

California Environmental Protection Agency



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

CP--901

**Certification And Approval Procedure for Small Off-Road Evaporative
Emission Control Systems on Engines With Displacement Less Than
or Equal to 80 Cubic Centimeters Fuel Tanks**

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Amended: September 18, 2017

(Note: Set forth are the amendments to the existing regulatory language. The amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions from the existing regulatory text.)

**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 are in Title 13, California Code of Regulations (CCR), 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 procedures for evaluating and certifying fuel tank evaporative emission control systems used on equipment that use 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, California Code of Regulations (CCR) Cal. Code Regs., Section 2401 et seq.

1.1 Requirement to Comply with Applicable Codes and Regulations

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

2. PERFORMANCE PERMEATION EMISSION STANDARDS AND SPECIFICATIONS

2.1 Performance Standards

A performance standard defines the minimum performance requirements for an equipment fuel tank. Compliance with the performance standard must be demonstrated in order to obtain certification under these Certification Procedures. Title 13, CCR, Section 2755 identifies the performance standard and the affected model year. 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 PERFORMANCE EVAPORATIVE EMISSION STANDARDS**

Optional ~~performance~~ evaporative emission standards are emission targets that are more stringent than the normal ~~performance~~ emission standards. Manufacturers that certify ~~equipment~~ 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, ~~CCR~~ Cal. Code Regs., ~~§~~ section 2757 identifies the optional ~~performance~~ emission standards.

4. **CERTIFICATION OVERVIEW**

~~Fuel tanks of equipment that use spark ignited (SI) small off-road~~ 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 ~~equipment fuel tank~~ evaporative emission control systems to the ~~maximum allowable~~ permeation emissions ~~performance~~ 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 ~~equipment~~ 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.

~~Manufacturers'~~ Applicants that certify ~~equipment fuel tank~~ evaporative emission control systems under ~~these~~ this procedures are required to submit test data that documents compliance with the ~~maximum allowable~~ permeation emissions ~~performance~~ standards. An ~~manufacturer~~ 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 ~~emissions~~ rate relative to the applicable permeation emission standard within an ~~engine~~ evaporative family. The test procedures used to determine compliance with ~~the fuel tank~~ maximum allowable permeation emissions ~~performance~~ standard are ~~described in~~ is TP-901, "Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks".

5. **CERTIFICATION**

5.1 Certification Process

~~5.1.1 Emission-Compliant Fuel Tanks:~~ For each ~~engine~~ evaporative family, the ~~equipment manufacturer~~ applicant must select and test five samples of an equipment fuel tank to show compliance with the ~~maximum allowable~~ permeation emissions ~~performance~~ standard. The ~~equipment~~ 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 equipment-fuel tank shall be selected such that the fuel tank is expected to exhibit ~~worst-case emissions, (e.g., the~~ highest permeation emissions) rate relative to the applicable permeation emission standard of all the fuel tanks within the applicable engine/evaporative family. ~~A manufacturer may test its fuel tank with the most surface area for all evaporative families with the same material/process in all tank/exhaust families. These results may be used for all tanks in all other tank/exhaust families made of the same material/process. 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.~~

~~5.1.2 Application for Certification: As part of the exhaust emission certification application set forth in “California Exhaust Emission Standards and Test Procedures for 1995–2004 Small Off-Road Engines,” adopted March 20, 1992, and last amended September 25, 2003, the manufacturer must submit to ARB information and permeation test data in the ARB-specified format. To expedite the certification approval, requests for ARB approval of anti-tampering devices, labels, the emission warranty statement, and any modification to the test procedure should be submitted in advance of the application.~~

5.2 Certification Responsibilities

~~Under these~~ this procedures, ~~equipment manufacturers are an~~ applicant is required to obtain ARB certification for ~~small off-road engine equipment fuel tanks that are required to adhere to the maximum allowable permeation emissions performance standard/evaporative emission control systems and are~~ is held liable for complying with all of ARB’s certification and emission warranty requirements.

5.3 Certification Testing

~~Prior to the time of production, the fuel tank selected for testing is durability tested and preconditioned as specified in TP-901 to stabilize the permeation emissions. An emission test is then conducted using~~ 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 ~~manufacturer~~ 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 ~~these~~this procedures, the Executive Officer may approve the application and issue an Executive Order.

5.4 ~~Data Carryover and Carryacross~~

~~Subject to ARB approval, the certification permeation emissions data for an evaporative family may be carried over, in lieu of new tests, to similar fuel tanks in other engine families in followingsubsequent model years, provided there have been no changes to the equipment-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. Similar fuel tanks must be manufactured using the same manufacturing process, be of a volume no greater than the certified tank, and use identical materials and additives. Also, subject to ARB approval, the permeation emissions data may be carried across, in lieu of new tests, to a different engine family in the same model year if similar tanks as defined above are used.~~

6. ~~GENERAL INSTRUCTIONS – FUEL TANK CERTIFICATION~~

These instructions provide guidance regarding the preparation, submission, and revision of small off-road engine ~~fuel tank~~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 ~~manufacturer~~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. ~~Manufacturers must submit all revisions to the application to the ARB for approval.~~ This section covers the following subject matter:

- Where To Submit Applications for Certification
- Letter of Intent (~~LOI~~)
- ~~Cover Letter~~
- Equipment Certification Labeling
- Test Procedures
- Modified Test Procedures
- Certification Test Fuels
- 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-related applications and correspondence should be forwarded to:

Mobile Source Operations 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 (LOI)

As part of the exhaust emission certification application set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” adopted March 20, 1992, and last amended September 25, 2003, a manufacturer shall include information regarding the application for certification for the model year. This additional information should list planned engine families and the projected dates when the applications will be submitted. The manufacturer’s phase-in compliance plan for the Model Year should also be included. Any certification or testing issues that could delay the certification process of any fuel tank may be included in the exhaust emission certification application. Any updates to the manufacturer’s certification plan should be submitted in a timely manner. Manufacturers can combine the exhaust and evaporative Letter of Intent together. 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 Cover Letter

As part of the exhaust emission certification application set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” adopted March 20, 1992, and last amended September 25, 2003, a cover letter, signed by the manufacturer’s authorized representative, must accompany each application. The cover letter should recap highlights about the equipment fuel tank and the engine family, such as its new or carry-over test data status, the use of a new emission control technology, the use of a modified test procedure, or the anticipated start date of production.

6.46.3 Equipment Certification Labeling

The permeation emissions certification label is an important ARB requirement for identifying certified and legal equipment from those uncertified. The labels are used to assist enforcement activities. The permeation emissions certification label may be integrated with the exhaust emission label and must include an unconditional statement of conformance with the maximum allowable permeation standard and uniquely identify the manufacturer and the engine displacement.

Manufacturers are required to submit samples of the permeation emissions certification labels (or drawings) for each evaporative family to ARB for review and approval of the format, content and placement location. The ARB retains the right to request actual labels on a case by case basis. Labels must be readily legible and visible on the engine per Title 13 CCR Article 1, Section 2404. The proposed location(s) must be shown by either a drawing or photograph. Detailed written explanations of the label locations are also acceptable. Label samples and proposed label locations may be submitted to ARB for approval in advance of the actual certification application to prevent any certification delay.

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

6.56.4 Test Procedures

The test procedures used to determine compliance with the Performance Standards fuel tank permeation emission standard, including equipment provisions and emission test procedures, are specified in TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks, adopted September 25, 2003. 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.

6.66.5 Modified Test Procedures

Any modifications to the prescribed test equipment and/or test procedure due to unique equipment-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.

6.76.6 Certification Test Fuel

~~The fuel for emission testing must meet the specifications in the test procedure to reduce emission variations. Testing with unauthorized fuel will result in rejection of the test results. The allowable test fuel specified in TP-901 is Phase II California Reformulated Certification (CERT) or Indolene Clear. The specifications of this certification gasoline are provided in “California Exhaust Emission Standards and Test Procedures For 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles”, (Reference #3, Part II, Section 100.3.1).~~ Certification test fuel as specified in TP-901 shall be used to determine compliance with the fuel tank permeation emission standard.

6.86.7 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 ~~changes~~ revisions affect the ~~Certification Summary~~ permeation emissions of the fuel tank, the entire application shall be resubmitted to ARB. For ~~the other parts of the application~~ revisions, only the revised information on the affected application pages must be submitted, together with the following for identification purposes:

- ~~Manufacturer~~ Applicant or Holder Name
- Model Year
- ~~Engine~~ 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.

6.96.8 Running Changes and Field-Fixes

Any factory change to an ~~equipment~~ fuel tank during the model-year production that could potentially affect the permeation emissions must be approved by ARB via a ~~manufacturer’s submitted~~ 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 ~~manufacturer’s submitted~~ 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 ~~render any affected engine family~~

~~uncertified~~ invalidate the certification of any affected evaporative family and subject the ~~manufacturer~~ Holder to ARB enforcement actions. If the change affects the permeation emissions or results in a new ~~worst-case emissions equipment~~ fuel tank in the evaporative family exhibiting the highest permeation rate relative to the applicable permeation emission standard, new test data ~~will be required~~ shall be submitted in a revised certification application to demonstrate that the ~~engine~~ evaporative family will remain in compliance and a new certification application must be submitted. ~~If the change does not affect the permeation emissions or result in a new worst-case engine family fuel tank, only the affected pages and information fields of the certification application need to be submitted.~~

6.106.9 Confidentiality

Any information that is designated by the ~~manufacturer~~ an applicant as confidential shall be handled in accordance with the procedures specified in title 17, Cal. Code Regs., sections 91000-91022. ~~may not receive automatic treatment for confidentiality unless the manufacturer can justify that the information is truly privileged, confidential business information. California guidelines (Sections 91000-91002, Title 17, California Code of Regulations, and Health and Safety Code Section 39660(e)) will be followed in the handling of confidential information.~~

6.116.10 Summary of Certification Process

The applicant shall prepare a summary of the certification process for each certified ~~engine~~ evaporative family fuel tank. 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

For information regarding the format of the certification application please see the

exhaust emission certification application set forth in “California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines,” adopted March 20, 1992, and last amended September 25, 2003. 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 (m²)

- 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 engines/ and equipment model(s) under the engine in the evaporative family.
- Applicable Performance/permeation emission Standards and Test Procedures.
- Applicable Operating Parameters and Limitations.
- Fuel Tank Volumetric 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 (g ROG·m⁻²·day⁻¹) of the fuel tank samples tested for certification, as calculated in section 14 of TP-901
- Highest tested permeation rate (g ROG·m⁻²·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 Pproperties
- Warranty period(s).
- Factory testing requirements, if applicable.

9. ~~CONDITIONS OF CERTIFICATION~~

~~Equipment fuel tank certifications shall specify the duration and conditions by which the certification is issued and include a list of all engine or equipment models covered by the certification.~~

9.1 ~~Duration of System Certification~~

~~Equipment fuel tanks shall be certified for a period of one model-year.~~

9.2 ~~Performance Monitoring~~

~~During the certification period, any deficiencies identified through complaint investigations, certification or compliance tests, etc., shall be noted in the performance section of the certification file and brought to the attention of the equipment manufacturer. If the deficiencies result in emissions in excess of the applicable standard, the manufacturer may be subject to remedial actions that are accepted and approved by ARB.~~

10. ~~APPROVAL OF APPLICATION FOR CERTIFICATION~~

~~The Executive Officer shall certify only those equipment fuel tanks that can be expected to comply with the performance standard.~~

~~After a review of the complete application for certification and any other information that the Executive Officer requires, the Executive Officer will approve the application for certification if all the foregoing conditions are satisfied.~~

REFERENCES

1. Title 13, California Code of Regulations, (13 CCR) Sections 2400,2401, and 2752.
2. California Exhaust Emission Standards and Test Procedures For 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, California Environmental Protection Agency, Air Resources Board, El Monte CA, 2000.
3. California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines, California Environmental Protection Agency, Air Resources Board, El Monte CA, 2003.
4. Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks, TP-901, California Environmental Protection Agency, Air Resources Board, Sacramento, CA, 2002.