

APPENDIX J

State of California AIR RESOURCES BOARD

PROPOSED

CALIFORNIA ENVIRONMENTAL PERFORMANCE LABEL SPECIFICATIONS FOR 2009 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES

Adopted: May 2, 2008
Amended: March 22, 2012
Amended: [INSERT DATE OF AMENDMENT]

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 amended March 22, 2012. [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 “* * * *”.

**State of California
AIR RESOURCES BOARD**

California Environmental Performance Label Specifications

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2. Requirements.

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- (b) Alternate Environmental Performance Label: An alternate Environmental Performance label, which is reduced in size, may be used, if and only if the following requirements are met:

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- (5) The alternate label must take the form as set forth in paragraph **7. 8. Alternate Environmental Performance Label Format Requirements** and Attachment B of these specifications.

3. Global Warming Score

- ~~(a) The global warming emissions value used to determine a vehicle's global warming score must be measured and calculated as follows:~~

- ~~(1) If California has received a waiver of federal preemption under the Clean Air Act, Section 209(b), to enforce Title 13, California Code of Regulations, Section 1961.1 as noticed in the Federal Register, then the global warming emissions value is the CO₂-equivalent combined value as calculated in accordance with Title 13, California Code of Regulations, Section 1961.1(a)(1)(B) and certified pursuant thereto.~~

- ~~(2) If California has not received a waiver of federal preemption under the Clean Air Act, Section 209(b), to enforce Title 13, California Code of Regulations, Section 1961.1 as noticed in the Federal Register, then the global warming emissions value is the CO₂-equivalent combined value as calculated using the following method:~~

- ~~(A) If the vehicle is not equipped with an air conditioning system, then the CO₂-equivalent combined value is calculated using this equation:~~

~~CO₂-equivalent combined value = [(0.55 x CO₂-city + 0.45 x CO₂-highway) + 2] x Fuel Adjustment Factor~~

~~(B) If the vehicle is equipped with an air conditioning system, then the CO₂-equivalent combined value is calculated using this equation:~~

~~CO₂-equivalent combined value = [(0.55 x CO₂-city + 0.45 x CO₂-highway) + 25 — (A/C-direct + A/C-indirect)] x Fuel Adjustment Factor~~

~~Where:~~

- ~~i. “CO₂-city” and “CO₂-highway” values are the vehicle’s grams per mile city and highway CO₂ measured emissions reported to ARB in accordance with the August 29, 2007, ARB Mailout, MSO #2007-03, and incorporated by reference herein.~~
- ~~ii. “A/C-direct” is a credit for an A/C system that qualifies as a “low-leak” system. The A/C-direct default value is zero for A/C systems that do not qualify as a “low-leak” system. To qualify as a “low-leak” A/C system that uses HFC-134a as the refrigerant, the following requirements apply and the Executive Officer will review submitted demonstrations for approval:~~
 - ~~1. The manufacturer must demonstrate via engineering evaluation that the A/C system minimizes overall refrigerant leakage by:~~
 - ~~a. Minimizing the number of fitting and joints.~~
 - ~~b. Limiting the use of single O-rings for pipe and hose connections.~~
 - ~~c. Using lowest permeability hose for containment of the refrigerant.~~
 - ~~d. Minimizing leakage from compressor shaft seal and housing seals.~~
 - ~~2. Annual leakage refrigerant emissions are measured and determined in accordance with SAE International standard J2727 (Rev. Jul. 2007), incorporated by reference herein. If the A/C system is determined to be a “low-leak” system in accordance with paragraphs 3.(a)(2)(B)ii.1. and 2. Above and if approved by the Executive Officer, the A/C-direct credit is then calculated using the following equation:~~

$$A/C\text{-direct} = 6 - \text{SAE J2727 measured annual refrigerant leakage in grams} \times 1300 / 12,000$$

iii. ~~For an A/C system that uses a refrigerant with a Global Warming Potential $\leq$ 150 times that of CO₂, the A/C-direct credit is equal to 6 grams/mile.~~

iv. ~~"A/C-indirect" is a credit for an A/C system that qualifies as an "improved" system. The A/C-indirect default value is zero for A/C systems that do not qualify as an "improved" system. To qualify as an "improved" system that uses CO₂, HFC-134a, HFC-152a, or other halocarbon refrigerant, the following requirements apply and the Executive Officer will review submitted demonstrations for approval:~~

- ~~1. The manufacturer demonstrates using test data in an engineering evaluation that the A/C system achieves lower A/C-indirect emissions than the default value of 17 grams/mile.~~
- ~~2. The system manages outside and re-circulated air balance to achieve comfort, demisting, and safety requirements, based on factors such as temperature, humidity, pressure, and level of fresh air in the passenger compartment in order to minimize compressor usage.~~
- ~~3. The system is optimized for energy efficiency by utilizing state-of-the-art high efficiency evaporators, expansion devices, condensers, and other components.~~
- ~~4. The system has external controls that adjust the evaporative temperature to minimize the necessity of reheating cold air to satisfy occupant comfort. If the A/C system is determined to be an "improved" system in accordance with paragraphs 3.(a)(2)(B)iv.1. through 4. Above and if approved by the Executive Officer, the A/C-indirect credit is calculated using the following equation:~~

$$A/C\text{-indirect} = 17 - \text{Compressor Displacement in cubic centimeters} \times 5 / 100$$

v. ~~"Fuel Adjustment Factor" is the upstream greenhouse gas emission adjustment factor for various fuels and is assigned the following values:~~

Fuel Type	Fuel Adjustment Factor
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Gasoline	1.00
Diesel	1.00
Natural Gas	1.03
LPG	0.89
E85	0.74

(C) ~~Vehicles that use electricity or hydrogen as their only fuel source are exempt from testing and submission of greenhouse gas data for calculating CO₂-equivalent combined values. Such vehicles will be assigned a default CO₂-equivalent combined value as follows:~~

Vehicle Type	CO ₂ -equivalent combined value (g/mile)
Battery Electric	130
Hydrogen Internal Combustion	290
Hydrogen Fuel Cell Electric	210

(b) ~~The average new vehicle CO₂-equivalent combined value is projected to be 360 grams per mile and will be assigned a global warming score of 5.~~

(a) The global warming scores in the following table apply to all:

- (1) passenger cars,
- (2) light-duty trucks 0-8500 lbs. GVW, except trucks 3751 lbs. LVW to 500 lbs. GVW that are certified to Option 1 LEV II NO_x standard, pursuant to Title 13, California Code of Regulations, Section 1961(a)(1), and
- (3) medium-duty passenger vehicles 8501-9999 lbs. GVW:

Global Warming Scores¹

Grams per mile CO ₂ -equivalent combined	Global Warming Score
Less than 200	10
200-239 <u>201-243</u>	9
240-279 <u>244-291</u>	8
280-319 <u>292-335</u>	7
320-359 <u>336-378</u>	6
360-399 <u>379-456</u>	5

¹ Based on United States Environmental Protection Agency Greenhouse Ratings described in the Smartway Vehicle Thresholds for Model Year 2015.
<http://www.epa.gov/greenvehicles/documents/420b14005.pdf>

400-439 <u>457-539</u>	4
440-479 <u>540-613</u>	3
480-519 <u>614-658</u>	2
520 and up <u>659 and up</u>	1

4. Smog Score

(a) ~~The average new vehicle NMOG + NOx certification value is projected to be closest to an Ultra-Low-Emission Vehicle (ULEV) certification and is assigned a smog score of 5, regardless of actual average certified values.~~

(ba) The smog scores in the following table apply to 2009~~15~~ and subsequent model year passenger cars and light-duty trucks 0-8500 lbs. GVW and medium-duty passenger vehicles 8501-9999 lbs. GVW, as certified pursuant to Title 13, California Code of Regulations, Section 1961(a)(1):

Smog Scores²

California Emissions Category– Federal Bins	NMOG + NOx (g/mile)	Smog Score
ZEV – Bin 1	0.0	10
<u>SULEV20, PZEV</u>	<u>0.020 - 0.030</u>	9
<u>SULEV30, SULEV – Bin 2</u>	0.030	8
<u>ULEV50, ULEV70 – Bin 3</u>	<u>0.05, 0.07 - 0.085</u>	7
<u>ULEV, ULEV125 – Bin 4</u>	<u>0.110 – 0.125</u>	6
<u>ULEV</u> <u>LEV, LEV160 – Bin 5</u>	<u>0.125 0.160</u>	5
<u>LEV – Bin 5</u> <u>LEV option 1 – Bin 6</u>	<u>0.160 0.190 – 0.200</u>	4
<u>[LEV (option 1) – Bin 6] and</u> <u>[SULEV (MDPV)] Bin 7</u>	<u>0.190 – 0.200 0.240</u>	3
<u>Bin 7</u> <u>SULEV large trucks* – Bin 8</u>	<u>0.240 0.20 – 0.356</u>	2
<u>ULEV (MDPV) – Bin 8a</u> <u>ULEV & LEV MDPVs</u>	<u>0.325- 0.343 - 0.395</u>	1

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² Based on United States Environmental Protection Agency Smog Ratings described in the Smartway Vehicle Thresholds for Model Year 2015. <http://www.epa.gov/greenvehicles/documents/420b14005.pdf>

6. Global Warming and Smog Score Updates. The Global Warming Scores and Smog Scores will be updated annually through a Manufacturers Advisory Correspondence to be released the first quarter of each year for the next model year vehicles.

76.Environmental Performance Label Format Requirements. Detailed printing requirements and a sample label are given in Attachment A of this specification and apply to the label requirements of paragraph 2.(a) of these specifications. Unless otherwise stated, a dimensional tolerance of plus or minus 0.039 inches (1.0 millimeter) applies to printer and label feedstock alignment.

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87. Alternate Environmental Performance Label Format Requirements. Detailed printing requirements and a sample alternate label are given in Attachment B of this specification and apply to the label requirements of paragraph 2.(b) of these specifications. Unless otherwise stated, a dimensional tolerance of plus or minus 0.039 inches (1.0 millimeter) applies to printer and label feedstock alignment.

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98. Severability. Each provision of these specifications is severable, and in the event that any provision or part(s) thereof are held to be invalid, the remainder of these specifications remain in full force and effect.

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