



P1441 · GM

Evaporative Emission (EVAP) System Flow During Non-Purge

P1441 on a GM vehicle means the engine computer detected fuel vapor flowing through the evaporative emission (EVAP) system when the purge solenoid was commanded closed. The computer expects a sealed system during non-purge conditions, so any unexpected flow or pressure change triggers this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Low	Intermediate	Auxiliary emission controls

Symptoms you may notice

- Illuminated check engine light, often with no other symptoms
- A faint fuel odor around the vehicle, especially after refueling
- Slightly rough idle or hesitation in rare cases if a large leak is present
- Fuel cap may feel loose or not click when tightened
- No noticeable driveability problems in most instances

Common causes, most likely first

- 1 Faulty purge solenoid (evaporative emission canister purge valve) stuck open or leaking internally
- 2 Leaking or disconnected EVAP hose between the canister and purge solenoid
- 3 Fuel cap not sealing properly or missing
- 4 Leaking fuel tank pressure sensor or its seal
- 5 Cracked or damaged EVAP canister
- 6 Wiring issue to the purge solenoid or fuel tank pressure sensor (open, short, or poor connection)
- 7 Sticking or failed canister vent solenoid (less common for this specific code)



How to diagnose and fix it

- 1 Check the fuel cap for tightness and condition; replace if the seal is damaged or the cap does not click
- 2 Inspect all EVAP hoses and connections visually for cracks, disconnects, or obvious damage
- 3 Use a scan tool to command the purge solenoid closed and observe fuel tank pressure or EVAP system flow to confirm unexpected flow
- 4 Test the purge solenoid for internal leakage by applying vacuum or pressure and checking for flow when de-energized
- 5 Check the fuel tank pressure sensor reading for plausibility with the key on, engine off
- 6 Inspect wiring and connectors at the purge solenoid and fuel tank pressure sensor for corrosion or damage
- 7 If all else checks out, perform a smoke test on the EVAP system to locate small leaks

Why a stuck purge valve fools many diagnostics

- A purge solenoid that leaks internally but still clicks when commanded can pass a basic resistance test, so flow testing is essential.
The fuel tank pressure sensor on GM vehicles is a common source of false EVAP flow readings and should be verified before replacing the purge valve.
- This code can set intermittently if the purge valve sticks only when hot or after a long drive, making it hard to reproduce in the shop.
- A missing or poorly sealing aftermarket fuel cap is a frequent cause that many owners overlook because the cap looks fine.
Do not confuse P1441 with large leak codes like P0455; P1441 specifically indicates flow during non-purge, which points to a valve or sensor issue rather than a large opening.

Can I keep driving with P1441?

It is generally safe to continue driving with P1441 because it does not affect engine performance or safety, but avoid topping off the fuel tank and have the system checked soon to prevent a small leak from becoming a larger problem.

Tools that help

- OBD-II scan tool with bidirectional control
- Hand vacuum pump
- Smoke machine
- Digital multimeter
- Basic hand tools (screwdrivers, pliers, socket set)



Reading P1441

- P** Powertrain: engine, transmission and emissions.
- 1** Manufacturer-specific code (GM): its meaning depends on the make.
- 4** Auxiliary emission controls.
- 41** The exact fault within that area.

Often seen with

P0440 Evaporative Emission Control System Malfunction · **P0442** EVAP System Leak Detected (Small) · **P0446** EVAP Vent Control Circuit Malfunction · **P0455** EVAP System Leak Detected (Large) · **P0496** Evaporative Emission System High Purge Flow

See it working

Watch the animated explainer [How a CVT Works: Belt and Pulley Transmission](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1441/>

