

## Recommended Application Format for Certification of Highway Motorcycles

To expedite review of your application for certification, the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB) strongly recommend that you adopt the standardized application format presented in this Guidance. While other formats may be acceptable, they may result in longer EPA/CARB review time.

The recommended application format is based on the requirements specified in 40 CFR §86 Subpart E (amended on January 15, 2004 and are subject to change through future regulatory amendments) and *corresponding CARB's Standards and Test Procedures (CaSTP)*. *In this guidance, citations to 40 CFR §1051 shall also mean references to the corresponding CaSTP for the same requirements unless noted otherwise.*

*Please note that EPA and CARB regulations differ in certain requirements. For vehicles intended for sale in California, manufacturers must obtain separate certification from CARB. For these vehicles, the term "EPA/CARB" as used throughout this guidance document shall mean that any applicable certification requirements and agency action must be **separately but concurrently** addressed to and ruled on by EPA and CARB.*

**March 9, 2005**

Certification and Compliance Division  
Office of Transportation and Air Quality  
U.S. EPA

California Air Resources Board

## Recommended Application Format

### Part A. Common Information

### Part B. Individual Engine Family Application

1. Request for Certification
2. Correspondence and Communications
3. Certification Summary Information (CSI)
4. 40 CFR §86.416-80 Application Requirements
5. Averaging and Banking Requirements, if any.
6. Additional California Requirements (reserved)

**Part A. Common Information** (to be submitted with your **first** application for a new model year and must be updated when changes occur before and after certification)

You may submit certain information which is common to more than one engine family (EF) in Part A, rather than in Part B for an individual EF's application. If you do so, you may reference the information rather than submit it within Part B application. We have made suggestions, in each section of Part B below, of information that can usually be submitted as common information.

**Part B. Individual Engine Family Application** (to be submitted for **each** engine family for a new model year and must be updated when changes occur before and after certification)

### 1. Request for Certification

EPA will issue a certificate to a U.S. manufacturer or the authorized U.S. importer/distributor for non-U.S. manufacturers. The request for an EPA certificate and/or CARB Executive Order (EO) should contain the following information:

- Certificate holder's company name, address and contact information (must have "service of process" in the U.S.)
- Address and location of facility where the motorcycles will be produced
- Manufacturer's legal name
- Name of the engine family that you intend to apply for a certificate/EO
- All applicable vehicle categories (see Part B.4(a)) within the EF.
- Statements that the EF complies with all applicable EPA/CARB regulations
- Primary certification contact for questions: name, title, phone and email addresses.
- Signature of an authorized company representative.

#### Advice for Submittal:

- Organize the above information as a cover letter. *Note: CARB requires an original signed cover letter to be submitted in paper format.*
- Identify your company's primary certification contact by "For questions call..."

- In general, you should plan for at least 30 days for EPA/CARB to review and issue a certificate/EO from the time a complete application is submitted. However, if you have a special need for an expedited review, please indicate in the letter.

## 2. Correspondence and Communications

### Information to be Included:

- Names, titles, phone numbers, fax numbers, e-mail addresses and areas of responsibility of all persons authorized to be in contact with EPA/CARB compliance staff. **At least one U.S. contact must be provided.**
- Dedicated Email address (one per company) for EPA to send certificates and any other official documents.
- U.S. mail address where EPA may mail official document if email is not appropriate path.
- U.S. mail address where CARB will mail official documents, if different from above.

### Advice for Submittal:

- Supply complete list of contacts in Part A.
- Create a dedicated email address to receive your certificate. We strongly recommend that you use the format [certificate@\[company\].com](mailto:certificate@[company].com) for your company to receive certificates and any other official documents.

## 3. Certification Summary Information (CSI)

The Certification Summary Information (CSI) (See Guidance 2, Attachment 1: CSI) is the printout summary of data that you entered into the EPA/CARB database for this engine family prior to preparing this application (A separate guidance regarding submitting data into EPA/CARB database will be provided when the database is ready). The CSI is comprised of the following sections:

- 1: General Information
- 2: EPA/CARB Emission Standards and Certification Levels
- 3: Engine Family Description
- 4: Exhaust Emission Control Information
- 5: Exhaust Emission Data Vehicle and Test Data
- 6: Permeation Emissions Control and Test Data
7. Models Covered

Including the CSI in the application not only reduces submission of redundant information that is required in other sections of Part B but also provides manufacturer another chance to review the data entered into EPA/CARB database.

## 4. 40 CFR §86.416-78 (a) Application Requirements

### (A) Engine Family (EF) Description (Ref: 40 CFR §86.420-78)

Describe the engine family's specifications and other basic parameters of the vehicle design. List the type of fuel you intend to use to certify the engine family. List vehicle configurations and model names that are included in the engine family.

Information to be included:

- Engine family name
- All applicable EPA/CARB vehicle categories within the EF:
  - HMC** (highway motorcycle);
  - ENG** (engine-only certification, see 40 CFR §86.448-2006 (not applicable for CARB))
- Any new technology applied
- Fuel type(s) (operating fuel(s)): gasoline, liquefied petroleum gas (LPG), methanol, or natural gas (NG), etc.
- The EF's specifications:
  - engine type, combustion cycle, displacement(s), rated power and torque, the number and arrangement of cylinders, appropriate bore diameter, and other basic vehicle parameters
  - engine cooling medium (air, liquid, oil, etc)
  - fuel system configuration, use SAE J1930 abbreviations:
    - CARB - Carburetion
    - TBI - throttle body fuel injection
    - MFI – multi-port fuel injection
    - SFI - sequential MFI
    - DGI - direct gasoline injection
    - AIR - secondary air injection
    - PAIR - pulsed AIR, etc.
  - method of air aspiration (natural, turbocharged, supercharged, etc.)
  - Models covered (commercial model names, not manufacturer's model code names)

Advice for Submittal:

- Reference the appropriate sections on CSI for information required above.
- Fully describe the engine/emission-related components, evaporative and permeation components, and vehicle parameters for each model covered by the certificate.
- Outline the differences between California and federal models.
- *Alternatively, manufacturers may choose to provide two tables, one for the models for CARB certification and the other for EPA certification.*

**(B) Emission Data Vehicle/Engine (EDV) Description (Ref: 40 CFR §86.421-78)**

Describe the vehicles or engines you selected for testing to satisfy the certification requirements and the reasons for selecting them.

Information to be Included:

- Manufacturer's explanation for EDV selection (including justifications that the selected EDV meets the selection requirements under both EPA/CARB regulations, e.g. justify why a federal vehicle model selected for EDV for the EF meets CARB requirements; or,

vice versa, why a California vehicle model selected for EDV for the EF meets EPA requirements)

- Data type (new, carryover, or carry across)
- EDV ID (Vehicle Identification Number (VIN) or manufacturer's ID)
- EDV configuration
- EDV model name
- EDV displacement
- Engine calibration
- EDV transmission type
- EDV N/V
- EDV curb mass
- EIM
- Road Load (nt)
- Test number
- Test fuel
- Exhaust emission control systems
- Maintenance performed

Advice for Submittal:

- You may place a complete breakdown of your EDV information for a model year in Part A and refer the page number of Part A in this section.
- You may reference the appropriate CSI sections for test vehicle/engine information requested above.

**(C) Vehicle Emission Control Information Label (Ref: 40 CFR §86.413-78)**

The emission control information label and its location shall be included in the application.

Information to be Included:

As specified in 40 CFR §86.413-78 and 86.416-80.

Advice for Submittal:

- Discuss with EPA/CARB in advance if you propose any changes other than specified in 40 CFR §86.413-78.
- Present a photocopy of the actual VECI label in the **same size** as the actual label, or an actual label.
- You may reference a complete set of photocopies of the labels for a model year in Part A.

**(D) Emission Control Systems and Auxiliary Emission Control Devices (AECD) (Ref: 40 CFR §86.409-78)**

Explain how the emission-control systems operate:

- Describe in detail all the system components for controlling exhaust emissions, including auxiliary emission-control devices and all fuel-system components you will install on any production or test vehicle or engine. Explain why any auxiliary

emission-control devices are not defeat devices (see 40 CFR §86.409-78). Do not include detailed calibrations for components unless we request them.

- Describe the permeation emission controls. This will not be reviewed by CARB.
- Describe in detail all the system components for controlling evaporative emissions, including auxiliary evaporative emission-control devices you will install on any production or test vehicle or engine. (For CARB only.)

### **For Exhaust Emission Control:**

#### Information to be Included:

- The detailed description of your catalytic converters (type, number, location, arrangement (i.e., parallel or series)\*, volume, compositions, etc)
- The number, location, arrangement (i.e., parallel or series)\* and type of the sensors, if any
- Brief description of fuel-system
- Brief description of Exhaust Gas Recirculation (EGR) as applicable
- Brief description of air injection system as applicable
- Brief description of any other exhaust emission control system
- Part numbers of emission related component (part numbers as stamped on the component, not the stock or inventory numbers)

\* Use prefix “2” and suffix “(2)” to designate parallel and series arrangements, respectively (e.g., 2OC means two oxidizing catalytic converters in a parallel arrangement; O2S(2) means two oxygen sensors in a series arrangement, one before and one after the catalytic converter).

#### Advice for Submittal:

- You may reference the appropriate sections in the CSI for some information required above.
- You may organize the emission related parts data in a table format.
- You may use schematics to illustrate control devices or strategies, if applicable.
- You may place any general descriptions or schematics in Part A.
- If you consider any of the catalyst information (volume, composition or ratio of the precious metals, etc.) to be confidential, create a code, such as “catalyst A” in a public file (name it [“FOI”\_”EF Name”\_”APP\_INI”\_”Date and Time”.pdf]) of the application and describe the catalyst associated with the code in the confidential copy (with name [“CBI”\_”EF Name”\_”APP\_INI”\_”Date and Time”.pdf]). Both files must be submitted to EPA/CARB.

### **Auxiliary Emission Control Devices (AECD):**

#### Information to be Included:

List all AECDs installed on any applicable vehicles including the sensed and controlled parameters. A detailed justification for each AECD which results in a reduction in effectiveness of the emission control system and rationale why the AECD is not a defeat device as defined under 40 CFR §86.409-78 & §86.416-80.

Advice for Submittal:

- You may make a table, such as below, to list all AECDs, sensors, sensed and controlled parameters and justifications involved in the engine family:

AECD	Sensed Parameter	Sensor	Controlled Parameters				Justification/ Rationale
			Volt High	Volt Low			

You may reference a complete breakdown list of AECD tables for a model year in the common information section rather than re-describe them with each engine family.

If you consider any of the AECD information to be confidential, create a code in the public copy of the application and describe the confidential information associated with the code in the confidential copy. As mentioned above, both copies must be submitted to EPA/CARB.

**(E) Adjustable Operating Parameters and Other Adjustments (Ref: 40 CFR §86.416-80)**

Describe all adjustable operating parameters and other adjustments.

Information to be Included (Ref: 40 CFR §86.416-80 and §86.409-78):

- The nominal or recommended setting.
- The intended physically adjustable range, including production tolerances if they affect the range.
- The limits or stops used to establish adjustable ranges.

Advice for Submittal:

Organize the above required information by a table, such as below, when appropriate:

Adjustable Parameters	Nominal Setting	Adjustable Range	Tamper Resistance Method	Approval Reference

You may reference a complete breakdown of adjustable operating parameters for a model year in the Part A - Common Information and place reference # number here.

**(F) Projected U.S./California Sales (Ref: 40 CFR §86.416-80(a)(2)(iii))**

Include estimates of U.S. and California-directed production volumes

Information to be Included:

A list of projected U.S. and California sales for each model of the engine family.

**(G) Test Equipment, Fuel, and Engine Lubricant (Ref: 40 CFR §86.416-80(a)(2)(iv))**

Provide a description of any proposed test equipment, fuel and engine lubricant to be used for testing.

Describe any special or alternate test procedures and/or special test equipment you used. List the specifications of the test fuels to show that they fall within the required ranges.

**Please note advanced EPA/CARB approvals are required before taking action.**

Information to be Included:

- Provide the name and address of the test facility used to perform exhaust testing.
- Description of all EPA/CARB-approved special or alternate test procedures, special test equipment, durability procedures or driving schedules you used for exhaust, permeation, and evaporative (whole vehicle) emission tests.
- Lists of the test fuel specifications for both exhaust, permeation, and evaporative (whole vehicle) emissions.

Advice for Submittal:

Include a copy of EPA's and CARB's approvals in the application when a special or alternate test procedure and/or special test equipment is used; or,

- Reference the EPA's and/or CARB's approval numbers here, if any.
- List the test fuel specifications for exhaust, permeation, and evaporative (whole vehicle) emissions side-by-side with the required range as specified in the applicable regulations.

**(H) Proposed Service Accumulation Procedure (Ref: 40 CFR §86.426-78)**

Provide a description of the proposed service accumulation procedure and a description of the proposed scheduled maintenance. Describe how you operated the test prior to testing, including the duty cycle and the minimum testing distance to stabilize the emission levels, number of tests conducted and any scheduled maintenance you performed.

Information to be Included:

If you are not using the Durability Driving Schedule specified in appendix IV of part 86 for service accumulation, you must provide a description of the alternative procedure you plan to use and receive approval in advance by EPA/CARB before you can use it.

Manufacturer's maintenance instructions.

- Deterioration Factor (DF) data type (new, carryover, or [carry-across](#))



- Description of the durability procedure: mileage accumulation procedure, minimum and total testing distance/hours, number of tests conducted, emission levels from each test and any scheduled maintenance performed.

Advice for Submittal:

- Provide the durability procedure descriptions in Part A and place a reference in this section.
- Reference appropriate Section(s) on CSI for deterioration factors and test results.
- If new durability data is not provided, explain the reason and identify the source of data.
- Provide durability data and information in a table format.

**(I) Statement of Recommended Periodic and Anticipated Maintenance and Procedures (Ref: 40 CFR §86.426-78)**

Provide a statement of recommended periodic and anticipated maintenance and procedures necessary to assure that the vehicles covered by a certificate conform to the regulations.

Information to be Included:

- Listings of the fuels and lubricants to be recommended to the ultimate purchaser.
- A description of the program for training of personnel for such maintenance.
- A description of the equipment required to perform the maintenance.
- Critical emission-related maintenance
- Recommend additional maintenance
- Special maintenance
- Non-critical emission-related maintenance
- Maintenance that is not emission-related
- Emission related part number summary form and sources for parts and repairs

Advice for Submittal:

- Make a table to list all parts that are emission related, with sources for parts and repairs.
- Provide us with the Owner's Manual for the new vehicles/engines when available. Submit the final ones in hardcopy.

**(J) Normal Assembly Line Operation and Adjustments**

Provide a description of normal assembly line operation and adjustments if such procedures exceed 100 km (62 miles) or three hours of engine operation.

**(K) Evaporative/Permeation Emission Controls (Ref: 40 CFR §1051.245)**

Provide a description of the evaporative emission controls and applicable test data. (Not required by EPA until MY2008)

Information to be Included:

- Permeation family or group name, if any.
- Evaporative family and group name, if any.
- Fuel tank(s): material, wall thickness, total inside surface area and treatment approach/control technology.
- Fuel lines: material, wall thickness, total inside surface area and control technology.
- Detailed description of any other means or strategies used to prevent permeation emissions.
- Description of crankcase emission control.
- Description of any modifications made to EPA standardized procedure, if any.
- Test data.
- Description of evaporative canister, including vacuum hose routing diagram.

Advice for Submittal:

- You may reference the appropriate CSI sections for the information required above.
- Use schematics to illustrate crankcase, tanks or hoses emissions controls as applicable, and place any common descriptions or schematics in Part A.
- For permeation emission control devices that are used in multiple engine families, you may reference a complete list of breakdown of your permeation emission control devices or strategies in Part A, rather than re-describe them within each application for an individual engine family.
- Provide the durability procedure descriptions in Part A. Then provide a reference in this section.
- Reference the CSI.B6 for all deterioration factors.
- If new durability data is not provided, explain the reason and identify the source of data.

## **5. Averaging and Banking Requirements (40 CFR §86.449), if Required**

You need to provide information requested in this section only if you chose to take corporate emissions averaging, and/or banking options to certify to a manufacturer specified engine Family Emission Limit (FEL) based on 40 CFR §86.449, or CARB designated standards.

*CARB regulations allow averaging, but not banking or trading. The use of banked or purchased credits is not allowed in a CARB averaging compliance plan. CARB sales, not 50-state sales, must be used in the CARB averaging compliance plan. A separate CARB compliance plan is required.*

Information to be included:

- A statement of your belief that your corporate average emission levels will comply with the applicable standards.
- Detailed calculations of average emission levels and credits balance based on projected production.

Advice for Submittal and record keeping:

- You may reference your statement and a complete breakdown of AB plan for a model year in the Part A for common information and place reference # number here.
- Projected sales may be considered confidential. If you wish confidential treatment of these projected sales, submit an additional CBI copy of your application with the sales figures, and place a reference to the CBI in the public copy.
- You are required to maintain organized paper records containing at least the following for **three years** from the due date for the end-of-model year report:
  - Model years and EFs involved.
  - Family Emission Limits (FEL)/CARB designated standards.
  - Useful life for individual EFs.
  - Projected U.S.-directed production volume for the model year.
  - Projected California-directed production volume for the model year.
  - Actual U.S.-directed production volume for the model year.
  - *Actual California-directed production volume for the model year.*
  - *You are required to submit detailed calculations of the average emission levels and credits balance based on actual production within 120 days of the end of your model year.*

**Additional California Information** (Reserved)

Attachments:

Certification Summary Information (data printout form)