

Driver's Guide to Clean Air

Information you need if your vehicle does not pass the Vehicle Emission Test

DEQ helps you protect your vehicle and promote cleaner air

DEQ vehicle emission tests lets motorists know when the pollution control devices on their vehicle malfunction. Any vehicle that has malfunctioning emission controls or is poorly maintained may emit up to three to four times more pollution than standards allow for new cars. Finding and correcting the problem will help control air pollution. Your vehicle will also perform better and get better fuel economy.

You must pass a re-test before you can receive your DEQ Certificate of Compliance and renew your DMV vehicle registration. Your Emissions Test Report provides data that can be useful to the person making the repairs on your vehicle.

What causes vehicles to fail?

The following is a guide to the most common causes. Vehicle emission systems vary by manufacturer and are too numerous to list here.

Excessive Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless and tasteless gas, which is poisonous to humans and pets. Too much CO indicates that the engine is getting too much fuel and/or not enough air. The following are potential problems:

- Dirty air cleaner or air filter
- Contaminated oil
- Stuck choke
- Leaking or malfunctioning fuel injectors
- Misadjusted carburetor or internal carburetor problems
- Malfunctioning thermostat
- Faulty catalytic converter
- Malfunctioning secondary air injection system
- Engine management or computer problems

Excessive Hydrocarbons

Hydrocarbons (HC) are unburned fuel or oil. One of the most common causes of high HC levels is a misfiring engine. Some causes of misfiring include a lean fuel mixture (too much air) or faulty spark plugs. The following are potential problems:

- A misfire caused by a secondary system, like spark plugs, spark plug

wires, rotor, ignition coil or distributor cap

- Vacuum leak or malfunctioning vacuum device
- Exhaust gas recirculation (EGR) system malfunction or maladjustment
- Improper spark timing
- Malfunctioning secondary air injection pump or system
- Faulty catalytic converter
- Worn valves, seals, guides or piston rings
- Fuel injection system or carburetor malfunctions

Tailpipe Smoke

When your car is warm, there should be no visible smoke from the tailpipe or any part of the vehicle. Smoke can be caused by dirty or worn engine parts, carburetor malfunction, dirty oil or other problems. Vehicles may be subject to a fine for excessive smoke if stopped by a police officer. When the problems causing excessive smoke are corrected, test results for other pollutants may change.

On-Board Diagnostics Malfunction

Any of the above problems can cause your vehicle to fail the on-board diagnostics test. You'll be given a printout with a list of diagnostic trouble codes corresponding to the emission problem. Your mechanic should be able to use these codes to help diagnose what's wrong with the emission system.

Note: All 2001 and newer model year vehicles are allowed one "Unready" monitor. All 1996-2000 model year vehicles are allowed two "Unready" monitors. An "Unready" monitor refers to an emission control system test that hasn't yet been completed. A vehicle which previously failed with either a catalyst or evaporative diagnostic trouble code (DTC) must have the respective monitor ready. For example, if a vehicle previously failed with a catalyst DTC, then the catalyst monitor must be ready for the vehicle to pass a subsequent retest.

Need help locating an auto repair technician?

Ask your inspector for a list of **DEQ Recognized Auto Repair Shops** or call 971-673-1630.



State of Oregon
Department of
Environmental
Quality

**Air Quality
Vehicle Inspection**
1240 SE 12th Avenue
Portland, OR 97214
Phone: (971) 673-1630
(877) 476-0583
Fax: (971) 673-1640

www.oregon.gov/deq

Portland-Metro Area Clean Air Stations:

*All stations (except
Scappoose) are open:*

Tue, Thu, Fri
8:30 a.m. - 5:30 p.m.
Wednesday
8:30 a.m. - 7:00 p.m.
Saturday
8:30 a.m. - 1:00 p.m.

Clackamas
9350 SE Clackamas Rd
(Off 82nd Dr, E. of I-205)

Gresham
1200 SW Highland Dr
(Ne SE 182nd & Powell)

NE Portland
7701 NE 33rd Dr
(N. of Columbia &
Lombard)

Sherwood
14962 SW Tual-Sher Rd

Sunset (Hillsboro)
5130 NW Five Oaks Dr
(Off Hwy 26, Cornelius
Pass Rd Exit)

Scappoose
52751 NE 1st Street
(Off Hwy 30, Williams St)
Fri:
8:30 a.m. - 5:30 p.m.
Sat: 8:30 a.m. - 1 p.m.

Report Smoking Vehicles:
1-888-997-7888 or online

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How to Read Your Emissions Test Form

On-Board Diagnostics Test: "OBD SENSOR STATUS" (1996 and newer model year vehicles)

Misfire: Monitors engine for misfires, cylinders not firing properly.

Fuel System: Indicates if the correct air/fuel mixture is maintained for proper combustion.

Component: Monitors components for shorts, opens and rationality.

Catalyst: Monitors catalytic converter to ensure it's working efficiently.

Catalyst Heater: Checks catalyst heater to ensure it's working properly.

Evap: Monitors for leaks in evaporative (fuel vapor storage) system.

2nd Air: Detects any failures in air injection reaction system.

Reserved: Reserved for future use by EPA.

O2 Sensor: Monitors amount of unburned oxygen remaining in the exhaust.

O2 Heater: Monitors oxygen sensor heater.

EGR/VVT: Monitors Exhaust Gas Recirculation system and Variable Valve Timing system.

DLC Indicates status of OBD connector.

Comm: Indicates if OBD computer communicates with DEQ equipment.

MIL: Indicates if vehicle's computer believes the MIL (Malfunction Indicator Light, or Check Engine Light) is lit when the engine is on.

Special Monitors for 2009 and Newer Diesel Vehicles

NMHC Catalyst: Similar to Catalyst listed above.

NOx/SCR: Monitors Selective Catalytic Reduction system, which reduces nitrogen oxides.

Boost Pressure: Monitors intake manifold to ensure a boost pressure.

EGS: The Exhaust Gas Sensor Monitors the exhaust gas.

PM Filter: Monitors particulate matter filter.

If there's a malfunction with the vehicle's emission system and it fails the test, a trouble code will be printed on the bottom of the form. For a list of what the codes mean, visit obd-codes.com

If your vehicle is "not ready" for the OBD Test

Vehicles taking the OBD test that have been recently repaired or reset may need to complete several drive cycles before OBD monitors are "Ready." If there's a malfunction with the vehicle's emission system and it fails the test, a trouble code may be printed on the bottom of this form. Contact an authorized service provider for more information on OBD, OBD codes, OBD readiness and drive cycles.

How do I return the statuses to "Ready"?

Have the repair technician drive the vehicle through a special driving cycle, afterward ensuring the statuses are "ready" using a scan tool. If you do your own work and don't have a scan tool, drive the vehicle in normal fashion, both at cruising speeds and

"stop and go" driving, for up to a week before retiring to be tested.

Basic Test: "TAILPIPE EMISSION TEST RESULTS" (1975-1995 model year vehicles)

HC STD: The maximum allowable standard (expressed in parts per million – "ppm") your vehicle must meet for hydrocarbon emissions.

CO STD: The maximum allowable standard (expressed in percentage of total exhaust emissions) your vehicle must meet for carbon monoxide (CO) emissions.

Dilution: The minimum percentage of carbon dioxide (CO₂) that must be present in your vehicle exhaust.

HC: The vehicle's total hydrocarbon emission in ppm (unburned fuels or oil) is listed in this column.

CO: The percentage of CO present in your vehicle exhaust directly proportional to the amount of fuel placed in the engine. High CO= High amounts of fuel ("rich"). Low CO= low amounts of fuel ("lean"). Also expressed in ppm.

CO₂: The percentage of CO₂ present in your vehicle exhaust. A value lower than the "Dilution" column could indicate leaks in the vehicle exhaust system.

Need assistance with repairs? Clean Air Partners can help!

The Clean Air Partners fund (CAPs) helps Oregonians in need pay for repairs to their vehicle emissions control system.

Putting off minor repairs when times are tough can lead to more expensive repairs later. CAPs helps people in need stay on top of repairs and properly maintain their vehicles.

Newer vehicles usually run cleaner than their early counterparts but are often more expensive to repair. CAPs helps offset the cost for families in need, providing them with a better opportunity to drive safer, more reliable and cleaner cars.

Become a partner. Even if you don't need CAPs, you can still help others by making a donation. On your next trip to DEQ, please "Put a Buck in the Box."

If your model year 1996 or newer vehicle has failed the DEQ emissions test and you qualify for low-income assistance, call:

971-673-1630, ext. 0



Alternative formats

Alternative formats of this document can be made available. For more information call 503-229-5696, Portland, or call toll-free in Oregon at 1-800-452-4011, ext. 5696. Hearing-impaired persons may call 711.