Service Bulletin

Bulletin No.: 17-NA-134
Date: August, 2019

INFORMATION

Subject: Information on Poor DEF Quality Message Displayed on Driver Information Center (DIC) and/or Malfunction Indicator Lamp (MIL) Illuminated - DTCs P249D, P249E

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Colorado	2016	2020			LWN	
GMC	Canyon						

Involved Region or Country	North America
Condition	Some customers may comment on one or more of the following conditions: • DEF Quality Message displayed on the DIC • MIL illuminated The technician may find one or more of the following DTCs set: • P249D • P249E
Information	**Important:** Starting in 2019, vehicles now use a DEF quality sensor that is in the DEF tank. The DEF quality sensor is the only thing that turns on the Exhaust Quality Poor message and not the NOx Catalyst Reductant-Load Adaptive Value. The NOx Catalyst Reductant-Load Adaptive Value can be found in the Reductant System Data list in GDS2. This feature is the ECM's way to "close the loop" on the selective catalyst reduction system (SCR system). The SCR system consists of the Diesel Exhaust Fluid, DEF dosing hardware (Emission Reduction Fluid Injector, Emission Reduction Fluid Exhaust Front Pipe Injector Supply Pipe, Emission Reduction Fluid Tank, Emission Reduction Fluid Supply Pump Module, and Emission Reduction Fluid Controller), and the SCR. The SCR system removes the NOx (Nitrogen Oxides) from the vehicles exhaust under various conditions. The ECM measures this reduction by looking at the NOx 1 and NOx 2 sensor readings. The ECM also looks at other sensors to predict what the NOx reduction should be. Certain things can influence how the system works, tolerances on sensors (Mass Airflow Sensor, Nitrogen Oxides Sensor, Emission Reduction Fluid Injector, Exhaust Temperature Sensor, etc.), Exhaust piping, SCR brick, etc. Also intake or exhaust leaks can impact the performance of the SCR system. Under proper conditions the system will "adapt" when it sees an error in the predicted downstream NOx as compared to the actual downstream sensor reading. If a large enough error is measured between the two calculations over a time period, the NOx Catalyst Reductant-Load Adaptive Value changes to account for this. If the DEF injector is in tolerance, but is injecting on the low side of the spec, eventually the system would be under loaded (not enough DEF on the SCR) and there will be an error between the model (or the predicted NOx 2 reading) and the measured NOx2 sensor. ⇒ The NOx Catalyst Reductant-Load Adaptive Value will adapt to a value larger than one, (example 1.1). So when DEF dosing is requested, it will be multiplied by the NOx Catalyst Reductant-Load Adaptive Value factor or 1.1. If the NOx Catalyst Reductant-Load Adaptive Value reaches 1.45, it will turn on the Exhaust Fluid Quality Poor message. If the NOx Catalyst Reductant-Load Adaptive Value is below 0.4 or above 1.7, code P249D or P249E will set.

Parts Information

No parts are required for this repair.

Version	3
Modified	Revised July 25, 2018 - Added 2018-2019 to Model Years. Revised July 29, 2019 - Added the Important statement in the information section and updated model year to 2020.