Federal Test Procedures; overview. December 27, 2006.

86.159-00 Exhaust emission test procedures for US06 emissions. December 8, 2005.

86.159-08 Exhaust emission test procedures for US06 emissions. December 27, 2006.

86.160-00 Exhaust emission test procedure for SC03 emissions. December 8, 2005.

86.161-00 Air conditioning environmental test facility ambient requirements. ~~October 22, 1996~~July 13, 2005.

86.162-00 Approval of alternative air conditioning test simulations and descriptions of AC1 and AC2. October 22, 1996.

86.162-03 Approval of alternative air conditioning test simulations. October 22, 1996.

86.163-00 Spot check correlation procedures for vehicles tested using a simulation of the environmental test cell for air conditioning emission testing. October 22, 1996.

86.164-00 Supplemental federal test procedure calculations. ~~October 22, 1996~~July 13, 2005.

86.164-08 Supplemental federal test procedure calculations. December 27, 2006.

B. Subpart C - Emission Regulations for 1994 and Later Model Year Gasoline-Fueled New Light-Duty Vehicles and New Light-Duty Trucks; Cold Temperature Test Procedures

86.201-94 General applicability. July 17, 1992.

86.201-11 General applicability. December 27, 2006.

200.1 California applicability.

Amend subparagraph 86.201-94(a) as follows: This subpart describes procedures for determining the cold temperature carbon monoxide (CO) emissions from 2000 and later model year new passenger cars, light-duty trucks, and medium-duty vehicles (excluding natural gas, diesel-fueled, and zero-emission vehicles).

86.202-94	Definitions. July 17, 1992.
86.203-94	Abbreviations. July 17, 1992.
86.204-94	Section number construction. July 17, 1992.
86.205-94	Introduction; structure of subpart. July 17, 1992.
<u>86.205-11</u>	<u>Introduction; structure of subpart. December 27, 2006.</u>
86.206-94	Equipment required; overview. July 17, 1992.
<u>86.206-11</u>	<u>Equipment required; overview. December 27, 2006.</u>

200.2 California Equipment Required; Overview.

Amend §§86.206-94 and 86.206-11, as follows:

This subpart contains procedures for exhaust emission tests on passenger cars, light-duty trucks, and medium-duty vehicles (excluding natural gas, diesel-fueled, and zero-emission vehicles.) Equipment required and specifications are as follows:

(a)(1) **Exhaust emission tests.** Exhaust from vehicles (excluding natural gas, diesel-fueled, and zero-emission vehicles) is tested for gaseous emissions using the Constant Volume Sampler (CVS) concept (§86.209). Equipment necessary and specifications appear in 40 CFR Part 86, §§86.208 through 86.214.

(a)(2) **Fuel, analytical gas, and driving schedule specifications.** Fuel specifications for exhaust emission testing for gasoline-fueled vehicles are specified in 40 CFR Part 86, §86.213. As an option, a manufacturer may utilize the fuel specified in §86.213 with the sulfur content limited to 30-40 ppm by weight. Fuel specifications for exhaust emission testing for alcohol-fueled vehicles and liquefied petroleum gas vehicles are specified in Part II, Section A.100.3 of these test procedures. Analytical gases are specified in 40 CFR Part 86, §86.214. The EPA Urban Dynamometer Driving Schedule (UDDS) for use in emission tests is specified in 40 CFR Part 86, §86.215 and appendix I to this part.

86.208-94	Dynamometer. July 17, 1992.
86.209-94	Exhaust gas sampling system; gasoline-fueled vehicles. July 17, 1992.
86.211-94	Exhaust gas analytical system. July 17, 1992 <u>December 27, 2006.</u>
86.213-04	Fuel specifications. February 10, 2000.
<u>86.213-11</u>	<u>Fuel specifications. December 27, 2006.</u>
86.214-94	Analytical gases. July 17, 1992.
86.215-94	EPA urban dynamometer driving schedule. July 17, 1992.
86.216-94	Calibrations, frequency and overview. July 17, 1992.
86.218-94	Dynamometer calibration. July 17, 1992.
86.219-94	CVS calibration. July 17, 1992.
86.221-94	Hydrocarbon analyzer calibration. July 17, 1992.
86.222-94	Carbon monoxide analyzer calibration. July 17, 1992.
86.223-94	Oxides of nitrogen analyzer calibration. July 17, 1992.

- 86.224-94 Carbon dioxide analyzer calibration. July 17, 1992.
- 86.226-94 Calibration of other equipment. July 17, 1992.
- 86.227-94 Test procedures; overview. July 17, 1992.
- 86.228-94 Transmissions. July 17, 1992.
- 86.229-94 Road load force, test weight, and inertia weight class determination. July 17, 1992.
- 86.230-94 Test Sequence; general requirements. July 17, 1992.
- 86.230-11 Test Sequence; general requirements. December 27, 2006.
- 86.231-94 Vehicle Preparation. July 17, 1992.
- 86.232-94 Vehicle Preconditioning. July 17, 1992.
- 86.235-94 Dynamometer procedure. July 17, 1992.
- 86.236-94 Engine starting and restarting. July 17, 1992.
- 86.237-94 Dynamometer test run, gaseous emissions. July 17, 1992.
- 86.237-08 Dynamometer test run, gaseous emissions. December 27, 2006.
- 86.240-94 Exhaust sample analysis. July 17, 1992.
- 86.242-94 Records required. July 17, 1992.
- 86.244-94 Calculations; exhaust emissions. ~~July 17, 1992~~ February 21, 2007.
- 86.246-94 Intermediate temperature testing. July 17, 1992.

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