**Section 276.504 Evaporative System Integrity Test Functional Requirements and Performance Criteria**

a) Requirements

Both fuel cap leak flow testers and fuel cap pressure decay testers used for evaporative system integrity testing shall be:

1) Easily connected to fuel caps, including those tethered to the vehicle;

2) Compatible with at least 95 percent of all vehicles required to receive a fuel cap test;

3) Adaptable as required to test future model year vehicles as they enter the eligible fleet;

4) Capable of performing the following additional functions:

A) Provide reliable, continuous service;

B) Provide for the automatic selection of the proper fuel cap test equipment (if applicable) for each vehicle tested;

C) Provide for an automatic pass/fail determination for each vehicle tested;

5) Unaffected by atmospheric variation (i.e., barometric pressure, humidity, temperature, etc.). Test accuracy shall be within 2 percent of stated values from 0ºF to 120ºF;

6) Pressurized using air, Nitrogen (N2), or an equivalent non-toxic, non-greenhouse, inert gas;

7) Capable of controlling the supply pressure and preventing over pressurization;

8) Tamper resistant; and

9) Designed to avoid damage to the vehicle during installation, testing and removal.

b) Fuel cap pressure decay tester

The fuel cap pressure decay tester used for evaporative system integrity testing shall be equipped with a pressure gauge with a minimum range of 0 to 50 inches of water and an accuracy of 0.3 inches of water or 2 percent of point, whichever is greater.

c) Fuel cap leak flow tester

The fuel cap leak flow tester used for evaporative system integrity testing shall be:

1) Equipped with a serviceable air filter upstream of the flow comparison circuitry;

2) Equipped with an automatic shutoff and a low-battery indicator if battery powered;

3) Supplied with a NIST traceable reference passing fuel cap of nominal 52 to 56 cc/min for daily test verification;

4) Supplied with a NIST traceable reference failing fuel cap of nominal 64 to 68 cc/min for daily test verification;

5) Accurate to 3 cc/min at the 60 min flow standard; and

6) Able to be modified, either by the manufacturer or an authorized service center, to test at a revised leakage (flow) rate from that originally shipped.

(Source: Amended at 35 Ill. Reg. 11268, effective June 28, 2011)