



P1171 · GM

Fuel System Lean During Acceleration

P1171 on GM vehicles means the powertrain control module (PCM) has detected a lean fuel condition specifically during acceleration, where the air-fuel mixture contains too much air and not enough fuel. The PCM monitors oxygen sensor feedback and fuel trim corrections, and when it must add excessive fuel to maintain the target ratio under acceleration, it stores this code.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Intermediate	Fuel and air metering

Symptoms you may notice

- Check engine light illuminated, often with no other noticeable symptoms
- Hesitation or stumble when accelerating from a stop or during passing
- Reduced engine power or sluggish response under load
- Occasional rough idle or misfire that worsens during acceleration
- Poor fuel economy despite the lean condition
- Engine may surge or feel like it is running out of fuel at higher speeds

Common causes, most likely first

- 1 Vacuum leak from a cracked or disconnected intake hose, intake manifold gasket, or PCV hose
- 2 Contaminated or failing mass airflow (MAF) sensor sending inaccurate air readings
- 3 Weak or failing fuel pump delivering insufficient volume under demand
- 4 Clogged fuel filter restricting fuel flow during acceleration
- 5 Leaking intake manifold gasket allowing unmetered air into the engine
- 6 Faulty oxygen sensor (O2 sensor) providing incorrect feedback to the PCM
- 7 Exhaust leak before the oxygen sensor causing false lean readings

How to diagnose and fix it

- 1 Inspect all intake and vacuum hoses for cracks, loose clamps, or disconnected lines and repair as needed
- 2 Clean the mass airflow sensor with a dedicated MAF cleaner and verify its readings with a scan tool
- 3 Check fuel pressure and volume under load using a fuel pressure gauge; compare to GM specifications
- 4 Replace the fuel filter if it is restricted or has not been serviced at the recommended interval
- 5 Perform a smoke test on the intake system to locate hidden vacuum leaks
- 6 Test the oxygen sensors for proper switching and replace any that are slow or biased
- 7 Inspect the exhaust system for leaks upstream of the oxygen sensors and repair any found



What most technicians miss on P1171

- A dirty mass airflow sensor often causes this code without setting a MAF-specific trouble code, so cleaning it is a smart first step before replacing expensive parts.
- Fuel pump volume can be within specification at idle but drop off under acceleration, so a static fuel pressure test alone may not reveal the problem.
- Intake manifold gasket leaks on GM V6 and V8 engines are common and can be intermittent, only showing up when the engine is cold or under certain load conditions.
- An exhaust leak before the oxygen sensor can draw in outside air and trick the PCM into thinking the mixture is lean, leading to unnecessary fuel system repairs.
- This code does not always mean a failed component; a loose or improperly seated oil dipstick or oil filler cap can create a vacuum leak on some GM engines.

Can I keep driving with P1171?

You can drive the vehicle short distances to a repair shop, but avoid hard acceleration and heavy loads because the lean condition can cause overheating and potential engine damage. If the check engine light begins flashing, stop driving immediately and have the vehicle towed.

Tools that help

- OBD-II scan tool with live data capability
- Fuel pressure gauge
- Smoke machine for intake leak detection
- MAF sensor cleaner
- Vacuum gauge
- Basic hand tools (screwdrivers, pliers, socket set)

Reading P1171

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (GM): its meaning depends on the make.
1	Fuel and air metering.
71	The exact fault within that area.

Often seen with

P0101 Mass/Volume Air Flow Circuit Range/Performance · **P0131** O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1) · **P0171** System Too Lean (Bank 1) · **P0174** System Too Lean (Bank 2) · **P0300** Random/Multiple Cylinder Misfire Detected



See it working

Watch the animated explainer [How a Refrigerator Works: The Cooling Cycle](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1171/>

