



**CALIFORNIA**  
AIR RESOURCES BOARD

**Small Off-Road Engine Evaporative Emission Control System  
Certification Procedure**

**CP-901**

**Certification Procedure for Evaporative Emission Control Systems on  
Engines With Displacement Less Than or Equal to 80 Cubic  
Centimeters**

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**CP-901  
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**California Environmental Protection Agency  
Air Resources Board**

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A set of definitions common to all Certification and Test Procedures is in title 13, California Code of Regulations, section 2752 et seq.

For the purpose of this procedure, the term "ARB" refers to the California Air Resources Board, and the term "Executive Officer" refers to the ARB Executive Officer, or his or her authorized representative or designate.

**1. GENERAL INFORMATION AND APPLICABILITY**

This document contains the procedure for evaluating and certifying evaporative emission control systems used on small off-road engines with displacements less than or equal to 80 cc. This Certification Procedure, CP-901, is proposed pursuant to Section 43824 of the California Health and Safety Code (CH&SC). Small off-road engines are defined in title 13, Cal. Code Regs., section 2401 et seq.

**1.1 Requirement to Comply with Applicable Codes and Regulations**

Certification of an evaporative emission control system by the Executive Officer does not exempt the evaporative emission control system from compliance with other applicable codes and regulations such as state and federal safety codes and regulations.

**2. PERMEATION EMISSION STANDARDS**

The fuel tank and fuel line permeation emission standards for small off-road engines with displacement less than or equal to 80 cc are specified in title 13, Cal. Code Regs., section 2755.

**3. OPTIONAL EVAPORATIVE EMISSION STANDARD**

Optional evaporative emission standards are emission targets that are more stringent than the normal emission standards. Manufacturers that certify evaporative emission control systems or fuel tanks to these optional standards are allowed to affix a unique label to their equipment, which identifies it as low

polluting. Title 13, Cal. Code Regs., section 2757 identifies the optional emission standard.

#### **4. CERTIFICATION OVERVIEW**

Evaporative emission control systems on engines with displacements of less than or equal to 80 cc must be certified by the California Air Resources Board (ARB) to be legal for sale and use in California. Executive Orders certifying evaporative emission control systems to the permeation emission standards are valid for only one model year of production. New Executive Orders in each subsequent model year must be obtained from ARB to be legal for sale and use in California. Selling evaporative systems or their components in California before receiving an ARB certification will subject the manufacturer and the selling dealers to ARB enforcement actions as authorized by state laws.

Applicants that certify evaporative emission control systems under this procedure are required to submit test data that document compliance with the permeation emission standards. An applicant must submit permeation test data for every family for which certification is requested. The fuel tank selected for testing must be of a configuration and material composition such that it is expected to yield the highest permeation rate relative to the applicable permeation emission standard within an evaporative family. The test procedure used to determine compliance with the fuel tank permeation emission standard is TP-901.

#### **5. CERTIFICATION**

##### **5.1 Certification Process**

For each evaporative family, the applicant must select and test five samples of a fuel tank to show compliance with the permeation emission standard. The fuel tank selected must use the same method of permeation control and be constructed of the same material as specified in the certification application. In addition, the fuel tank shall be selected such that the fuel tank is expected to exhibit the highest permeation rate relative to the applicable permeation emission standard of all the fuel tanks within the applicable evaporative family. The ARB may direct the manufacturer to conduct a retest if the original test results indicate marginal (within 5% of the standard) compliance. Fuel lines that meet the requirements of section 2754(b)(2) must also be used in all evaporative families.

##### **5.2 Certification Responsibilities**

Under this procedure, an applicant is required to obtain ARB certification for evaporative emission control systems and is held liable for complying with all of ARB's certification and emission warranty requirements.

### 5.3 Certification Testing

Fuel tank testing shall be conducted according to TP-901 and the results submitted to ARB as part of the certification application. Fuel lines shall be tested according to SAE J1737 (Stabilized May 2013), SAE J30, SAE J1527, or, only for fuel lines with inner diameter 4.75 mm or less, SAE J2996, and the results submitted to ARB as part of the certification application. If, after review of the application for certification including all test data submitted by the applicant and any other pertinent data or information the Executive Officer determines is necessary, the Executive Officer determines that the application has satisfied the conditions set forth in this procedure, the Executive Officer may approve the application and issue an Executive Order.

### 5.4 Data Carryover

Subject to ARB approval, the certification permeation emissions data for an evaporative family may be carried over, in lieu of new tests, to subsequent model years, provided there have been no changes to the fuel tank or fuel lines that could affect the overall permeation emissions. Permeation emissions data for one evaporative family may not be used to certify another evaporative family.

## 6. GENERAL INSTRUCTIONS – CERTIFICATION

These instructions provide guidance regarding the preparation, submission, and revision of small off-road engine evaporative emission control system certification applications. Only information essential for certification is required in this format. Other information required by the test procedures (e.g., test equipment build records, test and maintenance records, etc.) must be maintained by the applicant and made available to the ARB within **30 days** upon request. An application submitted in accordance with these instructions will enable an expedited review by the ARB. This section covers the following subject matter:

- Where To Submit Applications for Certification
- Letter of Intent
- Certification Label
- Test Procedures
- Modified Test Procedures
- Certification Test Fuel
- Amendments to the Application
- Running Changes and Field Fixes
- Confidentiality
- Summary of Certification Process
- Submission of an engine or equipment unit

## 6.1 Where to Submit Applications For Certification

Unless otherwise specified by the Executive Officer, all certification applications and correspondence should be forwarded to:

Emissions Compliance, Automotive Regulations and Science Division  
Air Resources Board  
9480 Telstar Avenue, Suite 4  
El Monte, California 91731-2988  
Attn: Division Chief

## 6.2 Letter of Intent

An applicant shall submit a Letter of Intent (LOI) prior to the initial model year submission of the applicant's certification application(s) indicating the applicant's intent to seek evaporative emission control system certification. Such LOI shall list the evaporative families for which the applicant will apply for certification and the date of expected submission for each application. An applicant's LOI for evaporative emission control systems may be combined with that required in *California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off Road Engines; Engine-Testing Procedures (Part 1054)*, adopted October 25, 2012.

## 6.3 Certification Label

A certification label meeting the requirements of title 13, Cal. Code Regs., section 2759 shall be included in an application for certification.

## 6.4 Test Procedures

The test procedure used to determine compliance with the fuel tank permeation emission standard, including equipment provisions, is TP-901. The test procedure used to determine compliance with the fuel line permeation emission standard is SAE J1737 (Stabilized May 2013), SAE J30, SAE J1527, or, only for fuel lines with inner diameter 4.75 mm or less, SAE J2996.

## 6.5 Modified Test Procedures

Any modifications to the prescribed test equipment and/or test procedure due to unique fuel tank designs, laboratory equipment arrangements, facility limitations, etc. must be approved in advance by the Executive Officer and described in the certification application. Alternative test procedure approval shall be granted on a case-by-case basis, only after all necessary comparison testing has been conducted. The applicant shall demonstrate equivalency between the reference test procedure and the proposed alternative test

procedure according to the procedure in “Method 301 – Field Validation of Pollutant Measurement Methods from Various Waste Media,” which is in Appendix A to 40 CFR Part 63 and is incorporated by reference herein. The use of unapproved test equipment or procedures may result in rejection of generated test data by the Executive Officer.

#### 6.6 Certification Test Fuel

Certification test fuel as specified in TP-901 shall be used to determine compliance with the fuel tank permeation emission standard.

#### 6.7 Amendments to the Application

Any revisions to an application due to typographical errors, corrections, running changes or field fixes, new test data, or additional information must be submitted to ARB. If the revisions affect the permeation emissions of the fuel tank, the entire application shall be resubmitted to ARB. For other revisions, only the revised information on the affected application pages must be submitted, together with the following for identification purposes:

- Applicant or Holder Name
- Model Year
- Evaporative Family
- Process Code (e.g., correction, running change)
- Engine Displacement
- Comments Field (describing the update or change)
- The fields that have been changed or corrected.

#### 6.8 Running Changes and Field Fixes

Any factory change to a fuel tank during the model-year production that could potentially affect the permeation emissions must be approved by ARB via a running change request in a revised certification application. In addition, any post assembly line change to an equipment fuel tank (e.g., at factory warehouses, distribution centers, dealers) must be approved by ARB via a field fix request in a revised certification application. A field fix request typically occurs after the model-year production has ended. Running changes and field fixes not approved by ARB will invalidate the certification of any affected evaporative family and subject the Holder to ARB enforcement actions. If the change affects the permeation emissions or results in a new fuel tank in the evaporative family exhibiting the highest permeation rate relative to the applicable permeation emission standard, new test data shall be submitted in a revised certification application to demonstrate that the evaporative family will remain in compliance.

## 6.9 Confidentiality

Any information that is designated by an applicant as confidential shall be handled in accordance with the procedures specified in title 17, Cal. Code Regs., sections 91000-91022.

## 6.10 Summary of Certification Process

The applicant shall prepare a summary of the certification process for each certified evaporative family. It shall contain documentation of the successful completion of all applicable portions of the requirements contained in this Certification Procedure including but not limited to the following:

- All problems encountered throughout the certification process,
- The types of testing performed, and
- The frequency and/or duration of any testing, as appropriate.

Any other pertinent information about the evaluation process shall be contained in the summary.

## 6.11 Submission of an engine or equipment unit

Upon the request of the Executive Officer, an applicant shall submit for inspection or testing an engine or equipment unit from an evaporative family with the certification application, when available.

# 7. APPLICATION FORMAT INSTRUCTIONS

An application for certification shall contain the following information:

- Application type (e.g., new, running change)
- Model year
- Full corporate name of the applicant
- U.S. EPA-assigned manufacturer code
- Exhaust/Evaporative family name
- Applicant contact information
  - Name
  - Title
  - Company name
  - Address
  - Phone number
  - Fax number
  - Email address
- Production plant contact information
  - Name
  - Title



- Company name
- Address
- Phone number
- Fax number
- Email address
- Projected model year production volume in California
- Projected model year production volume in U.S.
- Proof the applicant has met the bond requirements of title 13, Cal. Code Regs., section 2774
- Date of expected introduction into California commerce
- All results from all emissions-related tests performed on the units tested for certification, including test results from invalid tests or from any other tests, whether or not they were conducted according to TP-901 or SAE J1737 (Stabilized May 2013), SAE J30, SAE J1527, or SAE J2996. The Executive Officer may require an applicant to send other information to confirm that testing according to TP-901 or SAE J1737 (Stabilized May 2013), SAE J30, SAE J1527, or SAE J2996, as applicable, was valid.
- Description of any special test equipment
- List of equipment types in the evaporative family
- List of engine and equipment models in the evaporative family
- Fuel tank description for each fuel tank in the evaporative family
  - Model number
  - Total capacity (L)
  - Nominal capacity (L)
  - Internal surface area (m<sup>2</sup>)
  - Executive Order number, if applicable, or the following:
    - Tank materials, including pigments, plasticizers, UV inhibitors, or other additives that are expected to affect control of emissions
    - Gasket material
    - Production method
    - Permeation barrier
    - Engineering drawings (may be simplified)
- Description of each fuel line model in the evaporative family
  - Model number
  - Internal diameter (mm)
  - Length (mm)
  - Executive Order number, if applicable, or the following:
    - Materials and methods used to construct the line
    - Permeation barrier
    - Engineering drawings (may be simplified)
- Emission label or approval number
- Emission warranty statement or approval number
- List of evaporative emission warranty parts
- Description of changes to emission label or emission warranty
- Description of evaporative emission control system, including a diagram
- Description of criteria (e.g., seam length, barrier and wall thickness, ratio of

- internal surface area to volume, presence of high-permeation materials, presence of accessories) used to determine which fuel tanks in the evaporative family exhibit the highest permeation emission rates relative to the applicable permeation emission standards
- Description of any Quality Assurance/Quality Control (QA/QC) protocols used by the applicant to ensure production fuel tanks and fuel lines in the evaporative family comply with the applicable emission standards throughout their useful life

## **8. DOCUMENTATION OF CERTIFICATION**

Documentation of certification shall be in the form of an Executive Order.

The certification Executive Order shall include, at a minimum, the following items.

- A list of equipment types in the evaporative family
- A list of approved engine and equipment models in the evaporative family.
- Applicable permeation emission standards and test procedures.
- Applicable operating parameters and limitations.
- Fuel tank nominal capacity and internal surface area
- Fuel tank material (resin and additives)
- Fuel tank treatment type
- Fuel line internal diameter and length
- Fuel line material and permeation barrier
- Highest tested final permeation rate ( $\text{g ROG}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$ ) of the fuel tank samples tested for certification, as calculated in section 14 of TP-901
- Highest tested permeation rate ( $\text{g ROG}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$ ) of the fuel line samples tested for certification, as calculated in SAE J1737 (Stabilized May 2013), SAE J30, SAE J1527, or SAE J2996, as applicable
- Fuel tank and fuel line Executive Order numbers, if applicable
- Unique properties
- Warranty period(s).
- Factory testing requirements, if applicable.