

CALIFORNIA EVAPORATIVE EMISSIONS STANDARDS
AND TEST PROCEDURES
FOR 2008 AND LATER
OFF-HIGHWAY RECREATIONAL VEHICLES AND ENGINES

Subpart A, Determining How to Follow This Part

Sec. 1051.5 Which engines are excluded or exempted from this part's requirements?

You may exclude vehicles with compression-ignition engines.

Subpart B, Emission Standards and Related Requirements

1051.110 What evaporative emission standards must my vehicles meet?

(a) Beginning with the 2008 model year, permeation emissions from your vehicle's fuel tank(s) may not exceed 1.5 grams per square-meter per day when measured with the test procedures for tank permeation in subpart F of this part of these test procedures. You may generate or use emission credits under the averaging, banking, and trading (ABT) program, as described in Subpart H, Part 1051, Title 40, Code of Federal Regulations, provided the credits and debits are from vehicles produced for sale in California.

1051.145 What provisions apply only for a limited time?

(a) Pull-ahead option for permeation emissions. Manufacturers choosing to comply with an early tank permeation standard of 3.0 g/m²/day prior to model year 2008 may be allowed to delay compliance with the 1.5 g/m²/day standard by earning credits, as follows:

(1) Calculate earned credits using the following equation:

$$Credit = (Baseline\ emissions - Pull\ ahead\ level) \times \left[\sum_i (Production)_i \times (UL)_i \right]$$

Where:

Baseline emissions = the baseline emission rate, as determined in paragraph (a)(2) of this section.

Pull-ahead level = the permeation level to which you certify the tank, which must be at or below 3.0 g/m²/day.

(Production)_i = the annual production volume of vehicles in the engine family for model year "i" times the average internal surface area of the vehicles' fuel tanks.

(UL)_i = The useful life of the engine family in model year "i."

(2) Determine the baseline emission level for calculating credits using any of the following values:

(i) 7.6 g/m²/day.

(ii) The emission rate measured from your lowest-emitting, uncontrolled fuel tank from the current or previous model year using the procedures in Sec. 1051.515. For example, this would generally involve the fuel tank with the greatest wall thickness for a given material.

(iii) The emission rate measured from an uncontrolled fuel tank that is the same as or most similar to the model you have used during the current or previous model year. However, you may use this approach only if you use it to establish a baseline emission level for each unique tank model you produce using the procedures in Sec. 1051.515.

(3) Pull-ahead tanks under this option must be certified and must meet all applicable requirements other than those limited to compliance with the exhaust standards.

(4) You may use credits generated under this paragraph (g) as specified in subpart H of this part.

(h) Deficit credits for permeation standards. For 2008 through 2010 model years, you may have a negative balance of emission credits relative to the permeation emission standards at the end of each model year, subject to the following provisions:

(1) You must eliminate any credit deficit we allow under this paragraph (h) by the end of the 2011 model year. If you are unable to eliminate your credit deficit by the end of the 2011 model year, we may void the certificates for all families certified to FELs above the allowable average, for all affected model years.

(2) State in your application for certification a statement whether you will have a negative balance of permeation emission credits for that model year. If you project that you will have a negative balance, estimate the credit deficit for each affected model year and present a detailed plan to show where and when you will get credits to offset the deficit by the end of the 2011 model year.

(3) In your end-of-year report under Sec. 1051.730, state whether your credit deficit is larger or smaller than you projected in your application for certification. If the deficit is larger than projected, include in your end-of-year report an update to your detailed plan to show how you will eliminate the credit deficit by the end of the 2011 model year.

Subpart C, Certifying Engine Families

1051.245 How do I demonstrate that my engine family complies with evaporative emission standards?

(a) For purposes of certification, your engine family is considered in compliance with the evaporative emission standards in subpart B of this part if you do either of the following:

(1) You have test results showing permeation emission levels from the fuel tanks and fuel lines in the family are at or below the evaporative standards in section 1051.110 of these test procedures and section 2412(b), Title 13, CCR, throughout the useful life.

(2) You comply with the design specifications in paragraph (e) of this section.

(b) Your engine family is deemed not to comply if any fuel tank or fuel line representing that family has test results showing a deteriorated emission level above the standard.

(c) To compare emission levels with the emission standards, apply deterioration factors to the measured emission levels. For permeation emissions, use the following procedures to establish an additive deterioration factor. An additive deterioration factor for a pollutant is the difference between emissions at the end of the useful life and emissions at the low-hour test point. In these cases, adjust the official emission results for each tested vehicle or engine at the selected test point by adding the factor to the measured emissions. If the factor is less than zero, use zero. Additive deterioration factors must be specified to one more decimal place than the applicable standard:

(1) Section 1051.515 of these test procedures specifies how to test your fuel tanks to develop deterioration factors. Small-volume manufacturers may use assigned deterioration factors that we establish. Apply the deterioration factors as follows:

(i) Calculate the deterioration factor from emission tests performed before and after the durability tests as described in sections 1051.515(c) and (d) of these test procedures, using good engineering judgment. The durability tests described in section 1051.515(d) of these test procedures represent the minimum requirements for determining a deterioration factor. You may not use a deterioration factor that is less than the difference between evaporative emissions before and after the durability tests as described in sections 1051.515(c) and (d) of these test procedures.

(ii) Do not apply the deterioration factor to test results for tanks that have already undergone these durability tests.

(2) Determine the deterioration factor for fuel lines using good engineering judgment.

(d) Collect emission data using measurements to one more decimal place than the applicable standard. Apply the deterioration factor to the official emission result, as described in paragraph (c) of this section, then round the adjusted figure to the same number of decimal places as the emission standard. Compare the rounded emission levels to the emission standard for each emission-data vehicle.

(e)(1) For certification to the evaporative standards specified in section 1051.110(a) of these test procedures and section 2412(b), Title 13, CCR, with the control technologies shown in the following table:

| If the tank permeability control technology is... | Then you may design-certify with a tank emission level of... |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| (i) A metal fuel tank with no non-metal gaskets or with gaskets made from a low-permeability material ¹ . | 1.5 g/m ² /day |
| (ii) A metal fuel tank with non-metal gaskets with an exposed surface area of 1000 mm ² or less. | 1.5 g/m ² /day |

¹ Permeability of 10 g/m²/day or less according to ASTM D814-95 (incorporated by reference in section 1051.810).

(e)(2) For certification to the standards specified in section 1051.110(b) of these test procedures and section 2412(b), Title 13, CCR, with the control technologies shown in the following table:

| If the fuel-line permeability control technology is... | Then you may design-certify with a fuel-line emission level of... |
|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| (i) Hose meeting Category 1 permeation specifications in SAE J2260 (incorporated by reference in section 1051.810). | 15 g/m ² /day |
| (ii) Hose meeting the R11-A or R12 permeation specifications in SAE J30 (incorporated by reference in section 1051.810). | 15 g/m ² /day |

Subpart F, Test Procedures

1051.501 What procedures must I use to test my vehicles or engines?

(a) *Permeation testing.*

(1) Use the equipment and procedures specified in section 1051.515 of these test procedures to measure fuel tank permeation emissions.

(2) Prior to permeation testing of fuel hose, the hose must be preconditioned by filling the hose with the fuel specified in paragraph (b)(3) of this section, sealing the openings, and soaking the hose for 4 weeks at 23 ± 5 °C. To measure fuel-line permeation emissions, use the equipment and procedures specified in SAE J30 (incorporated by reference in section 1051.810 of these test procedures). The measurements must be performed at 23 ± 2 °C using the fuel specified in paragraph (b)(3) of this section.

(b) *Fuels.* Use the fuels meeting the following specifications:

(1) *Fuel Tank Permeation.*

(i) For the preconditioning soak described in section 1051.515(a)(1) of these test procedures and fuel slosh durability test described in section 1051.515(d)(3) of these test procedures, use the fuel specified in Table 1 of section 1065.710, Title 40, Code of Federal Regulations, blended with 10 percent ethanol by volume. As an alternative, you may use Fuel CE10, which is Fuel C as specified in ASTM D 471–98 (incorporated by reference in section 1051.810 of these test procedures) blended with 10 percent ethanol by volume.

(ii) For the permeation measurement test in section 1051.515(b) of these test procedures, use the fuel specified in Table 1 of section 1065.710, Title 40, Code of Federal Regulations. As an alternative, you may use the fuel specified in paragraph (d)(2)(i) of this section.

(2) *Fuel Hose Permeation.* Use the fuel specified in Table 1 of section 1065.710, Title 40, Code of Federal Regulations, blended with 10 percent ethanol by volume for permeation testing of fuel lines. As an alternative, you may use Fuel CE10, which is Fuel C as specified in ASTM D 471–98 (incorporated by reference in section 1051.810 of these test procedures) blended with 10 percent ethanol by volume.

(c) *Special procedures for vehicle testing.*

(1) You may use special or alternate procedures, as described in paragraph (f)(3) of this section.

(2) We may reject data you generate using alternate procedures if later testing with the otherwise specified procedures shows contradictory emission data.

(3)(i) The test procedures specified for vehicle testing are intended to produce emission measurements equivalent to those that would result from measuring emissions during in-use operation using the same vehicle configuration. If good engineering judgment indicates that use of the procedures in this part for a vehicle would result in measurements that are not representative of in-use operation of that vehicle, you must notify us. If we determine that using these procedures would result in measurements that are significantly unrepresentative and that changes to the procedures will result in more representative measurements that do not decrease the stringency of emission standards or other requirements, we will specify changes to the procedures. In your notification to us, you should recommend specific changes you think are necessary.

(ii) You may ask to use emission data collected using other test procedures, such as those of the California Air Resources Board or the International Organization for Standardization. We will allow this only if you show us that these data are equivalent to data collected using our test procedures.

(iii) You may ask to use alternate procedures that produce measurements equivalent to those obtained using the specified procedures. In this case, send us a written request showing that your alternate procedures are equivalent to the test procedures of this part. If you prove to us that the procedures are equivalent, we will allow you to use them. You may not use alternate procedures until we approve them.

(iv) You may ask to use special test procedures if your vehicle cannot be tested using the specified test procedures (for example, it is incapable of operating on the specified transient cycle). In this case, send us a written request showing that you cannot satisfactorily test your engines using the test procedures of this part. We will allow you to use special test procedures if we determine that they would produce emission measurements that are representative of those that would result from measuring emissions during in-use operation. You may not use special procedures until we approve them.

1051.515 How do I test my fuel tank for permeation emissions?

Measure permeation emissions by weighing a sealed fuel tank before and after a temperature-controlled soak.

(a) *Preconditioning fuel soak.* To precondition your fuel tank, follow these five steps:

(1) Fill the tank with the fuel specified in section 1051.501(b)(2)(i) of these test procedures, seal it, and allow it to soak at 28 ± 5 °C for 20 weeks. Alternatively, the tank may be soaked for a shorter period of time at a higher temperature if you can show that the hydrocarbon permeation rate has stabilized.

(2) Determine the fuel tank's internal surface area in square-meters accurate to at least three significant figures. You may use less accurate estimates of the surface area if you make sure not to overestimate the surface area.

(3) Fill the fuel tank with the test fuel specified in section 1051.501(b)(2)(ii) of these test procedures to its nominal capacity. If you fill the tank inside the temperature-controlled room or enclosure, do not spill any fuel.

(4) Allow the tank and its contents to equilibrate to 28 ± 2 °C.

(5) Seal the fuel tank using nonpermeable fittings, such as metal or Teflon™.

(b) *Permeation test run.* To run the test, follow these nine steps for a tank that was preconditioned as specified in paragraph (a) of this section:

(1) Weigh the sealed fuel tank and record the weight to the nearest 0.1 grams. (You may use less precise weights as long as the difference in mass from the start of the test to the end of the test has at least three significant figures.)

(2) Carefully place the tank within a ventilated temperature-controlled room or enclosure. Do not spill any fuel.

(3) Close the room or enclosure and record the time.

(4) Ensure that the measured temperature in the room or enclosure is 28 ± 2 °C.

(5) Leave the tank in the room or enclosure for 2 to 4 weeks, consistent with good engineering judgment (based on the permeation rate). Do not stop soaking before 4 weeks unless you know that you can measure the weight loss during the test to at least three significant figures earlier.

(6) Hold the temperature of the room or enclosure to 28 ± 2 °C; measure and record the temperature at least daily.

(7) At the end of the soak period, weigh the sealed fuel tank and record the weight to the nearest 0.1 grams. You may use less precise weights as long as the difference in mass from the start of the test to the end of the test has at least three significant figures. Unless the same fuel is used in the preconditioning fuel soak and the permeation test run, record weight measurements on five separate days per week of testing. The test is void if a linear plot of tank weight vs. test days for the full soak period for permeation testing specified in paragraph (b)(5) of this section yields a coefficient of determination (r^2) below 0.8. The coefficient of determination (r^2) is calculated per the following equation:

$$r_y^2 = 1 - \frac{\sum_{i=1}^N [y_i - a_{0y} - (a_{1y} \cdot y_{refi})]^2}{\sum_{i=1}^N [y_i - \bar{y}]^2}$$

In this equation, “N” denotes sample size, “i” denotes an index, “y” denotes a generic measured quantity, the superscript over-bar “ $\bar{}$ ” denotes an arithmetic mean, and the subscript “ $_{ref}$ ” denotes the reference quantity being measured.

(8) Subtract the weight of the tank at the end of the test from the weight of the tank at the beginning of the test; divide the difference by the internal surface area of the fuel tank. Divide this g/m² value by the number of test days (using at least three significant figures) to calculate the g/m²/day emission rate. Example: If a tank with an internal surface area of 0.72 m² weighed 31882.3 grams at the beginning of the test and weighed 31760.2 grams after soaking for 25.03 days, then the g/m²/day emission rate would be: (31882.3g – 31760.2 g) / 0.72 m² / 25.03 days = 6.78 g/m²/day.

(9) Round your result to the same number of decimal places as the emission standard.

(c) *Determination of final test result.* To determine the final test result, apply a deterioration factor to the measured emission level. The deterioration factor is the difference between permeation emissions measured before and after the durability testing described in paragraph (d) of this section. Adjust the baseline test results for each tested fuel tank by adding the deterioration factor to the measured emissions. The deterioration factor determination must be based on good engineering judgment. Therefore, during the durability testing, the test tank may not exceed the fuel tank permeation standard described in section 2412(b), Title 13, CCR, (this is known as “line-crossing”). If the deterioration factor is less than zero, use zero.

(d) *Durability testing.* You normally need to perform a separate durability demonstration for each substantially different combination of treatment approaches and tank materials. Perform these demonstrations before an emission test by taking the following steps, unless you can use good engineering judgment to apply the results of previous durability testing with a different fuel system. You may ask to exclude any of the following durability tests if you can clearly demonstrate that it does not affect the emissions from your fuel tank.

(1) *Pressure cycling.* Perform a pressure test by sealing the tank and cycling it between +2.0 psig and -0.5 psig and back to +2.0 psig for 10,000 cycles at a rate 60 seconds per cycle.

(2) *UV exposure.* Perform a sunlight-exposure test by exposing the tank to an ultraviolet light of at least 24 W/m² (0.40 W-hr/m²/min) on the tank surface for 15

hours per day for 30 days. Alternatively, the fuel tank may be exposed to direct natural sunlight for an equivalent period of time, as long as you ensure that the tank is exposed to at least 450 daylight hours.

(3) *Slosh testing.* Perform a slosh test by filling the tank to 40 percent of its capacity with the fuel specified in section 1051.501(b)(2)(i) of these test procedures and rocking it at a rate of 15 cycles per minute until you reach one million total cycles. Use an angle deviation of +15° to -15° from level. This test must be performed at a temperature of 28 C ±5°C.

(4) *Final test result.* Following the durability testing, the fuel tank must be soaked (as described in paragraph (a) of this section) to ensure that the permeation rate is stable. The period of slosh testing and the period of ultraviolet testing (if performed with fuel in the tank consistent with paragraph (a)(1) of this section) may be considered to be part of this soak, provided that the soak begins immediately after the slosh testing. To determine the final permeation rate, drain and refill the tank with fresh fuel, and repeat the permeation test run (as described in paragraph (b) of this section) immediately after this soak period. The same test fuel must be used for this permeation test run as for the permeation test run performed prior to the durability testing.

Subpart I, Definitions and Other Reference Information

1051.801 What definitions apply to this part?

The definitions in the California Health and Safety Code and in Title 13, CCR, § 2421, shall apply.

The definitions in Part 86.402-78 of these test procedures shall apply and shall take precedent in the event of conflict.

Act means California Health and Safety Code, Division 26, and corresponding regulations, except where the context indicates otherwise.

Adjustable parameter means any device, system, or element of design that someone can adjust (including those which are difficult to access) and that, if adjusted, may affect emissions or engine performance during emission testing or normal in-use operation. This includes, but is not limited to, parameters related to injection timing and fueling rate. You may ask us to exclude a parameter that is difficult to access if it cannot be adjusted to affect emissions without significantly degrading engine performance, or if you otherwise show us that it will not be adjusted in a way that affects emissions during in-use operation.

Aftertreatment means relating to a catalytic converter, particulate filter, or any other system, component, or technology mounted downstream of the exhaust valve (or exhaust port) whose design function is to decrease emissions in the engine exhaust before it is exhausted to the environment. Exhaust-gas recirculation (EGR) and turbochargers are not aftertreatment.

All-terrain vehicle means a land-based or amphibious nonroad vehicle that meets the criteria listed in paragraph (1) of this definition; or, alternatively the criteria of paragraph (2) of this definition but not the criteria of paragraph (3) of this definition:

(1) Vehicles designed to travel on four low pressure tires, having a seat designed to be straddled by the operator and handlebars for steering controls, and intended for use by a single operator and no other passengers are all-terrain vehicles.

(2) Other all-terrain vehicles have three or more wheels and one or more seats, are designed for operation over rough terrain, are intended primarily for transportation, and have a maximum vehicle speed of 25 miles per hour or higher. Golf carts generally do not meet these criteria since they are generally not designed for operation over rough terrain.

(3) Vehicles that meet the definition of "offroad utility vehicle" in this section are not all-terrain vehicles. However, Sec. 1051.1(a) specifies that some offroad utility vehicles are required to meet the same requirements as all-terrain vehicles.

Amphibious vehicle means a vehicle with wheels or tracks that is designed primarily for operation on land and secondarily for operation in water.

Auxiliary emission-control device means any element of design that senses temperature, motive speed, engine RPM, transmission gear, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission-control system.

Brake power means the usable power output of the engine, not including power required to fuel, lubricate, or heat the engine, circulate coolant to the engine, or to operate aftertreatment devices.

Calibration means the set of specifications and tolerances specific to a particular design, version, or application of a component or assembly capable of functionally describing its operation over its working range.

Certification means relating to the process of obtaining a certificate of conformity for an engine family that complies with the emission standards and requirements in this part.

Certified emission level means the highest deteriorated emission level in an engine family for a given pollutant from either transient or steady-state testing.

Clean Air Act means California Health and Safety Code, Division 26, and corresponding regulations, except where the context indicates otherwise.

Compression-ignition means relating to a type of reciprocating, internal-combustion engine that is not a spark-ignition engine.

Crankcase emissions means airborne substances emitted to the atmosphere from any part of the engine crankcase's ventilation or lubrication systems. The crankcase is the housing for the crankshaft and other related internal parts.

Critical emission-related component means any of the following components:
(1) Electronic control units, aftertreatment devices, fuel-metering components, EGR-system components, crankcase-ventilation valves, all components related to charge-air compression and cooling, and all sensors and actuators associated with any of these components.

(2) Any other component whose primary purpose is to reduce emissions.

Designated Compliance Officer means the Executive Officer of the Air Resources Board (or the Executive Officer's designee).

Designated Enforcement Officer means the Executive Officer of the Air Resources Board (or the Executive Officer's designee).

Deteriorated emission level means the emission level that results from applying the appropriate deterioration factor to the official emission result of the emission-data vehicle.

Deterioration factor means the relationship between emissions at the end of useful life and emissions at the low-hour test point, expressed in one of the following ways:

(1) For multiplicative deterioration factors, the ratio of emissions at the end of useful life to emissions at the low-hour test point.

(2) For additive deterioration factors, the difference between emissions at the end of useful life and emissions at the low-hour test point.

Emission-control system means any device, system, or element of design that controls or reduces the regulated emissions from an engine.

Emission-data vehicle means a vehicle or engine that is tested for certification. This includes vehicles or engines tested to establish deterioration factors.

Emission-related maintenance means maintenance that substantially affects emissions or is likely to substantially affect emission deterioration.

Engine configuration means a unique combination of engine hardware and calibration within an engine family. Engines within a single engine configuration differ only with respect to normal production variability.

Engine family has the meaning given in Sec. 1051.230.

EPA or U.S. EPA means Air Resources Board.

Evaporative means relating to fuel emissions that result from permeation of fuel through the fuel system materials and from ventilation of the fuel system.

Excluded means relating to an engine that either:

(1) Has been determined not to be a nonroad engine, as specified in 40 CFR 1068.30; or

(2) Is a nonroad engine that is excluded from this part 1051 under the provisions of Sec. 1051.5.

Exempted has the meaning given in 40 CFR 1068.30.

Exhaust-gas recirculation means a technology that reduces emissions by routing exhaust gases that had been exhausted from the combustion chamber(s) back into the engine to be mixed with incoming air before or during combustion. The use of valve timing to increase the amount of residual exhaust gas in the combustion chamber(s) that is mixed with incoming air before or during combustion is not considered exhaust-gas recirculation for the purposes of this part.

Family emission limit (FEL) means an emission level declared by the manufacturer to serve in place of an otherwise applicable emission standard under the ABT program in subpart H of this part. The family emission limit must be expressed to the same number of decimal places as the emission standard it replaces. The family emission limit serves as the emission standard for the engine family with respect to all required testing.

Fuel line means all hoses or tubing designed to contain liquid fuel or fuel vapor. This includes all hoses or tubing for the filler neck, for connections between dual fuel tanks, and for connecting a carbon canister to the fuel tank. This does not include hoses or tubing for routing crankcase vapors to the engine's intake or any other hoses or tubing that are open to the atmosphere.

Fuel system means all components involved in transporting, metering, and mixing the fuel from the fuel tank to the combustion chamber(s), including the fuel tank, fuel tank cap, fuel pump, fuel filters, fuel lines, carburetor or fuel-injection components, and all fuel-system vents. In the case where the fuel tank cap or other components (excluding fuel lines) are directly mounted on the fuel tank, they are considered to be a part of the fuel tank.

Fuel type means a general category of fuels such as gasoline or natural gas. There can be multiple grades within a single fuel type, such as winter-grade and all-season gasoline.

Good engineering judgment means judgments made consistent with generally accepted scientific and engineering principles and all available relevant information. See 40 CFR 1068.5 for the administrative process we use to evaluate good engineering judgment.

Hydrocarbon (HC) means the hydrocarbon group on which the emission standards are based for each fuel type. For alcohol-fueled engines, HC means total hydrocarbon equivalent (THCE). For all other engines, HC means nonmethane hydrocarbon (NMHC).

Identification number means a unique specification (for example, a model number/serial number combination) that allows someone to distinguish a particular vehicle or engine from other similar engines.

Low-hour means relating to an engine with stabilized emissions and represents the undeteriorated emission level. This would generally involve less than 24 hours or 240 kilometers of operation.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a vehicle or engine for sale in the United States or otherwise introduces a new vehicle or engine into commerce in the United States. This includes importers that import vehicles or engines for resale.

Maximum engine power has the meaning given in 40 CFR 90.3.

Maximum test power means the maximum brake power of an engine at test conditions.

Maximum test speed has the meaning given in 40 CFR 1065.1001.

Maximum test torque has the meaning given in 40 CFR 1065.1001.

Model year means one of the following things:

(1) For freshly manufactured vehicles (see definition of “new,” paragraph (1)), model year means one of the following:

(i) Calendar year.

(ii) Your annual new model production period if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine originally manufactured as a motor-vehicle engine or a stationary engine that is later intended to be used in a vehicle subject to the standards and requirements of this part 1051, model year means the calendar year in which the engine was originally produced (see definition of "new," paragraph (2)).

(3) For a nonroad engine that has been previously placed into service in an application covered by 40 CFR part 90, 91, or 1048, where that engine is installed in a piece of equipment that is covered by this part 1051, model year means the calendar year in which the engine was originally produced (see definition of "new," paragraph (3)).

(4) For engines that are not freshly manufactured but are installed in new recreational vehicles, model year means the calendar year in which the engine is installed in the recreational vehicle (see definition of "new," paragraph (4)).

(5) For imported engines:

(i) For imported engines described in paragraph (5)(i) of the definition of "new," model year has the meaning given in paragraphs (1) through (4) of this definition.

(ii) For imported engines described in paragraph (5)(ii) of the definition of "new," model year means the calendar year in which the vehicle is modified.

Motor vehicle has the meaning given in 40 CFR 85.1703(a).

New means relating to any of the following things:

(1) A freshly manufactured vehicle for which the ultimate purchaser has never received the equitable or legal title. This kind of vehicle might commonly be thought of as "brand new." In the case of this paragraph (1), the vehicle becomes new when it is fully assembled for the first time. The engine is no longer new when the ultimate purchaser receives the title or the product is placed into service, whichever comes first.

(2) An engine originally manufactured as a motor-vehicle engine or a stationary engine that is later intended to be used in a vehicle subject to the standards and requirements of this part 1051. In this case, the engine is no longer a motor-vehicle or stationary engine and becomes new. The engine is no longer new when it is placed into service as a recreational vehicle covered by this part 1051.

(3) A nonroad engine that has been previously placed into service in an application covered by 40 CFR part 90, 91, or 1048, where that engine is installed in a piece of equipment that is covered by this part 1051. The engine is no longer new when it is placed into service in a recreational vehicle covered by this part 1051. For example, this would apply to a marine propulsion engine that is no longer used in a marine vessel.

(4) An engine not covered by paragraphs (1) through (3) of this definition that is intended to be installed in a new vehicle covered by this part 1051. The engine is no longer new when the ultimate purchaser receives a title for the vehicle or it is placed into service, whichever comes first. This generally includes installation of used engines in new recreational vehicles.

(5) An imported vehicle or engine, subject to the following provisions:

(i) An imported recreational vehicle or recreational-vehicle engine covered by a certificate of conformity issued under this part that meets the criteria of one or more of paragraphs (1) through (4) of this definition, where the original manufacturer holds the certificate, is new as defined by those applicable paragraphs.

(ii) An imported recreational vehicle or recreational-vehicle engine covered by a certificate of conformity issued under this part, where someone other than the original manufacturer holds the certificate (such as when the engine is modified after its initial assembly), becomes new when it is imported. It is no longer new when the ultimate purchaser receives a title for the vehicle or engine or it is placed into service, whichever comes first.

(iii) An imported recreational vehicle or recreational-vehicle engine that is not covered by a certificate of conformity issued under this part at the time of importation is new, but only if it was produced on or after the 2007 model year. This addresses uncertified engines and equipment initially placed into service that someone seeks to import into the United States. Importation of this kind of new nonroad engine (or equipment containing such an engine) is generally prohibited by 40 CFR part 1068.

Noncompliant means relating to a vehicle that was originally covered by a certificate of conformity, but is not in the certified configuration or otherwise does not comply with the conditions of the certificate.

Nonconforming means relating to vehicle not covered by a certificate of conformity that would otherwise be subject to emission standards.

Nonmethane hydrocarbon means the difference between the emitted mass of total hydrocarbons and the emitted mass of methane.

Nonroad means relating to nonroad engines or equipment that includes nonroad engines.

Nonroad engine has the meaning given in 40 CFR 1068.30. In general this means all internal-combustion engines except motor-vehicle engines, stationary engines, engines used solely for competition, or engines used in aircraft.

Off-highway motorcycle means a two-wheeled vehicle with a nonroad engine and a seat (excluding marine vessels and aircraft). (Note: highway motorcycles are regulated under 40 CFR part 86.)

Official emission result means the measured emission rate for an emission-data vehicle on a given duty cycle before the application of any deterioration factor, but after the applicability of regeneration adjustment factors.

Offroad utility vehicle means a nonroad vehicle that has four or more wheels, seating for two or more persons, is designed for operation over rough terrain, and

has either a rear payload of 350 pounds or more or seating for six or more passengers. Vehicles intended primarily for recreational purposes that are not capable of transporting six passengers (such as dune buggies) are not offroad utility vehicles. (Note: Sec. 1051.1(a) specifies that some offroad utility vehicles are required to meet the requirements that apply for all-terrain vehicles.)

Owners manual means a document or collection of documents prepared by the engine manufacturer for the owner or operator to describe appropriate engine maintenance, applicable warranties, and any other information related to operating or keeping the engine. The owners manual is typically provided to the ultimate purchaser at the time of sale.

Oxides of nitrogen has the meaning given in 40 CFR 1065.1001.

Phase 1 means relating to Phase 1 standards of Sec. Sec. 1051.103, 1051.105, or 1051.107, or other Phase 1 standards specified in subpart B of this part.

Phase 2 means relating to Phase 2 standards of Sec. 1051.103, or other Phase 2 standards specified in subpart B of this part.

Phase 3 means relating to Phase 3 standards of Sec. 1051.103, or other Phase 3 standards specified in subpart B of this part.

Placed into service means put into initial use for its intended purpose.

Point of first retail sale means the location at which the initial retail sale occurs. This generally means an equipment dealership, but may also include an engine seller or distributor in cases where loose engines are sold to the general public for uses such as replacement engines.

Recreational means, for purposes of this part, relating to snowmobiles, all-terrain vehicles, off-highway motorcycles, and other vehicles that we regulate under this part. Note that 40 CFR part 90 applies to engines used in other recreational vehicles.

Revoke has the meaning given in 40 CFR 1068.30.

Round has the meaning given in 40 CFR 1065.1001, unless otherwise specified.

Scheduled maintenance means adjusting, repairing, removing, disassembling, cleaning, or replacing components or systems periodically to keep a part or system from failing, malfunctioning, or wearing prematurely. It also may mean actions you expect are necessary to correct an overt indication of failure or malfunction for which periodic maintenance is not appropriate.

Small-volume manufacturer means one of the following:

(1) For motorcycles and ATVs, a manufacturer that sold motorcycles or ATVs before 2003 and had annual U.S.-directed production of no more than 5,000 off-road motorcycles and ATVs (combined number) in 2002 and all earlier calendar years. For manufacturers owned by a parent company, the limit applies to the production of the parent company and all of its subsidiaries.

(2) For snowmobiles, a manufacturer that sold snowmobiles before 2003 and had annual U.S.-directed production of no more than 300 snowmobiles in 2002 and all earlier model years. For manufacturers owned by a parent company, the limit applies to the production of the parent company and all of its subsidiaries.

(3) A manufacturer that we designate to be a small-volume manufacturer under Sec. 1051.635.

Snowmobile means a vehicle designed to operate outdoors only over snow-covered ground, with a maximum width of 1.5 meters or less.

Spark-ignition means relating to a gasoline-fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark-ignition engines usually use a throttle to regulate intake air flow to control power during normal operation.

Suspend has the meaning given in 40 CFR 1068.30.

Test sample means the collection of engines selected from the population of an engine family for emission testing. This may include testing for certification, production-line testing, or in-use testing.

Test vehicle or engine means an engine in a test sample.

Total hydrocarbon means the combined mass of organic compounds measured by the specified procedure for measuring total hydrocarbon, expressed as a hydrocarbon with a hydrogen-to-carbon mass ratio of 1.85:1.

Total hydrocarbon equivalent means the sum of the carbon mass contributions of non-oxygenated hydrocarbons, alcohols and aldehydes, or other organic compounds that are measured separately as contained in a gas sample, expressed as exhaust hydrocarbon from petroleum-fueled engines. The hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1.

Ultimate purchaser means, with respect to any new nonroad equipment or new nonroad engine, the first person who in good faith purchases such new nonroad equipment or new nonroad engine for purposes other than resale.

Ultraviolet light means electromagnetic radiation with a wavelength between 300 and 400 nanometers.

United States has the meaning given in 40 CFR 1068.30.

Upcoming model year means for an engine family the model year after the one currently in production.

U.S.-directed production volume means the number of vehicle units, subject to the requirements of this part, produced by a manufacturer for which the manufacturer has a reasonable assurance that sale was or will be made to ultimate purchasers in the United States. This includes vehicles for which the location of first retail sale is in a state that has applicable state emission regulations for that model year, unless we specify otherwise.

Useful life means the period during which a vehicle is required to comply with all applicable emission standards, specified as a given number of calendar years and kilometers (whichever comes first). In some cases, useful life is also limited by a given number of hours of engine operation. If an engine has no odometer (or hour meter), the specified number of kilometers (or hours) does not limit the period during which an in-use vehicle is required to comply with emission standards, unless the degree of service accumulation can be verified separately. The useful life for an engine family must be at least as long as both of the following:

- (1) The expected average service life before the vehicle is remanufactured or retired from service.
- (2) The minimum useful life value.

Void has the meaning given in 40 CFR 1068.30.

We (us, our) means the Executive Officer of the California Air Resources Board and any authorized representatives.

Wide-open throttle means maximum throttle opening. Unless this is specified at a given speed, it refers to maximum throttle opening at maximum speed. For electronically controlled or other engines with multiple possible fueling rates, wide-open throttle also means the maximum fueling rate at maximum throttle opening under test conditions.

You means, within the context of its usage, the target entity to which the regulatory provision applies. This is typically the engine manufacturer, but may occasionally refer to the equipment manufacturer or other entity as specified.

1051.810 What materials does this part reference?

(a) ASTM material. Table 1 of this section lists material from the American Society for Testing and Materials that we have incorporated by reference. The first column lists the number and name of the material. The second column lists the sections of this part where we reference it. Anyone may purchase copies of these materials from the American Society for Testing and Materials, 100 Barr Harbor Dr., P.O. Box C700, West Conshohocken, PA 19428 or www.astm.com. Table 1 follows:

Table 1 of Sec. 1051.810–ASTM Materials

| Document number and name | Part 1051 reference |
|----------------------------------------------------------------------------------------------------------------------|---------------------|
| ASTM D471-98, Standard Test Method for Rubber Property-Effect on Liquids..... | 1051.501 |
| ASTM D814-95 (reapproved 2000), Standard Test Method for Rubber Property Vapor Transmission of Volatile Liquids..... | 1051.245 |

(b) SAE material. Table 2 of this section lists material from the Society of Automotive Engineering that we have incorporated by reference. The first column lists the number and name of the material. The second column lists the sections of this part where we reference it. Anyone may purchase copies of these materials from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096 or www.sae.org. Table 2 follows:

Table 2 of Sec. 1051.810–SAE Materials

| Document number and name | Part 1051 reference |
|-------------------------------------------------------------------------------------------------------------------|---------------------|
| SAE J30, Fuel and Oil Hoses, June 1998..... | 1051.245, 1051.501 |
| SAE J1930, Electrical/Electronic Systems Diagnosis Terms, Definitions, Abbreviations, and Acronyms, May 1998..... | 1051.135 |
| SAE J2260, Nonmetallic Fuel System Tubing with One or More Layers, November 1996..... | 1051.245 |