

Final Regulation Order

Amend Title 13, California Code of Regulations, section 1976, to read as follows:

Note: The preexisting text of section 1976 is set forth below in normal type. The proposed amendments are shown below in underline to indicate additions and ~~strikeout~~ to show deletions.

1976. Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions.

(a) Fuel evaporative emissions from 1970 through 1977 model passenger cars and light-duty trucks are set forth in Title 40, Code of Federal Regulations, Part 86, Subparts A and C, as it existed on June 20, 1973. These standards are enforced in California pursuant to section 43008 of the Health and Safety Code.

(b)(1) Evaporative emissions for 1978 and subsequent model gasoline-fueled, 1983 and subsequent model liquefied petroleum gas-fueled, and 1993 and subsequent model alcohol-fueled motor vehicles and hybrid electric vehicles subject to exhaust emission standards under this article, except petroleum-fueled diesel vehicles, compressed natural gas-fueled vehicles, hybrid electric vehicles that have sealed fuel systems which can be demonstrated to have no evaporative emissions, and motorcycles, shall not exceed the following standards:

- (A) For vehicles identified below, tested in accordance with the test procedure based on the Sealed Housing for Evaporative Determination as set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989, the evaporative emission standards are:

<i>Vehicle Type</i>	<i>Model Year</i>	<i>Hydrocarbons⁽¹⁾ Diurnal + Hot Soak (grams/test) 50K miles</i>
Passenger cars	1978 and 1979	6.0
Light-duty trucks		6.0
Medium-duty vehicles		6.0
Heavy-duty vehicles		6.0
Passenger cars	1980-1994 ⁽²⁾	2.0
Light-duty trucks		2.0
Medium-duty vehicles		2.0
Heavy-duty vehicles		2.0

(1) Organic Material Hydrocarbon Equivalent, for alcohol-fueled vehicles.

(2) Other than hybrid electric vehicles.

(B) For the vehicles identified below, tested in accordance with the test procedure which includes the running loss test, the hot soak test, and the 72 hour diurnal test, the evaporative emission standards are:

<i>Vehicle Type</i>	<i>Model Year</i>	<i>Hydrocarbons⁽¹⁾</i>	
		<i>Three-Day Diurnal + Hot Soak (grams/test) Useful Life⁽²⁾</i>	<i>Running Loss (grams/mile) Useful Life⁽²⁾</i>
Passenger cars	1995 and subsequent ⁽³⁾	2.0	0.05
Light-duty trucks		2.0	0.05
Medium-duty vehicles (6,001-8,500 lbs. GVWR) with fuel tanks < 30 gallons		2.0	0.05
		with fuel tanks ≥ 30 gallons	2.5
(8,501-14,000 lbs. GVWR) ⁽⁴⁾		3.0	0.05
Heavy-duty vehicles (over 14,000 lbs. GVWR)	2.0	0.05	
Hybrid electric passenger cars	1993 and subsequent ⁽⁵⁾	2.0	0.05
Hybrid electric light-duty trucks		2.0	0.05
Hybrid electric medium-duty vehicles		2.0	0.05

(1) Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

(2) For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

(3) The running loss and useful life three-day diurnal plus hot soak evaporative emission standards (hereinafter "running loss and useful life standards") shall be phased in beginning with the 1995 model year. Each manufacturer, except ultra-small volume and small volume manufacturers, shall certify the specified percent (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles to the running loss and useful life standards according to the following schedule:

<u>Model Year</u>	<u>Minimum Percentage of Vehicles Certified to Running Loss and Useful Life Standards*</u>
1995	10 percent
1996	30 percent
1997	50 percent

- * The minimum percentage of motor vehicles of each vehicle type required to be certified to the running loss and useful life standards shall be based on the manufacturer's projected California model-year sales (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles. Optionally, the percentage of motor vehicles can also be based on the manufacturer's projected California model-year sales (a) of passenger cars and light-duty trucks and (b) of medium-duty vehicles and heavy-duty vehicles.

Beginning with the 1998 model year, all motor vehicles subject to the running loss and useful life standards, ~~including~~ except those produced by ultra-small volume manufacturers, shall be certified to the specified standards. In the 1999 and subsequent model years, all motor vehicles subject to the running loss and useful life standards, including those produced by ultra-small volume manufacturers, shall be certified to the specified standards.

All 1995 through 1997~~8~~ model-year motor vehicles which are not subject to running loss and useful life standards pursuant to the phase-in schedule shall comply with the 50,000-mile standards in effect for 1980 through 1994 model-year vehicles.

- (4) For the 1995 model year only, the evaporative emission standards for complete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the SHED conducted in accordance with the procedures set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989. For the 1995 and subsequent model years, the evaporative emission standards for incomplete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the test procedures specified in paragraph 4.g. of the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles."
- (5) The running loss and useful life standards for all hybrid electric vehicles shall be effective in the 1993 and subsequent model years.
- (C) For vehicles identified below, tested in accordance with the test procedure which includes the hot soak test and the 48 hour diurnal test, the evaporative emission standards are:

<i>Vehicle Type</i>	<i>Model Year</i>	<i>Hydrocarbons⁽¹⁾ Two-Day Diurnal + Hot Soak (grams/test) Useful Life⁽²⁾</i>
Passenger cars	1996 and subsequent ⁽³⁾	2.5
Light-duty trucks		2.5
Medium-duty vehicles (6,001-8,500 lbs. GVWR) with fuel tanks < 30 gallons		2.5
with fuel tanks ≥ 30 gallons		3.0
(8,501-14,000 lbs. GVWR)		3.5
Heavy-duty vehicles (over 14,000 lbs. GVWR)		4.5
Hybrid electric passenger cars	1996 and subsequent ⁽³⁾	2.5
Hybrid electric light-duty trucks		2.5
Hybrid electric medium-duty vehicles		2.5

(1) Organic Material Hydrocarbon Equivalent for alcohol-fueled vehicles.

(2) For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.

(3) The two-day diurnal plus hot soak evaporative emission standards (hereinafter "supplemental standards") shall be phased-in beginning with the 1996 model year. Those vehicles certified under the running loss and useful life standards for the 1996 and subsequent model years must also be certified under the supplemental standards.

~~(b)(1)(D)~~ Zero-emission vehicles shall produce zero fuel evaporative emissions under any and all possible operational modes and conditions.

~~(b)(2)~~ Evaporative emissions for gasoline-fueled motorcycles subject to exhaust emission standards under this article shall not exceed:

<i>Motorcycle Class</i>	<i>Model Year</i>	<i>Hydrocarbons (grams per test)</i>
Class I and II (50-279 cc)	1983 and 1984	6.0
	1985 and subsequent	2.0
Class III (280 cc and larger)	1984 and 1985	6.0
	1986 and subsequent	2.0
Class III (280 cc and larger) (Optional Standard for Small- Volume Motorcycle Manufacturers)	1986-1988	6.0

(c) The procedure for determining compliance with the standards in subsection (b) above is set forth in "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," adopted by the state board on April 16, 1975, as last amended ~~April 24, 1996, effective June 19, 1996~~ May 22, 1997, effective October 16, 1997.

(d) Motorcycle engine families certified to 0.2 grams per test or more below the applicable standards shall be exempted from the state board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" pursuant to section 2235, Title 13, California Code of Regulations.

(e) Small volume motorcycle manufacturers electing to certify 1986, 1987, or 1988 model-year Class III motorcycles in accordance with the optional 6.0 gram per test evaporative emission standard shall submit, with the certification application, a list of the motorcycle models for which it intends to seek California certification and estimated sales data for such models. In addition, each such manufacturer shall, on or before July 1 of each year in which it certifies motorcycles under the optional standard, submit a report describing its efforts and progress toward meeting the more stringent evaporative emission standards. The report shall also contain a description of the manufacturer's current hydrocarbon evaporative emission control development status, along with supporting test data, and shall summarize future planned development work.

(f)(1) For purposes of this section, a "small volume motorcycle manufacturer" means a manufacturer which sells less than 5,000 new motorcycles per year in California.

(2) For the purposes of this section, "ultra-small volume manufacturer" means any vehicle manufacturer with California sales less than or equal to 300 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years, and "small volume manufacturer" means any vehicle manufacturer with California sales less than or equal to 3000 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years.

NOTE: Authority cited: Sections 39600, 39601, 39667, 43013, 43018, 43101, 43104, and 43107, Health and Safety Code. Reference: Sections 39003, 39500, 39667, 43000, 43013, 43018, 43100, 43101, 43102, 43104, and 43107, Health and Safety Code.

State of California
AIR RESOURCES BOARD

**CALIFORNIA EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES
FOR 1978 AND SUBSEQUENT MODEL MOTOR VEHICLES**

ADOPTED: April 16, 1975
AMENDED: May 14, 1975
AMENDED: March 31, 1976
AMENDED: October 5, 1976
AMENDED: November 23, 1976
AMENDED: June 8, 1977
AMENDED: December 19, 1977
AMENDED: October 12, 1979
AMENDED: April 23, 1980
AMENDED: June 26, 1980
AMENDED: June 8, 1981
AMENDED: March 9, 1983
AMENDED: October 30, 1985
AMENDED: January 22, 1990
AMENDED: May 15, 1990; effective July 15, 1990
AMENDED: November 20, 1991; effective January 16, 1992
AMENDED: September 22, 1993; effective December 8, 1993
AMENDED: September 21, 1994; effective December 15, 1994
AMENDED: April 24, 1996; effective June 19, 1996
AMENDED: May 22, 1997; effective October 16, 1997

Note: The May 22, 1997 regulatory amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions from the version of the test procedures adopted on April 24, 1996. Only the portions of the test procedures being amended are shown in this document. The entry “[No change]” following a section or subsection means that no amendments to those provisions have been made. Section and subsection headings that are underlined have been added as part of the May 22, 1997 amendments to make the test procedures easier to follow.

**CALIFORNIA EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES
FOR 1978 AND SUBSEQUENT MODEL MOTOR VEHICLES**

The provisions of Title 40, Code of Federal Regulations (CFR), Part 86, Subparts A and B, as they pertain to evaporative emission standards and test procedures and as they were amended or adopted as of July 1, 1989, are hereby adopted as the California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles, with the following exceptions and additions:

1. Standards and Applicability

[No Change]

a. Emission Standards for Vehicles Other Than Motorcycles

[No Change]

i. Vehicles Tested Based on the Sealed Housing for Evaporative Determination

[No Change]

ii. Vehicles Tested Based on the Three-day Diurnal Sequence

For the vehicles identified below, tested in accordance with the test procedure which includes the running loss test, the hot soak test, and the three-day diurnal test (hereinafter "three-day diurnal sequence"), the evaporative emission standards are:

<i>Vehicle Type</i>	<i>Model Year</i>	<i>Hydrocarbons⁽¹⁾</i>	
		<i>Three-Day Diurnal + Hot Soak (grams/test) Useful Life⁽²⁾</i>	<i>Running Loss (grams/mile) Useful Life⁽²⁾</i>
Passenger cars	1995 and subsequent ⁽³⁾	2.0	0.05
Light-duty trucks		2.0	0.05
Medium-duty vehicles (6,001-8,500 lbs. GVWR) with fuel tanks < 30 gallons		2.0	0.05
		2.5	0.05
with fuel tanks ≥ 30 gallons (8,501-14,000 lbs. GVWR) ⁽⁴⁾		3.0	0.05
Heavy-duty vehicles (over 14,000 lbs. GVWR)	2.0	0.05	
Hybrid electric passenger cars	1993 and subsequent ⁽⁵⁾	2.0	0.05
Hybrid electric light-duty trucks		2.0	0.05
Hybrid electric medium-duty vehicles		2.0	0.05

- (1) The applicable evaporative emission standards for alcohol-fueled vehicles are expressed as OMHCE.
- (2) For purposes of this paragraph, "useful life" shall have the same meaning as provided in section 2112, Title 13, California Code of Regulations. Approval of vehicles which are not exhaust emission tested using a chassis dynamometer pursuant to section 1960.1, Title 13, California Code of Regulations shall be based on an engineering evaluation of the system and data submitted by the applicant.
- (3) The running loss and useful life three-day diurnal plus hot soak evaporative emission standards (hereinafter "running loss and useful life standards") shall be phased in beginning with the 1995 model year. Each manufacturer, except ultra-small volume and small volume manufacturers, shall certify the specified percent (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles to the running loss and useful life standards according to the following schedule:

<u>Model Year</u>	<u>Minimum Percentage of Vehicles Certified to Running Loss and Useful Life Standards*</u>
1995	10 percent
1996	30 percent
1997	50 percent

* The minimum percentage of motor vehicles in each vehicle type required to be certified to the running loss and useful life standards shall be based on the manufacturer's projected California model-year sales (a) of passenger cars and (b) of light-duty trucks, medium-duty vehicles and heavy-duty vehicles. Optionally, the percentage of motor vehicles can also be based on the manufacturer's projected California model-year sales (a) of passenger cars and light-duty trucks and (b) of medium-duty vehicles and heavy-duty vehicles.

Beginning with the 1998 model year, all motor vehicles subject to the running loss and useful life standards, ~~including~~ except those produced by ultra-small volume manufacturers, shall be certified to the specified standards. In the 1999 and subsequent model years, all motor vehicles subject to the running loss and useful life standards, including those produced by ultra-small volume manufacturers, shall be certified to the specified standards.

All 1995 through 1997~~8~~ model-year motor vehicles which are not subject to running loss and useful life standards pursuant to the phase-in schedule shall comply with the 50,000-mile standards in effect for 1980 through 1994 model-year vehicles.

- (4) For the 1995 model year only, the evaporative emission standards for complete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the SHED conducted in accordance with the procedures set forth in Title 40, Code of Federal Regulations, sections 86.130-78 through 86.143-90 as they existed July 1, 1989. For the 1995 and subsequent model years, the evaporative emission standards for incomplete vehicles in this weight range shall be 2.0 grams/test and compliance with the evaporative emission standards shall be based on the test procedures specified in paragraph 4.g.
- (5) The running loss and useful life standards for all hybrid electric vehicles shall be effective in the 1993 and subsequent model years.

iii. Vehicles Tested Based on the Two-day Diurnal Sequence

[No Change]

b. Emission Standards for Motorcycles

[No Change]

2. Definitions

The definitions in section 1900, Title 13, California Code of Regulations, and in the applicable model-year California exhaust emission standards and test procedures, are hereby incorporated into this test procedure by reference. For the purposes of this test procedure and section 1976 of Title 13, California Code of Regulations, “ultra-small volume manufacturer” shall mean any vehicle manufacturer with California sales less than or equal to 300 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years, and “small volume manufacturer” shall mean any vehicle manufacturer with California sales less than or equal to 3000 new vehicles per model year based on the average number of vehicles sold by the manufacturer in the previous three consecutive model years.

The following definitions shall apply:

1. "Diurnal evaporative emissions" means evaporative emissions resulting from the daily cycling of ambient temperatures.
2. "Hot soak evaporative emissions" means evaporative emissions after termination of engine operation.
3. "Running loss evaporative emissions" means evaporative emissions that occur during vehicle operation.

3. a. **Application for Certification**

[No Change]

b. **Medium-duty Certification Approval**

[No Change]

4. **Durability Demonstration**

[No Change]

a. **1978 Model Year**

[No Change]

b. **1979-1994 Model Years**

[No Change]

c. **1995 and Subsequent Model Years**

[No Change]

d. **Instrumentation**

[No Change]

e. Calibrations

[No Change]

f. Road Load Power, Test Weight, Inertia Weight Class, and Running Loss Fuel Tank Temperature Profile Determination

[No Change]

g. Test Procedure

[No Change]

i. General Requirements :

[No Change]

ii. Vehicle Preparation

[No Change]

iii. Vehicle Preconditioning

[No Change]

iv. Dynamometer pProcedure :

[No Change]

v. Engine sStarting and rRestarting :

[No Change]

vi. Dynamometer tTest rRun, gGaseous and pParticulate eEmissions :

[No Change]

vii. Vehicle Fuel Tank Temperature Stabilization

[No Change]

viii. Running Loss Test

[No Change]

ix. Hot-sSoak Test :

[No Change]

x. **Diurnal bBreathing HLoss tTest** -

[No Change]

xi. **Calculations; eEvaporative eEmissions** -

[No Change]

h. **Liquefied Petroleum Gas-fueled Vehicles**

[No Change]

i. **Fuel Specifications**

[No Change]

j. **Use of §§ 86.107-96 through 86.143-96**

[No Change]

k. **Use of Comparable Federal Requirements for Carry-across Specifications and Road Profile Correction Factors**

[No Change]

5. **Heavy-duty Vehicle and Incomplete Medium-duty Vehicle Approval**

[No Change]

6. **1980 Model Year Background Emissions Correction**

[No Change]

7. **Motorcycles: Test Procedures**

[No Change]

8. **Motorcycles: Durability Demonstration**

[No Change]

9. **Liquefied Petroleum Gas-fueled Vehicles: Calculations**

[No Change]