

California Environmental Protection Agency
AIR RESOURCES BOARD

Part 2

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR
2009 THROUGH 2017 MODEL ZERO-EMISSION VEHICLES AND HYBRID
ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND
MEDIUM-DUTY VEHICLE CLASSES**

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Amended: December 2, 2009
Amended: March 22, 2012
Amended: December 6, 2012
Amended: May 30, 2014
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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, May 30, 2014. [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 “* * * *”.

NOTE: This document is incorporated by reference in section 1962.1, title 13, California Code of Regulations (CCR). Additional requirements necessary to complete an application for certification of zero-emission vehicles and hybrid electric vehicles are contained in other documents that are designed to be used in conjunction with this document. These other documents include:

1. “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles” (incorporated by reference in section 1961(d), title 13, CCR);
2. “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles” (incorporated by reference in section 1961.2, title 13, CCR);
23. “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” (incorporated by reference in section 1976(c), title 13, CCR);
34. “California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles” (incorporated by reference in section 1978(b), title 13, CCR);
45. OBD II (section 1968, et seq. title 13, CCR, as applicable);
56. “California Environmental Performance Label Specifications for 2009 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles” (incorporated by reference in 1965, title 13, CCR);
67. Warranty Requirements (sections 2037 and 2038, title 13, CCR);
78. “Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks” (incorporated by reference in section 2235, title 13, CCR);
89. Guidelines for Certification of Federally Certified Light-Duty Motor Vehicles for Sale in California (incorporated by section 1960.5, title 13, CCR); and
910. “California Non-Methane Organic Gas Test Procedures for 1993 through 2016 Model Year Vehicles,” (incorporated by reference in section 1961.2(d), title 13, CCR); and

11. “California Non-Methane Organic Gas Test Procedures for 2017 and Subsequent Model Year Vehicles,” (incorporated by reference in section 1961.2(d), title 13, CCR).

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CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 2009 THROUGH 2017 MODEL ZERO-EMISSION VEHICLES AND HYBRID ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND MEDIUM-DUTY VEHICLE CLASSES

A. Applicability

The emission standards and test procedures in this document are applicable to 2009 through 2017 model-year zero-emission passenger cars, light-duty trucks, and medium-duty vehicles, and 2009 through 2017 model-year hybrid electric passenger cars, light-duty trucks, and medium-duty vehicles. The general procedures and requirements necessary to certify a vehicle for sale in California are contained in the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles” or the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” as applicable, (hereinafter “LDV/MDV TPs”), and apply except as amended herein.

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C. Zero-Emission Vehicle Standards.

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4. Qualification for ZEV Multipliers and Credits.

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4.4 Credits for 2009 through 2017 Model Years ZEVs.

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(b) *Fast Refueling.* For purposes of subdivision C.4.4(a), a Model Year 2009 through 2017 ZEV, inclusive, shall be deemed a Type III, Type IV or Type V ZEV if it has the capability to accumulate at least 95 miles of UDDS range in 10 minutes or less, at least 190 miles of UDDS range in 15 minutes or less, or 285 miles of UDDS range in 15 minutes or less, respectively. For ZEVs that utilize more than one ZEV fuel, such as plug-in fuel cell vehicles, the Executive Officer may choose to waive these subdivision

C.4.4(b) fast refueling requirements and base the amount of credit earned on UDDS ZEV range, as specified in subdivision C.4.4.(a).

For Model Years 2009 through 2014, inclusive, “capability to accumulate” means the ZEV’s refueling system has been demonstrated to the satisfaction of ARB’s Executive Officer as having the potential, with appropriate infrastructure or other equipment, to accumulate the miles required under this subdivision within the given time period for the claimed ZEV type. For Model Years 2015 through 2017, inclusive, “capability to accumulate” means the ZEV’s refueling system has been demonstrated to the satisfaction of ARB’s Executive Officer as actually accumulating the miles required under this subdivision within the given time period the initial 12 month period following vehicle placement in California for the claimed ZEV type, based on actual fast refueling events. Examples of fast refueling events include any refueling of an electric vehicle that meets the time and mileage fueling criteria for a Type III, IV, or V ZEV, including the refueling of a hydrogen fuel cell vehicle or any swapping of the depleted battery pack in a battery electric vehicle with an equivalent or larger capacity, fully-charged battery pack. To receive fast refueling credits manufacturers must apply to ARB with the information and documentation as specified below.

(1). Issuance of Fast Refueling Credits for Model Year 2015, 2016, or 2017 Type III, IV, and V ZEVs.

(A) To obtain fast refueling credits, the ZEV manufacturer must apply to ARB’s Executive Officer for such credits. No credits shall be granted without Executive Officer approval of the application. Each application shall be specific to Type III, IV, or V ZEV vehicles of a single Model Year. Each application shall contain the documentation specified in subdivision C.4.4(b)(2). No later than 15 days before submittal of the first application in a calendar year, the applicant shall provide written notice to the Executive Officer of its intent to conduct fast refueling for its Type III, IV, or V ZEVs in that calendar year.

(B) Fast refueling capability shall be assigned to the number of Type III, IV, and V ZEVs of a given model year that have been fueled by an actual fast refueling event during the year initial 12 month period following vehicle placement in California.

i. The total number of a manufacturer’s Type III ZEVs assigned the fast refueling capability for a given model year, based on actual fast refueling events during the initial 12 month period following vehicle placement in California, shall not exceed the manufacturer’s total number of Type III ZEVs sold in California for that model year that are capable of fast refueling (i.e., the

sum of those Type III ZEVs that were fueled with an actual fast refueling event and those Type III ZEVs that are able to be fast refueled but were not actually fueled using any fast refueling).

ii. The provision in subdivision C.4.4(b)(1)(B)i. also applies to Type IV and V ZEVs in the same manner described for Type III ZEVs.

iii. Only the first 25 fast refueling events performed on any individual Type III, IV, or V ZEV, during the initial 12 month period following vehicle placement in California, shall count towards the total number of fast refueling events, respectively.

iv. The frequency at which fast refueling credits are issued shall be based on the frequency of records and documentation submitted to support a claim for fast refueling credits. For example, a manufacturer that submits records of fast refueling events on a monthly, quarterly, or yearly basis shall be issued fast refueling credits on the applicable monthly, quarterly, or yearly basis.

(2.) Documentation of fast refueling events

(A) For each specific model year ZEV type for which a manufacturer claims fast refueling credits, the manufacturer must submit documentation of the total number of fast refueling events used to refuel the Type III, IV or V ZEVs ~~in that model year~~ during the initial 12 month period following vehicle placement.

(B) To support a manufacturer's claimed number of fast refueling events, that manufacturer must provide documentation of each fast refueling event. For each claimed fast refueling event, the manufacturer shall document the date of the fast refueling event, street address of the fast refueling facility used, and the vehicle identification number of the vehicle that was fast refueled. Fast refueling credit applicants shall retain this documentation for a minimum of three years from the date it was created and provide the documentation to ARB staff upon request within 3 business days.

(3.) The fast refueling application and data submission requirements in this subdivision do not apply to manufacturers of fuel cell electric vehicles

because such vehicles are already designed to be fast refueled at all times.

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F. Test Procedures for 2012 through 2017 Model Zero-Emission Vehicles (including Fuel Cell Vehicles and Hybrid Fuel Cell Vehicles) and All 2012 through 2017 Model Hybrid-Electric Vehicles, Except Off-Vehicle Charge Capable Hybrid Electric Vehicles.

The “as adopted or amended dates” of the 40 CFR Part 86 regulations referenced by this document are the dates identified in the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles or the California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as applicable.” Unless otherwise noted, these requirements shall apply to all ZEVs (including fuel cell vehicles and hybrid fuel cell vehicles) and all HEVs, except off-vehicle charge capable HEVs. A manufacturer may elect to certify a 2009, 2010, or 2011 model-year zero-emission vehicle or hybrid electric vehicle, except an off-vehicle charge capable hybrid electric vehicle, using this section F.

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G. Test Procedures for 2012 through 2017 Model Off-Vehicle Charge Capable Hybrid Electric Vehicles.

The “as adopted or amended dates” of the 40 CFR Part 86 regulations referenced by this document are the dates identified in the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles or the California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as applicable.” unless otherwise noted. A manufacturer may elect to certify a 2009, 2010, or 2011 model-year off-vehicle charge capable hybrid electric vehicle using this section G. A manufacturer may elect to certify a 2015, 2016, or 2017 model-year off-vehicle charge capable hybrid electric vehicle using the “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” incorporated by

reference in Section 1962.2(h), Title 13, CCR, as an alternative to these test procedures.

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8. 50°F and 20°F Test Provision for Off-Vehicle Charge Capable Hybrid Electric Vehicles.

50°F testing shall be conducted pursuant to section G.5 with the modifications in Part II, Section C of the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for ~~2001 and Subsequent Model~~ Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles or the California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as applicable.” and the additional following revisions.

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J. Test Procedures for 2009 through 2011 Model Zero-Emission Vehicles and Hybrid-Electric Vehicles.

The “as adopted or amended dates” of the 40 CFR Part 86 regulations referenced by this document are the dates identified in the “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for ~~2001 and Subsequent Model~~ Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.”

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