

DRAFT PROCEDURES FOR EXEMPTION OF ADD-ON AND MODIFIED PART(S) FOR ON-ROAD VEHICLES/ENGINES

I. APPLICABILITY

These procedures apply to any entity that manufactures add-on or modified part(s), as defined in California Code of Regulations (CCR) Title 13, Section 1900 (b), (1) and (14), Title 13. Add-on or modified part(s) that satisfy the criteria as specified in these procedures will be issued an Executive Order by the Executive Officer that exempts the add-on or modified part(s) from the prohibitions of Section 27156 of the California Vehicle Code.

These procedures do not affect the provisions of CCR Title 13, Section(s) 2030, Liquefied Petroleum Gas or Natural Gas Retrofit Systems, 2031, Alcohol or Alcohol/Gasoline Fuels Retrofit Systems, 2222, Aftermarket Parts, 2470 - 2476 Certification Procedures for Aftermarket Parts for Off-Road Vehicles, Engines, Equipment, and 2700 - 2710, Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines.

II. DEFINITIONS

The definitions in Section 1900(b), Chapter 3, Title 13 of the California Code of Regulations shall apply with the following additions:

“Adjustment Factors” means a numerical value added, multiplied, or subtracted to measured emissions for determining compliance with the emission standards.

“Baseline levels” is the benchmark level of emissions from a nominal test vehicle or engine. It is the emissions results of the test vehicle/engine using California Air Resources Board procedures before the add-on or modified part is installed.

“Calibration Identification Code” identifies the particular version of software in the electronic control module.

“Calibration Verification Number” is computed by the electronic control module and is a check-sum calculation to verify the integrity of the data in the electronic control module.

“California Certified Vehicle/Engine” is a motor vehicle or engine that is covered by an Executive Order issued by the California Air Resources Board.

“California Smog Check Program” or “Smog Check Inspection” means the program as set forth in Chapter 5, Part 5, Division 26 of the Health and Safety Code.

“Days” means business days not calendar days, unless otherwise noted.

“Deterioration Factors” means a numerical value added to or multiplied by measured emissions for determining compliance with the emission standards.

“Device” means a manufacturer’s add-on or modified part that is described in an exemption request application and Executive Order.

“Drivability” means vehicle or engine performance at acceleration, cruise, idle, and/or cold-start conditions.

“Emission Control System” or “ECS” means the pollution control components on a vehicle/engine at the time of test group/engine family certification, including but not limited to, the emission control label.

“Emission Standards” are the legal limit on the amount of specific air pollutants released from the vehicle or engine over a specific interval, distance traveled, brake horsepower hour, etc.

“Engine Configuration” describes a set of common engine operating characteristics (e.g. method of aspiration) and engine operating design (e.g. cylinder count)

“Executive Officer” means the Executive Officer of the California Air Resources Board or his or her authorized representative or designee.

“Evaporative Testing” refers to the procedures set forth in “California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles”, amended September 2, 2015

“Federal Test Procedure” also known as “FTP” refers to the certification tailpipe exhaust emission standards and test procedures applicable to the class to which a vehicle/engine is certified as referenced in California Code of Regulations, Title 13, Sections 1960.1(k), 1961.2(d), and 1956.8(b) and (d).

“Gross Vehicle Weight Rating” (GVWR) means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle, consistent with good engineering judgement as referenced in Code of Federal Regulations, Title 40, Section 86.1803-01.

“Highway Testing” means the Highway Fuel Economy Test, described in the Code of Federal Regulations, Title 40, part 600, subpart B

“In-Use Monitoring Performance Ratios” means the ratio testing of monitors as referenced in California Code of Regulations, Title 13, Section 1968.2 (d)(4).

“Malfunction Indicator Light” (MIL) symbol when illuminated or blinking, indicates a fault in the emission control system as referenced in California Code of Regulations, Title 13, Section 1968.2 (d)(2).

“Manufacturer” means any entity, with design control, that manufactures add-on or modified part(s).

“NTE” also known as the “Not-To-Exceed test”, means the heavy-duty engine dynamometer test cycle, described in the Code of Federal Regulations, Title 40, Section 86.1370-2007.

“On-Board Diagnostic System” (OBD) is a system that manufacturers develop to meet vehicle/engine self-diagnosis and reporting capabilities as referenced in California Code of Regulations, Title 13, Section 1968.2 (d)(1).

“Road Load” means the force or torque which opposes the movement of a vehicle.

“SC03” also known as the “SC03 Supplemental Federal Test Procedure” (SFTP), simulates testing with air conditioning operating in an environmental test cell by adding a heat load to the passenger compartment, means the test cycle, described in the Code of Federal Regulations, Title 40, Section 86.160-00. AC2 is an alternate test cycle to the SC03, as described in the Code of Federal Regulations, Title 40, Section 86.162–00.

“SET” also known as the “Supplemental Emissions Test”, means the heavy-duty engine dynamometer test cycle, described in the Code of Federal Regulations, Title 40, Section 86.1360.

“Steady State” testing, means the heavy-duty engine dynamometer test cycle, described in the Code of Federal Regulations, Title 40, Section 1048.505 or a chassis based certified vehicle on a dynamometer at a set road load and speed, evaluated over a specified time period.

“US06” also known as the “US06 Supplemental Federal Test Procedure” (SFTP), means the test cycle, described in the Code of Federal Regulations, Title 40, Section 86.159-00, which is designed to evaluate emissions during aggressive and micro-transient driving.

“Vehicle Identification Number” means a series of letters and numbers that is assigned to a motor vehicle for identification purposes as referenced in the Code of Federal Regulations, Title 49, Part 565.

“World Motorcycle” Test Cycle (WMTC) is a simulated motorcycle driving cycle conducted on a dynamometer to measure exhaust emissions as referenced in Regulation (EU) No. 168/2013 dated January 15, 2013

III. APPLICATION SUBMISSION REQUIREMENTS

(a) Category Selection

A manufacturer must choose **only one** of the following categories that best describes the application or device:

Manufacturers which receive an exemption for any device that modifies the stock Engine Control Module (ECM) and/or body or transmission control module(s), excluding speedometer and/or wheel speed adjusters, shall be required to collect vehicle identification numbers from a purchaser's vehicle which is related to the received exemption. If requested by the Executive Officer, the manufacturer shall submit this information within 45 days. A delay or non-submission of this requested information could result in a hold on current and/or new applications from subjected manufacturer that contain modifications to the stock ECM and/or body or transmission control module(s).

(1) Category I – Part Number(s) and/or Name Change(s), Model-Year Additions on Carryover Vehicle(s), Private Label(s) or Extending Coverage to Subsidiaries

A manufacturer that has been issued an exemption Executive Order for a device and seeks only to: Add part number(s) and/or name change(s), model-year additions on carryover vehicle(s), and private label(s) or extending coverage to subsidiaries. See Sections VI (b-d) for eligibility requirements.

(2) Category II – Air Intake Kits or Modifications

Air Intake kits or modifications made to the stock air intake system that are not applicable to Category VIII and include no other parts or modifications for proper installation. Use a Category IX application if other parts or modifications are included.

(3) Category III – Engine Control Module (ECM) Programmers and/or ECM Signal Modifications

New ECM calibrations and/or ECM signal modifications and include no other parts or modifications for proper installation. Use a Category IX application if other parts or modifications are included.

(4) Category IV – Fuel Tanks and/or Fuel Tank Modifications

New fuel tanks and/or modifications made to the stock fuel tank.

(5) Category V – Intercooler Kits, Intercooler Components or Modifications

Intercooler kits, intercooler, intercooler pipes or tubes, and/or modifications

made to the stock intercooler systems and include no other parts or modifications for proper installation. Use a Category IX application if other parts or modifications are included.

(6) Category VI – Supercharger/Turbocharger Kits or Modifications

Supercharger and Turbocharger kits or modifications made to a stock supercharger or turbocharger.

(7) Category VII – Pre-Catalyst Exhaust Components

Exhaust components installed upstream of any catalytic converter(s) such as headers, connecting pipes, exhaust manifolds, and turbine inlet and outlet pipes, and not applicable to Category VIII. No other parts or modifications are included for proper installation. Use a Category IX application if other parts or modifications are included.

(8) Category VIII – Other Categorized Parts

This category is for add-on or modified part(s) that fit in one of the following devices listed:

- (A) Air Filter Rams (dirty side air intake funnel, retaining stock air box lid)
- (B) Air Cleaner Kits for motorcycles (not equipped with OEM HC trap)
- (C) Automatic Transmission Shift Kits (no change in shift points)
- (D) Exhaust or Transmission Braking Systems
- (E) Ignition Coils, Spark Enhancers, Multispark Modules
- (F) Ignition Modules that replace Stock Ignition Points
- (G) Ignition Distributors
- (H) Intake Manifolds (vehicles/engines not equipped with an OBD II system and/or EGR valve)
- (I) Lift Pumps, non-adjustable fuel pumps, fuel pump voltage modifiers, and fuel pump control modules (only for vehicles/engines equipped with a downstream pressure regulator)
- (J) Pulley Kits (non-supercharged vehicles/engines)
- (K) Rear Axle Modifications (within a 3 percent N/V (engine speed to vehicle speed) ratio change from an OEM option range)
- (L) Exhaust Manifolds or Shorty Headers for 1995 and older vehicles/engines, must retain the stock or a direct fit connecting pipe(s). Applicable sensor(s), air injection and/or EGR ports must remain in a stock location and orientation.
- (M) Speedometer and/or wheel speed adjusters
- (N) Throttle Bodies (without fuel injectors), Throttle Body Spacers, Throttle Body Elbows, and Carburetor Spacers
- (O) Torque Converters

(P) Oil Separators (diesel vehicles/engines only)

(9) Category IX – Add-On or Modified Part(s) Not Applicable to Categories II through VIII.

Add-on or modified part(s) that do not fit the above mention Categories of II through VIII.

(b) Application Requirements. The application must contain:

- (1) List of vehicles/engines covered by device
- (2) List of test groups, engine families and/or evaporative families with applicable CARB new vehicle/engine executive order number(s)
- (3) List of part numbers assigned by the manufacturer for each kit and/or part.
- (4) Step by step installation instructions with a parts list and schematics for each kit and/or part number.
- (5) Detailed description of the device including operating principles, cross-sectional drawings, electrical schematics, and other such material to assist CARB staff in understanding its operation.
- (6) A facsimile of an exemption label (see Section VIII for labeling requirements).
- (7) Sample kit and/or part (if requested by the Executive Officer)

(c) Application Forms

Application forms are available at CARB's website; submission instructions will be included with each application form.

Manufacturers planning to submit more than one exemption application during a 12 month period should to send a "Letter of Intent" to:

Chief
Aftermarket Parts Certification and Audit Branch
California Air Resources Board
(Add Riverside address)

The Letter of Intent should include general information on the manufacturer's proposed device submissions during the next 12 months. Letter of Intent should also include a detailed device description, applicability, and persons authorized to communicate with CARB staff during the exemption process. Upon receiving the "Letter of Intent", CARB staff will contact manufacturer to

review proposed submissions.

(d) Vehicle/Engine Coverage Requirements

- (1) The manufacturer must prepare each application according to the criteria listed below. Vehicles/engines listed in the application must comply with the following criteria, except when combined under same test group/engine family.
 - (A) Single original equipment vehicle/engine manufacturer
 - (B) Same vehicle/engine class
 - (C) Same engine configuration (i.e. I4, V6, V8)
 - (D) Same fuel type (flex-fuel is included with gasoline)
 - (E) Same emissions control technologies
 - (F) Same emission standards
- (2) If applicable, a list of excluded vehicles/engines, within the scope of vehicle(s)/engine(s) listed above with test groups/engine/evaporative families and applicable California new vehicle/engine certification Executive Order number(s).

IV. EVALUATING AND TESTING CRITERIA

The criteria for evaluating an exemption application and prescribed testing for a specified category are set forth below. The following is the minimal description of required tests and types of evaluations to be performed for device review. Additional tests and evaluations may be required based on the potential interaction between the device and vehicle/engine operation and design.

(a) Drivability and Performance

If the device(s) degrades the drivability and/or vehicle/engine performance, such as, acceleration, cruise, idle, and/or cold-start conditions, so that a vehicle/engine owner is encouraged to tamper with the device(s) and/or the host vehicle, the Executive Officer will request the manufacturer to demonstrate adequate drivability and/or vehicle/engine performance.

(b) Durability

If the Executive Officer has reason to believe, on the basis of engineering evaluation or other evidence, that:

- (1) The device(s) will affect the durability of any covered vehicle/engine emissions control system(s), or

- (2) The previously approved device(s) had negatively impacted the durability as compared to the part(s) or system(s) replaced by the device resulting in increased emissions or unexpected operation. The manufacturer shall be required to submit data to show that the durability of the vehicle/engine and emission control system(s) are not negatively affected, and/or that the device(s) demonstrate adequate emissions durability.

(c) On-Board Diagnostic Requirements

The manufacturer shall be responsible for ensuring that the device(s) will not affect the performance of the on-board diagnostics system. This includes, but is not limited to, affecting the on-board diagnostics system's ability to detect malfunctions of the monitored emission systems, affecting the on-board diagnostics system's ability to store and erase fault codes, affecting the on-board diagnostics system's ability to illuminate and extinguish the malfunction indicator light, and affecting the vehicle's ability to undergo an inspection and maintenance evaluation (e.g., smog check) for vehicles/engines listed in the application list of affected vehicles/engines.

- (d) Testing/Evaluation Requirements for passenger cars, light-duty trucks, and medium/heavy duty vehicles with a gross vehicle weight rating GVWR \leq 14,000 lbs. (vehicles up to 16,000 GVWR if included in the test group certified can be included). See Sections IV (e) for motorcycles and Section IV (f) for engine dynamometer testing requirements.

(1) Categories II and V - Air Intake Kits or Modifications and Intercooler Kits, Intercooler Components or Modifications

(A) No OEM sensors (excluding temperature sensor) located in stock or modified parts.

1. Required tests: US06 and OBD evaluation.
 - a. For air intakes only, evaporative testing if requested by the Executive Officer.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards
 - c. Composite standard using FTP and SC03 new vehicle certification values

(B) With OEM Sensor(s) located in stock and modified parts.

1. Required tests: FTP, US06, SC03 (vehicles with a composite standard), and OBD. For air intakes only, evaporative testing if requested by the Executive Officer.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(2) Category III - ECM Programmers and/or ECM Signal Modifications

(A) With no end user adjustability

1. Required tests: FTP, US06, SC03 (vehicles with a composite standard), and OBD. If requested by the Executive Officer Highway and Steady State testing.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(3) Category IV - Fuel Tanks and/or Fuel Tank Modifications

(A) No changes made to stock sensors and/or exhaust configuration.

1. Required tests: Evaporative/Refueling and OBD
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With changes made to stock sensors and/or exhaust configuration.

1. Required tests: FTP, US06, SC03, Evaporative/Refueling, and OBD
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(4) Category VI - Supercharger/Turbocharger Kits or Modifications

(A) With no end user adjustability,

1. Required tests: FTP, US06, SC03, and OBD. Highway, Steady State, and/or evaporative testing if requested by the Executive Officer.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(5) Category VII - Pre-Catalyst Exhaust Components

1. Required tests: FTP and OBD.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(6) Category VIII - Other Categorized Parts

1. Required test: OBD (if request by the Executive Officer)
2. Ways to evaluate
 - a. Engineering Evaluation

(7) Category IX - Add-On or Modified Part(s) Not Applicable to Categories II through VIII

1. Testing requirements will be based on the Executive Officer's review of submitted application

(e) Testing/Evaluation Requirements for Motorcycles.

(1) Category III - ECM Programmers and/or ECM Signal Modifications

(A) With no end user adjustability

1. Required tests: FTP and WMTC.
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(2) Category IV - Fuel Tanks and/or Fuel Tank Modifications

1. Required tests: Evaporative
2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(3) Category V - Intercooler Kits, Intercooler Components or Modifications

1. Required test cycles: FTP and WMTC.
2. Ways to evaluate
 - a. Comparable baseline levels

- b. Certification emission standards

(4) Category VI - Supercharger/Turbocharger Kits or Modifications

(A) With no end user adjustability,

- 1. Required test cycles: FTP and WMTC.
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(5) Category VIII - Other Categorized Parts

- 1. Engineering Evaluation

(6) Category IX - Add-On or Modified Part(s) Not Applicable to Categories II through VIII

- 1. Testing requirements will be based on the Executive Officer's review of submitted application

(f) Testing/Evaluation Requirements for Engines (engine dynamometer testing) intended for vehicles with GVWR \geq 14,000 lbs.

(1) Categories II and V - Air Intake Kits or Modifications and Intercooler Kits, Intercooler Components or Modifications

- 1. Required tests: FTP and OBD evaluation. SET and/or NTE testing if requested by the Executive Officer.
 - a. For air intakes only, evaporative testing if requested by the Executive Officer.
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(2) Category III - ECM Programmers and/or ECM Signal Modifications

(A) With no end user adjustability

- 1. Required test cycle: FTP and OBD. SET and/or NTE testing if requested by the Executive Officer.
- 2. Ways to evaluate

- a. Comparable baseline levels
- b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(3) Category IV - Fuel Tanks and/or Fuel Tank Modifications

(A) No changes made to stock sensors and/or exhaust configuration.

- 1. Required tests: Evaporative, as applicable and OBD
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With changes made to stock sensors and/or exhaust configuration.

- 1. Required tests: FTP, Evaporative as applicable, and OBD. SET and/or NTE testing if requested by the Executive Officer.
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(4) Category VI - Supercharger/Turbocharger Kits or Modifications

(A) With no end user adjustability,

- 1. Required test cycles: FTP and OBD. SET and/or NTE testing, if requested by the Executive Officer.
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(B) With user adjustability, same required tests as stated above, and if requested by the Executive Officer, additional testing.

(5) Category VII - Pre-Catalyst Exhaust Components

- 1. Required test cycles: FTP and OBD. SET and/or NTE testing, if requested by the Executive Officer.
- 2. Ways to evaluate
 - a. Comparable baseline levels
 - b. Certification emission standards

(6) Category VIII - Other Categorized Parts

- 1. OBD only (if requested by the Executive Officer)

2. Engineering Evaluation

(7) Category IX - Add-On or Modified Part(s) Not Applicable to Categories II through VIII

1. Testing requirements will be based on the Executive Officer's review of submitted application

For Sections IV (d-f), evaporative (or refueling, if applicable) emission tests will be required when the Executive Officer has determined it to be necessary to fully characterize the overall emissions impact of the device.

V. TEST VEHICLE/ENGINE AND TESTING

The criteria for test vehicle/engine selection, evaluation criteria for emissions testing, additional or alternate testing, on-board diagnostic testing, vehicle/engine break-in requirements, and test laboratory report formatting is shown below.

(a) Vehicle/Engine Selection

Manufacturers shall perform the testing in these procedures as prescribed by the Executive Officer. Manufacturers are allowed to perform testing prior to application submittal, if vehicle(s)/engine(s) tested are determined to not be worst case, (see description below) requested coverage can be affected. If test data is included with the initial application submission, submitted test data must be in a format described in Section V (e). If test data is not included with the initial application submission and testing is required, the Executive Officer will provide the manufacturer with an official test memo, which shall list test vehicle(s)/engine(s) and the testing protocol. Selected test vehicle(s)/engine(s) shall be the worst case configuration as defined in Section V (a)(1) of these procedures. A manufacturer can submit a written request for the Executive Officer to consider an alternative to the selected test vehicle(s)/engine(s). The Executive Officer's acceptance of an alternate could affect vehicle/engine coverage of the submitted application, if the alternative is not representative of the requested coverage.

- (1) The "worst case" test vehicle/engine selection, as determined by the Executive Officer, shall be based on all of the following:
 - (A) Applicable emission standards. The test vehicle/engine is from the test group/engine family certified to the most stringent standards.
 - (B) Highest percentage of the new vehicle/engine certification data to

emission standards.

(C) Vehicle test weight and roadload or engine dynamometer loading which produces the greatest stress on the emission related components as determined by the Executive Officer.

Vehicle(s)/engine(s) within the same test group can be used if tested at determined worst case test parameters.

(D) Extent of modification and applicable effects.

(2) The Executive Officer shall allow test vehicle(s) that are equipped with a California certified engine that was certified to the California heavy-duty engine exhaust emission standards in Title 13 Section 1956.8 and the incorporated test procedures, to use the vehicle certification procedures incorporated in Title 13 Section 1961. The specific evaluation criteria for vehicle(s) tested herein shall be limited to the comparative test criteria of Section V (b)(2).

The equivalent test weight of the test vehicle(s) shall be equal to the vehicle's curb weight plus 3/4 of the difference between the GVWR and the curb weight of the vehicle. The road load horsepower setting, using a 48" single roll chassis dynamometer, shall be based on the frontal area of the test vehicle without modifications, or by other means as determined by the Executive Officer.

(b) Emissions Testing Options

The primary compliance methods a manufacturer must declare during the application submission are: emission standards or comparative emissions testing. An explanation of the two methods are listed below:

(1) Emission Standards

The manufacturer shall demonstrate compliance with these procedures by showing that the emissions from the test vehicle/engine with the device installed are in compliance with the applicable California exhaust emission standards. To demonstrate compliance with the applicable emission standards, measured emissions shall be adjusted by the appropriate deterioration factor(s) and/or adjustment factor(s), as developed by the original vehicle/engine manufacturer for new vehicle/engine certification, for the model and model-year of the test vehicle/engine. An assigned deterioration factor shall be provided by the Executive Officer if original vehicle/engine manufacturer's certification application did not include one. The deteriorated emissions test results shall be considered in compliance with these procedures only if they do not exceed the applicable California new vehicle/engine emission standards for the test vehicle/engine. The

manufacturer shall be permitted only one duplicate emissions test on any unique emissions test cycle. The results, including all applied deterioration and adjustment factors, will be averaged and the averaged values will be used for compliance evaluation purposes. The same type of California certified test fuel used at the time of new vehicle/engine certification shall be used for all tests unless otherwise requested in writing by the manufacturer in the application or installation instructions, and approved by the Executive Officer.

(2) Comparative Emissions Testing (Baseline vs Modified)

The manufacturer has the option to conduct comparative emissions tests to demonstrate compliance with these procedures. A set of emissions tests will be required (one baseline test and one modified test, additional tests will be averaged). A baseline emissions test is a test conducted with the test vehicle/engine in its as-built original equipment manufacturer configuration. A modified emissions test is conducted with the test vehicle/engine in its modified state, i.e., with the installation of the device.

Each test vehicle/engine shall be subjected to a thorough examination prior to the baseline test to detect and correct all possible defects and deviations from the manufacturer's original emission related specifications. The baseline emissions of the test vehicle/engine, when beyond new vehicle/engine certification useful life, must be similar to other vehicles/engines within that particular make, model, mileage, engine displacement, and model-year. The appropriate test parameters for the particular vehicle/engine being tested will be supplied upon request.

If vehicle/engine emissions exceed the levels of other similar vehicles/engines, as mentioned above, during the baseline test, the manufacturer must make a full diagnostic evaluation of the vehicle/engine, make any appropriate repairs, and retest the vehicle/engine. If no other abnormal conditions of the engine or the emission controls are noted, pending approval by the Executive Officer, the vehicle/engine test results shall be accepted. The baseline emissions data, from the approved vehicle/engine, shall be used for comparison against the test results when the device is installed. The manufacturer has the option to forego the above and replace the test vehicle/engine or select another test vehicle/engine with Executive Officer approval. Selection of another test vehicle/engine could affect coverage of the submitted application.

Upon completion of baseline testing, Executive Officer approval is required before any: Servicing, maintenance, or part replacement is made, with the exception of such actions that are in accordance with the written instructions provided with the application or stated in the test memo. The same type of California certified test fuel used at the time of new vehicle/engine certification shall be used for all tests unless otherwise specified in writing by the manufacturer in the application or installation instructions and

approved by the Executive Officer.

Each vehicle/engine selected shall be tested in the baseline configuration first, unless approved by the Executive Officer. All engine settings shall be adjusted to vehicle/engine manufacturer's specifications in the unmodified configuration (baseline) test. After baseline testing, the device shall be installed by the test laboratory in accordance with the manufacturer's written instructions provided with the application. The Executive Officer shall release the vehicle/engine back to the manufacturer for the device installation only if the kit installation is required to be performed by an approved installer of the device. Engine settings shall be recorded and submitted with test results for each test in both the modified and baseline configurations.

The difference between the modified emissions test results and the baseline emissions test results (measured in units as applicable to the test procedures) must not increase above 10 percent for each regulated pollutant. The Executive Officer can also group the component elements to the format of the test vehicle's certification standards (e.g., HC + NOx).

All emissions testing must be completed within a three month period of time and mileage accumulation shall not exceed 750 miles between the baseline and modified emissions tests. At the request of the manufacturer and/or testing laboratory, the Executive Officer will allow more time and/or mileage. The manufacturer shall describe the technical need for an extension.

(3) Additional or Alternate Testing

If the Executive Officer finds that the emissions testing and/or evaluation criteria specified in Sections IV and V (b) is not adequate to characterize the emissions performance or durability of a device, the Executive Officer shall require alternate emissions, functional, and/or bench testing. If the Executive Officer requires such additional or alternate testing of vehicle(s)/engine(s), the Executive Officer shall list those tests in the test memo issued to the manufacturer.

(c) On-Board Diagnostic Testing

Manufacturers of a device will perform demonstrations to determine any impact to the on-board diagnostics system. These demonstrations include, but are not limited to, validating that the on-board diagnostics system sets monitors as designed, validating that the on-board diagnostics system detects malfunctions of the monitored emission systems before exceeding the applicable emission thresholds, and validating that the on-board diagnostics system reports data stream parameters to a scan tool meeting SAE J1978 specification or to a scan tool designed to communicate with an SAE J1939 network. Furthermore, manufacturers shall demonstrate that in-use monitoring performance of the on-board diagnostics system is not affected.

(d) Vehicle/Engine Break-In Requirements

Each test vehicle/engine must be a California certified vehicle/engine with at least: 4,000 miles for a chassis dynamometer based vehicle, 3500 kilometers for a motorcycle, and 125 hours for a heavy-duty engine. In the event that a manufacturer acquires a vehicle/engine with less, mileage/hours can be increased by driving the vehicle on the road or by simulated road loads on a chassis or engine dynamometer. The Executive Officer shall allow test vehicle(s)/engine(s) with less mileage/hours if the manufacturer can demonstrate emissions stability.

(e) Test Laboratory

The manufacturer shall have any required testing performed at an independent laboratory properly equipped to conduct such tests. CARB will provide a laboratory list with each issued test memo. The test vehicle(s)/engine(s) shall be under the control of the laboratory for the entire test period unless the Executive Officer gives permission to release the test vehicle(s)/engine(s) to the manufacturer. Unauthorized return of the test vehicle(s)/engine(s) to the manufacturer during the test period will invalidate test results. At the conclusion of the test program, the independent laboratory must present the Executive Officer a final report in the standardized format, as listed below:

- (1) Executive Summary
 - (A) Project Number (if applicable)
 - (B) Conducted For
 - (C) Report Prepared By
 - (D) Table of Contents
 - (E) Test Results
- (2) Project Overview
- (3) Test Vehicle Information
 - (A) Vehicle Identification Number, Stock Calibration Identification Code and Calibration Verification Number
 - (B) Model-Year / Make / Model
 - (C) Engine Displacement/Configuration/Fuel Type/Aspiration
 - (D) Test Group
 - (E) Evaporative Family
 - (F) Tire Size
 - (G) Body Configuration (e.g., 4 door, Convertible, Long Bed, etc.)
 - (H) Axle Configuration (e.g., front wheel drive, rear wheel drive, all-wheel drive, etc.)
- (4) Test Device Information
 - (A) Device
 - (B) Device Manufacturer

- (C) Part Number
- (D) Device Description
 - 1. Settings or measurements as tested (e.g., performance mode, pulley sizes, pictures, etc.)
 - 2. Calibration Identification Code and Calibration Verification Number if changes are made to any ECM

- (5) Test Sequence and Chronology
 - (A) Test Memo Reference
 - (B) Date
 - 1. All Test(s) or Task(s) performed

- (6) Test Parameters
 - (A) Test Type
 - (B) Test Fuel
 - (C) ETW (lb)
 - (D) Test Coefficients
 - 1. A (ft-lb) track/set
 - 2. B (ft-lb/mph) track/set
 - 3. C (ft-lb/mph²) track/set

- (7) On Board Diagnostic Compatibility
 - (A) Monitors and Diagnostic Trouble Code Status
 - 1. @ Vehicle Check in
 - 2. @ Monitor reset
 - 3. @ After mileage accumulation
 - 4. @ Conclusion of test program

 - (B) Total miles driven to allow all On Board Diagnostic monitors to complete

- (8) Test Results
 - (A) Exhaust Emission Standards (if chosen method of evaluation)
 - 1. Test Cycle
 - (a) Pollutants measured
 - (b) Conversion factors used (e.g., NMOG to NMHC ratio)
 - (c) Test results without deterioration factors
 - (d) Applied deterioration factors (and infrequent regeneration factors, if applicable)
 - (e) Results with deterioration factors
 - (f) Applicable emission standard
 - (g) Pass/Fail Evaluation
 - (h) List of any maintenance and/or repairs performed

 - (B) Comparative Emissions Testing (if chosen method of evaluation)
 - 1. Test Cycle
 - (a) Pollutants measured
 - (b) Baseline measured emissions
 - (c) Modified measured emissions

- (d) Pass/Fail Evaluation
- (e) List of any maintenance and/or repairs performed

(9) Data Review

(A) Appendices

1. Emissions Test Summary Sheets
2. Quality Assurance Packets
 - (a) Vehicle Preconditioning Report
 - (b) Canister Worksheet (purge and fill)
 - (c) Dyno – ABC Derivation
3. Check-In Documents
4. On Board Diagnostic Data in xml format, unless approved in advance by the Executive Officer
5. Vehicle mileage log
 - (a) Date
 - (b) Driver

VI. ADDITIONAL TYPES OF APPLICATION REQUESTS

(a) Engineering Analysis

The Executive Officer shall use good engineering judgment based on, but not limited to, information submitted by the manufacturer which could include emissions data used by the manufacturer on other exempted products, bench test data, functional data, similarity data, on-board diagnostic data, other types of emissions test data, and/or operational data, in making the determination regarding the effect of the device on emissions and the emissions control system.

(b) Part Number(s) and/or Name Change(s)

If a manufacturer has a valid exemption Executive Order and seeks only to add part number(s) and/or a name change(s) to the Executive Order it will be evaluated for the design (excluding exterior appearances, such as color), fit, and function of the additions to those which are currently exempted. A new exemption Executive Order will be issued on the basis of similarity without the need of additional testing. If the changes cannot be represented by the original application and test results, a new application must be submitted.

(c) Model-Year Additions on Carryover Vehicle(s)

If a manufacturer has a valid exemption Executive Order and has requested to add model-year(s) to the same applications, the Executive Officer shall evaluate applicable emission certification standards, worst case vehicle(s)/engine(s) tested, other information used in prior exemption

Executive Order(s), and whether the emissions control system has changed and emissions would be negatively impacted for the requested additional model year(s). The Executive Officer shall grant the request upon determining that the findings leading to the initial exemption Executive Order approval are valid for the added model years. The device(s) must maintain the same design (excluding exterior appearances, such as color), fit, and function as described in prior exemption Executive Order(s). A new exemption Executive Order will be issued without the need of additional testing.

(d) Private Label(s) or Extending Coverage to Subsidiaries

Manufacturers who have requested to extend all or part of their exemption Executive Order(s) to another manufacturer or to its own subsidiaries must request approval for such extensions from the Executive Officer. In reviewing the request, the Executive Officer shall evaluate design control and if the part(s) are identical in design (excluding exterior appearances, such as color), fit and function to those currently exempted, a new Executive Order will be issued to added marketing manufacturer or a new Executive Order will be issued to the manufacturer with the added marketing manufacturer listed in the Executive Order.

VII. ACTION ON APPLICATION

(a) Basis of Evaluation

The Executive Officer shall utilize the manufacturer's test data (if applicable), required submitted information, and any other data, including, if conducted, the California Air Resources Board's confirmatory test data, to determine if the device(s) increases emissions and/or reduces the effectiveness and/or durability of the emissions control system, including on-board diagnostics.

(b) Confirmatory Testing

If requested by the Executive Officer, the California Air Resources Board will conduct confirmatory testing. If such testing is requested, the manufacturer will be notified within 14 days from the time the Executive Officer has received a completed test report by the independent laboratory which is based on an issued test memo. If test data is included with a submitted application, the manufacturer will be notified within 30 days, from the time the Executive Officer has received a completed application. The independent laboratory must bring the test vehicle(s) to the California Air Resources Board's test laboratory. Confirmatory tests will be completed within 45 days of receipt of test vehicle(s), issues with test vehicle(s) can cause a delay in confirmatory testing. The independent laboratory can restore or release the test vehicle(s) after 15 days if the California Air Resources Board has not requested confirmatory testing.

The results of the California Air Resources Board confirmatory tests shall be reported to the manufacturer, after a quality review, within 20 days of completion. The manufacturer and/or authorized representative shall be given the opportunity to observe all confirmatory tests. Confirmatory testing conducted by the California Air Resources Board shall utilize the same testing protocols and procedures, based on an issued test memo, that were required of the device manufacturer during independent laboratory testing. CARB can utilize additional screening tests which are based on CARB's work for assessing performance of modern light-duty and heavy-duty vehicles. The tests will represent real world driving operations to detect defeat devices, and can include on-board diagnostic interrogation and over-the-road testing using portable engine measurement system.

(c) Resolution of Discrepancies

In the event of discrepancies between the California Air Resources Board confirmatory test data and the manufacturer's test data, the Executive Officer's evaluation shall be based solely on the California Air Resources Board test data. The Executive Officer shall inform the manufacturer of any such discrepancies, and shall endeavor to resolve the conflict between the test results. If the conflict cannot be resolved, the Executive Officer shall inform the manufacturer that there are still discrepancies and that the California Air Resources Board test data will be used as a basis to evaluate the device.

VIII. LABELING REQUIREMENTS

The device manufacturer shall provide a product information label, minimum of 12 point font, and complete instructions for its installation in an under hood location, readily visible to the average person, with each device sold. The product information label shall contain only the following: one unique product name as listed on the exemption Executive Order, the California Air Resources Board Executive Order number using the format "CARB D-XXX," and the manufacturer's name. The label installation instructions shall contain a warning to the consumer in bold lettering that the product information label is required to aid in passing the California Smog Check program. The product information label and wording shall be designed for a minimum under-hood service life of fifteen years. If requested by the Executive Officer, a manufacturer must provide documentation to support compliance with the fifteen year durability requirements.

When the installation of the device requires re-routing of any vacuum hose(s), belt(s) and/or changes to the vehicle/engine manufacturer's tune-up specifications, the product information label shall also provide a complete description of the required changes. A consumer information label must be provided when changes are to be made to the vehicle/engine manufacturer's recommended fuel specifications. Instructions must be provided on placement

near the fuel fill cap. The device manufacturer shall submit a physical facsimile or prototype of the product/consumer information label, if requested by the Executive Officer.

IX. ISSUING AN EXEMPTION EXECUTIVE ORDER

The Executive Officer shall evaluate the test data, on-board diagnostic data (if applicable), and/or any other pertinent information concerning the device(s). If the Executive Officer determines that a device will not reduce the effectiveness of the emissions control system, will not result in emissions that exceed the applicable model-year emission standards or comparative baseline levels for each vehicle/engine specified in the vehicle/engine list, and that it meets all the requirements set forth in Sections IV through VI of these procedures, the Executive Officer shall issue an Executive Order exempting the device(s) from the prohibitions of Vehicle Code Section 27156. As a condition of the exemption, the modified vehicle must be capable of completing and passing the Smog Check test that applies. The manufacturer shall not: Use the Executive Order as an endorsement or approval by the California Air Resources Board, market the device(s) using any identification other than that shown on the Executive Order, market the device(s) for an application other than those listed on the Executive Order, offer for sale, or advertise any component of an applicable kit as an individual device, and/or advertise as “reduces emissions”.

Violation of any of the above conditions shall be grounds for revocation of the granted Executive Order. The Executive Order can be revoked only after a 10 day written notice of intention to revoke the order, during which period the holder of the order must request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within 10 days of receipt of the request and the order will not be revoked until a determination is made after the hearing that grounds for revocation exist.

The California Air Resources Board reserves the right in the future to review the exemption Executive Order to assure that the exempted device(s) continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

X. AUDIT TESTING

The California Air Resources Board reserves the right to perform audit testing. The Executive Officer has the option to select up to five new aftermarket parts and/or kits per manufacturer each year for audit testing. Audit testing conducted by the California Air Resources Board shall utilize, at a minimum, the same testing protocols and procedures required of the manufacturer during the exemption process. The California Air Resources Board will use any or all

emission test cycles that the vehicle/engine was originally certified to in order to demonstrate emissions compliance with the device(s) installed. The California Air Resources Board has the option to use additional test cycles outside of the emission test cycles that the vehicle/engine was originally certified to in order to demonstrate the device(s) do not have any adverse impacts on emissions throughout any or all of the vehicle/engine operating range. The Executive Officer has the option to rescind a previously granted exemption for patterns of failure.

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