



Conformity of Production (COP) Evaporation Test

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. Uniform Conformity of Production (COP) test procedure for checking the Evaporation (EVAP) system in order to fulfill the European Union (EU) type approval.

1.2 Applicability. This Test Procedure applies to all GM vehicles with gasoline engines sold in regions which EU guidelines are governing emission requirements. The leakage and ventilation test will vary between the positions of the Carbon Canister (CC). In all cases, only one (1) test procedure is used.

1.3 Remarks. According to the respective applicable version of 70/220/EEC, the vehicle manufacturer is under obligation to ensure COP by means of effective checks and test procedures.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

70/220/EEC

2.2 GM Standards/Specifications.

None

3 Resources

3.1 Facilities. The test facilities and equipment shall be functional and shall have a valid calibration label.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.1.3 Exhaust gas dynamometer roller.

3.2 Equipment.

3.2.1 Pressure source.

3.2.2 Pressure gauge with a measuring range of 0 hPa to 150 hPa.

3.2.3 Time registration device.

3.2.4 Device for registering the purge volume per test.

3.3 Test Vehicle/Test Piece. Vehicles from current production.

3.4 Test Time.

Calendar time: 2 d

Test time: 8 h

Coordination time: 4 h

GM Confidential

© Copyright 2018 General Motors Company All Rights Reserved

June 2018

Page 1 of 5

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Trained technician or engineer is required to perform the instructions outlined in section 4.

4 Procedure

4.1 Preparation. The fuel tank of the vehicle shall be drained for the leakage and ventilation tests. Fuel filling of 5% maximum is permitted.

4.2 Conditions.

4.2.1 Environmental Conditions. The measurements shall be performed in a temperature range of 20 °C to 30 °C.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 Leakage Test.

4.3.1.1 CC Position in Engine Compartment. The entire fuel system and the tank ventilation, including CC, shall be checked in the fuel system leakage test.

4.3.1.1.1 The tank ventilation line shall be sealed at the atmospheric ventilation.

4.3.1.1.2 Using a tank cap prepared for these tests, the pressure of a 370 mm ± 10 mm (36.28 hPa ± 0.98 hPa) water column shall be applied to the fuel system by means of a pressure source (air).

4.3.1.1.3 A suitable pressure gauge shall be connected to the tank cap for pressure measurements in the fuel tank.

4.3.1.1.4 Once the specified pressure has stabilized, the pressure source shall be removed from the fuel system. The pressure may drop by a water column of ≤ 50 mm (≤ 4.9 hPa) within 5 minutes.

4.3.1.2 CC Position in A-Pillar behind Fender Liner. The entire fuel system and the tank ventilation without CC shall be checked in the fuel system leakage test.

4.3.1.2.1 The tank ventilation line is detached at an easily accessible quick connection point between the tank and the CC and sealed up to the tank.

4.3.1.2.2 Using a tank cap prepared for these tests, the pressure of a 370 mm ± 10 mm (36.28 hPa ± 0.98 hPa) water column shall be applied to the fuel system by means of a pressure source (air).

4.3.1.2.3 A suitable pressure gauge shall be connected to the tank cap for pressure measurements in the fuel tank.

4.3.1.2.4 Once the specified pressure has stabilized, the pressure source shall be removed from the fuel system. The pressure may drop by a water column of ≤ 50 mm (≤ 4.9 hPa) within 5 minutes.

4.3.2 Testing of Ventilation.

4.3.2.1 CC Position in Engine Compartment. The measurement shall be performed including CC for the fuel system ventilation test.

4.3.2.1.1 The tank ventilation line shall be sealed at the atmospheric ventilation.

4.3.2.1.2 The pressure of a 1019.7 mm ± 27.5 mm (100 hPa ± 2.7 hPa) water column shall be applied to the fuel system via pressure source as described in 4.3.1.1.

4.3.2.1.3 Once the specified pressure has stabilized, the pressure source shall be removed from the fuel system and the atmospheric ventilation opened. The pressure shall drop to the value of a 713.8 mm (70 hPa) water column within ≤ 150 s.

4.3.2.2 CC Position in A-Pillar behind Fender Liner. The measurement shall be performed without CC for the fuel system ventilation test.

4.3.2.2.1 The tank ventilation line is detached at an easily accessible quick connection point between the tank and the CC and sealed up to the tank.

4.3.2.2.2 The pressure of a 1019.7 mm ± 27.5 mm (100 hPa ± 2.7 hPa) water column shall be applied to the fuel system via the pressure source, as described in 4.3.1.2.

GM Confidential

© Copyright 2018 General Motors Company All Rights Reserved

June 2018

Page 2 of 5