

GENERIC · POWERTRAIN

P0496

OBD-II TROUBLE CODE

P0496

Evaporative Emission System High Purge Flow

P0496 means the powertrain control module (PCM) has detected that the evaporative emission (EVAP) system purge flow is higher than expected when the purge solenoid is commanded open. In plain English, the computer sees too much fuel vapor being pulled from the charcoal canister into the intake, often because the purge valve is stuck open or a control circuit is keeping it energized.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Auxiliary emission controls

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the leak is small and the valve only sticks intermittently.
- A rough idle or stumbling that appears after refueling or at a stop, caused by excess fuel vapor entering the intake.
- A strong fuel odor around the vehicle, particularly near the rear or under the hood after the engine is shut off.
- Difficulty refueling, such as the fuel nozzle clicking off repeatedly before the tank is full, if the canister is saturated.
- A slight drop in fuel economy because the engine is running richer than the oxygen sensor feedback can fully correct.
- Intermittent check engine light that clears itself after a few drive cycles when the purge valve reseats.

Common causes, most likely first

- 1 Purge solenoid valve stuck open or not fully closing due to contamination, wear, or a weak return spring.
- 2 Short to voltage or chafed wiring on the purge solenoid control circuit, keeping the valve energized when it should be closed.
- 3 PCM driver failure that grounds the purge solenoid control circuit continuously, though this is less common than valve or wiring faults.
- 4 Evaporative emission canister saturated with liquid fuel from overfilling the tank, which then sends raw fuel vapor through the purge line.
- 5 Blocked or kinked purge line that traps pressure and forces flow past a partially open valve when the PCM expects a controlled amount.
- 6 Aftermarket or incorrect purge solenoid installed previously that has different flow characteristics than the original part.
- 7 Fuel tank pressure sensor or fuel level sensor misreporting, causing the PCM to command purge when conditions are not actually correct.



How to diagnose and fix it

- 1 Verify the stored code and freeze-frame data with a scan tool, then check for any related EVAP or fuel trim codes before touching parts.
- 2 Inspect the purge solenoid valve and its electrical connector for corrosion, loose pins, or obvious damage, and confirm the valve closes fully when unpowered.
- 3 Command the purge solenoid on and off with a bidirectional scan tool while watching fuel trim and EVAP pressure to see whether flow changes as commanded.
- 4 Measure resistance and voltage on the purge solenoid control circuit to rule out a short to voltage or a failed PCM driver before replacing the valve.
- 5 Check the EVAP canister for liquid fuel contamination and inspect the purge line for kinks, blockage, or disconnected fittings.
- 6 Replace the purge solenoid valve only after electrical and flow tests confirm it is the source of the high purge flow.
- 7 Clear the code, perform the manufacturer's EVAP monitor drive cycle, and confirm the monitor runs to completion without resetting P0496.

What high purge flow really tells you

- A purge valve that sticks open only when hot or after a long drive can pass a cold bench test, so the fault often returns unless the valve is tested at operating temperature.
- Overfilling the fuel tank is a leading cause of saturated canisters and high purge flow, and the code may reappear after valve replacement if the refueling habit does not change.
- P0496 does not always mean the valve itself is bad; a shorted control wire or a failed PCM driver can hold the valve open continuously and mimic a mechanical failure.
- Fuel trim readings during a commanded purge test are more revealing than static resistance checks, because a valve can measure correctly but still leak vapor when seated.
- Some vehicles set P0496 only after a specific fuel level or ambient temperature condition, so a code that clears on its own is not proof the fault has been repaired.

Can I keep driving with P0496?

You can usually drive with P0496, but avoid topping off the fuel tank and do not ignore a rough idle or strong fuel smell, because a stuck-open purge valve can load the engine with fuel vapor and damage the catalytic converter over time. Have the fault diagnosed promptly if the check engine light flashes or the engine runs poorly.



Tools that help

- Bidirectional scan tool with EVAP purge and fuel trim capabilities
- Digital multimeter for circuit and resistance testing
- Hand vacuum pump to test purge valve sealing and diaphragm operation
- Basic hand tools for accessing the purge solenoid and canister
- Smoke machine or EVAP pressure tester for confirming system integrity

Reading P0496

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
4	Auxiliary emission controls.
96	The exact fault within that area.

Often seen with

P0172 System Too Rich (Bank 1) · **P0441** EVAP System Incorrect Purge Flow · **P0442** EVAP System Leak Detected (Small) · **P0455** EVAP System Leak Detected (Large) · **P0456** Evaporative Emission System Leak Detected (very small leak)

See it working

Watch the animated explainer [How a Starter Motor Works: Pre-Engaged Starter](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0496/>

