

Environmental Protection Agency

§ 86.1817-08

(ii) During certification, the manufacturer shall declare its intent to include specific test groups in the early banking program described in this paragraph (n).

(2) *Credit generation and use.* (i) Early credits may be generated by test groups starting in model year 2000.

(ii) Credits may only be used for complete heavy-duty vehicles subject to chassis-based standards, except as provided by paragraph (o) in this section, and all credits shall be subject to discounting and all other provisions contained in paragraphs (a) through (m) of this section.

(o) *Credit transfers.* A manufacturer that elects to comply with Option 1 or 2 contained in § 86.005-10(f) may transfer credits between its complete vehicle averaging set and its heavy-duty Otto-cycle engine averaging set as follows:

(1) Credits earned in model years 2004 (2003 for Option 1) through 2007 are eligible to be transferred.

(2) Transferred credits may not be banked for use in model years 2008 and later. Credits that are transferred but not used prior to model year 2008 must be forfeited.

(3) Prior to transferring credits, a manufacturer must develop a methodology to transfer the credits including a conversion factor that may be used to convert between chassis-based credits (derived on a grams per mile basis) and equivalent engine-based credits (derived on a grams per brake horsepower-hour basis). The methodology must be approved by EPA prior to the start of the model year in which the credits are to be transferred. The conversion factor must provide reasonable certainty that the credits are equivalent for the specific vehicle test group(s) and engine family(s) involved in the generation and use of the credits.

[65 FR 59971, Oct. 6, 2000, as amended at 71 FR 2830, Jan. 17, 2006]

§ 86.1817-08 Complete heavy-duty vehicle averaging, trading, and banking program.

Section 86.1817-08 includes text that specifies requirements that differ from § 86.1817-05. Where a paragraph in § 86.1817-05 is identical and applicable

to § 86.1817-08, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1817-05.”

(a) through (o) [Reserved]. For guidance see § 86.1817-05.

(p) The following provisions apply for model year 2008 and later engines. These provisions apply instead of the provisions of paragraphs § 86.1817-05 (a) through (o) to the extent that they are in conflict.

(1) Manufacturers of Otto-cycle vehicles may participate in an NMHC averaging, banking and trading program to show compliance with the standards specified in § 86.1806-08. The generation and use of NMHC credits are subject to the same provisions in paragraphs § 86.1817-05 (a) through (o) that apply for NO_x credits, except as otherwise specified in this section.

(2) NO_x or NMHC (or NO_x plus NMHC) credits may be exchanged between heavy-duty Otto-cycle test groups certified to the engine standards of subpart A of this part and heavy-duty Otto-cycle test groups certified to the chassis standards of this subpart, subject to an 0.8 discount factor (e.g., 100 grams of NO_x credits generated from vehicles would be equivalent to 80 grams of NO_x credits if they are used in the engine program of subpart A of this part, and vice versa). Credits that were previously discounted when they were banked according to § 86.1817-05(c), are subject to an additional discount factor of 0.888 instead of the 0.8 discount factor otherwise required by this paragraph (p)(2). This results in a total discount of 0.8 ($0.9 \times 0.888 = 0.8$).

(3) Credits are to be rounded to the nearest one-hundredth of a Megagram.

(4) To calculate credits relative to the NO_x standards listed in § 86.1816-08 (a)(1)(iv)(A) or (a)(2)(iv)(A) (0.2 or 0.4 grams per mile, respectively) express the standard and FEL to the nearest one-hundredth of a gram per mile prior to calculating the credits. Thus, either 0.20 or 0.40 should be used as the value for “Std”.

(5) Credits generated for 2008 and later model year test groups are not discounted (except as specified in § 86.1817-05(c) and paragraph (p)(2) of this section), and do not expire.

(6) For the purpose of using or generating credits during a phase-in of new standards, a manufacturer may elect to split a test group into two subgroups: one which uses credits and one which generates credits. The manufacturer must indicate in the application for certification that the test group is to be split, and may assign the numbers and configurations of vehicles within the respective subfamilies at any time prior to the submission of the end-of-year report described in §86.1817–05 (i)(3). Manufacturers certifying a split test group may label all of the vehicles within that test group with the same FELs: either with a NO_x FEL and an NMHC FEL, or with a single NO_x+NMHC FEL. The FEL(s) on the label will apply for all SEA or other compliance testing.

(7) Vehicles meeting all of the applicable standards of §86.1816–08 prior to model year 2008 may generate NMHC credits for use by 2008 or later test groups. Credits are calculated according to §86.1817–05(c), except that the applicable FEL cap listed in §86.1816–08(a)(1)(ii)(B) or (2)(ii)(B) applies instead of “Std” (the applicable standard).

[66 FR 5192, Jan. 18, 2001]

§§ 86.1818–86.1819 [Reserved]

§ 86.1820–01 Durability group determination.

This section applies to the grouping of vehicles into durability groups. Manufacturers shall divide their product line into durability groups based on the following criteria:

(a) The vehicles covered by a certification application shall be divided into groups of vehicles which are expected to have similar emission deterioration and emission component durability characteristics throughout their useful life. Manufacturers shall use good engineering judgment in dividing their vehicles into durability groups. Such groups of vehicles are defined as durability groups.

(b) To be included in the same durability group, vehicles must be identical in all the respects listed in paragraphs (b) (1) through (7) of this section:

(1) Combustion cycle (e.g., two stroke, four stroke, Otto cycle, diesel cycle).

(2) Engine type (e.g., piston, rotary, turbine, air cooled versus water cooled).

(3) Fuel used (e.g., gasoline, diesel, methanol, ethanol, CNG, LPG, flexible fuels).

(4) Basic fuel metering system (e.g., throttle body injection, port injection (including central port injection), carburetor, CNG mixer unit).

(5) Catalyst construction (for example, beads or monolith).

(6) Precious metal composition of the catalyst by the type of principal active material(s) used (e.g., platinum based oxidation catalyst, palladium based oxidation catalyst, platinum and rhodium three-way catalyst, palladium and rhodium three way catalyst, platinum and palladium and rhodium three way catalyst).

(7) The manufacturer must choose one of the following two criteria:

(i) Grouping statistic:

(A) Vehicles are grouped based upon the value of the grouping statistic determined using the following equation:

$$GS = [(Cat Vol)/(Disp)] \times Loading Rate$$

Where:

GS = Grouping Statistic used to evaluate the range of precious metal loading rates and relative sizing of the catalysts compared to the engine displacement that are allowable within a durability group. The grouping statistic shall be rounded to a tenth of a gram/liter, in accordance with the Rounding-Off Method specified in ASTM E29–93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference, see §86.1).

Cat Vol = Total volume of the catalyst(s) in liters.

Disp = Displacement of the engine in liters.

Loading rate = The mass of total precious metal(s) in the catalyst (or the total mass of all precious metal(s) of all the catalysts if the vehicle is equipped with multiple catalysts) in grams divided by the total volume of the catalyst(s) in liters.

(B) Engine-emission control system combinations which have a grouping statistic which is either less than 25 percent of the largest grouping statistic value, or less than 0.2 g/liter (whichever allows the greater coverage of the durability group) shall be