

THC analyzer system integrator, mark the recorder chart, start particulate sample pump No. 1, and record both gas meter or flow measurement instrument readings, if applicable), turn the key on, and start cranking the engine.

(10) Fifteen seconds after the engine starts, place the transmission in gear.

(11) Twenty seconds after the engine starts, begin the initial vehicle acceleration of the driving schedule.

(12) Operate the vehicle according to the Urban Dynamometer Driving Schedule (§ 86.115).

NOTE: During particulate testing, adjust the flow rate through the particulate sample probe to maintain a constant value within ± 5 percent of the set flow rate. Record the average temperature and pressure at the gas meter or flow instrument inlet. If the set flow rate cannot be maintained because of high particulate loading on the filter, the test shall be terminated. The test shall be rerun using a lower flow rate, or larger diameter filter, or both.

(13) At the end of the deceleration which is scheduled to occur at 505 seconds, simultaneously switch the sample flows from the "transient" bags and samples to the "stabilized" bags and samples, switch off gas flow measuring device No. 1, switch off the No. 1 petroleum-fueled diesel hydrocarbon integrator and the No. 1 particulate sample pump, mark the petroleum-fueled diesel hydrocarbon recorder chart, and close valves isolating particulate filter No. 1, if applicable, start gas flow measuring device No. 2, and start the petroleum-fueled diesel hydrocarbon integrator No. 2 and the No. 2 particulate sample pump and open valves isolating particulate filter No. 2, if applicable. Before the acceleration which is scheduled to occur at 510 seconds, record the measured roll or shaft revolutions and reset the counter or switch to a second counter. As soon as possible transfer the "transient" exhaust and dilution air samples to the analytical system and process the samples according to § 86.140 obtaining a stabilized reading of the bag exhaust sample on all analyzers within 20 minutes of the end of the sample collection phase of the test. Obtain methanol and formaldehyde sample analyses, if applicable, within 24 hours of the end of the sample collection phase of the test.

(14) Turn the engine off 2 seconds after the end of the last deceleration (at 1,369 seconds).

(15) Five seconds after the engine stops running, simultaneously turn off gas flow measuring device No. 2 and if applicable, turn off the hydrocarbon integrator No. 2, mark the hydrocarbon recorder chart, turn off the No. 2 particulate sample pump and close the valves isolating particulate filter No. 2, and position the sample selector valves to the "standby" position (and open the valves isolating particulate filter No. 1, if applicable). Record the measured roll or shaft revolutions (both gas meter or flow measurement instrumentation readings), and reset the counter. As soon as possible, transfer the "stabilized" exhaust and dilution air samples to the analytical system and process the samples according to § 86.140, obtaining a stabilized reading of the exhaust bag sample on all analyzers within 20 minutes of the end of the sample collection phase of the test. Obtain methanol and formaldehyde sample analyses, if applicable, within 24 hours of the end of the sample period. (If it is not possible to perform analysis on the methanol and formaldehyde samples within 24 hours, the samples should be stored in a dark cold (4-10 °C) environment until analysis. The samples should be analyzed within fourteen days.) If applicable, carefully remove both pairs of particulate sample filters from their respective holders, and place each in a separate petri dish, and cover.

(b)(16)-(b)(24) [Reserved]. For guidance see § 86.137-90.

[56 FR 25776, June 5, 1991, as amended at 60 FR 34347, June 30, 1995]

§ 86.137-96 Dynamometer test run, gaseous and particulate emissions.

Section 86.137-96 includes text that specifies requirements that differ from those specified in §§ 86.137-90 and 86.137-94. Where a paragraph in § 86.137-90 or § 86.137-94 is identical and applicable to § 86.137-96, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For guidance see § 86.137-90." or "[Reserved]. For guidance see § 86.137-94."

(a)-(b)(15) [Reserved]. For guidance see § 86.137-94.

(b)(16)-(b)(23) [Reserved]. For guidance see §86.137-90.

(b)(24) Vehicles to be tested for evaporative emissions will proceed according to §86.134; vehicles to be tested with the supplemental two-diurnal test sequence for evaporative emissions will proceed according to §86.138-96(k). For all others this completes the test sequence.

[58 FR 16042, Mar. 24, 1993]

§ 86.138-90 Hot-soak test.

The hot-soak evaporative emission test shall be conducted immediately following the hot transient exhaust emission test.

(a) Prior to the completion of the hot-start transient exhaust emission sampling period, the evaporative emission enclosure shall be purged for several minutes.

(b) The enclosure doors shall be closed and sealed within two minutes of engine shutdown and within seven minutes after the end of the exhaust emission test. The steps after the end of the driving cycle should be done as quickly as possible to minimize the time needed to start the hot soak test.

(c) Fresh impingers shall be installed in the methanol sample collection system immediately prior to the start of the test, if applicable.

(d) If not already on, the evaporative enclosure mixing fan shall be turned on at this time.

(e) Upon completion of the hot transient exhaust emission sampling period, the vehicle engine compartment cover shall be closed, the cooling fan shall be moved, the vehicle shall be disconnected from the dynamometer and exhaust sampling system, and then driven at minimum throttle to the vehicle entrance of the enclosure.

(f) The vehicle's engine must be stopped before any part of the vehicle enters the enclosure. The vehicle may be pushed or coasted into the enclosure.

(g) The test vehicle windows and luggage compartments shall be opened, if not already open.

(h) The temperature recording system shall be started and the time of engine shut off shall be noted on the evaporative emission hydrocarbon recording system.

(i) The enclosure doors shall be closed and sealed within two minutes of engine shutdown and within five minutes after the end of the exhaust emission test.

(j) The 60 ± 0.5 minute hot soak begins when the enclosure doors are sealed. The enclosure atmosphere shall be analyzed for hydrocarbon and recorded. This is initial (time = 0 minutes) hydrocarbon concentration, C_{HCr} , for use in calculating evaporative losses, see §86.143. The "zero" time methanol sample shall be collected starting at the same time as the hydrocarbon analysis is started. Sampling should continue for four minutes.

(k) The test vehicle shall be permitted to soak for a period of one hour in the enclosure.

(l) The FID (or HFID) hydrocarbon analyzer shall be zeroed and spanned immediately prior to the end of the test.

(m) Fresh impingers shall be installed in the methanol collection system immediately prior to the end of the test, if applicable.

(n) At the end of the 60 ± 0.5 minute test period, again analyze the enclosure atmosphere for hydrocarbons and methanol, as described in §86.138-90(j), and record time. These analyses provide the final (time = 60 minutes) hydrocarbon concentration, C_{HCr} , and the final methanol level for use in calculating evaporative losses, see §86.143. This operation completes the evaporative emission measurement procedure.

(o) *Alternate method for methanol sampling.* Since sample times of longer than four minutes may be necessary in order to collect an adequate and representative sample of methanol at the end of a test (when SHED concentrations are usually increasing rapidly), it may be necessary to rapidly collect the methanol sample in a bag and then bubble the bag sample through the impingers at the specified flow rate. The time elapsed between collection of the bag sample and flowing through the impingers should be minimized in order to prevent any losses. This alternative must be adopted if the four minute sample period is inadequate to