Service Bulletin

Bulletin No.: 24-NA-225

Date: October, 2024

INFORMATION

Subject: Information on Fuel Contamination, Poor Engine Performance, No Start, Malfunction Indicator Lamp (MIL) Illuminated - Multiple DTCs Set

Brand:	Model:	Model Year:		Build Date:		Engine:	Transmission:
		from	to	from	to		
Cadillac	Escalade Models	2021	2024			LM2, LUZ, LH7, L5P, LZ0, L5D,	
Chevrolet	Cruze	2014	2019				
	Equinox	2018	2019				
	Silverado	2017	2018				
	Silverado 1500 (New Model)	2019	2019				
	Silverado 1500	2020	2021				
	Silverado 1500 LTD (RPO J21, VIN Digit 5 = W / Y)	2022	2022				
	Silverado 1500 New (RPO J22, VIN Digit 5 = A / D)						
	Silverado 1500	2023	2025				
	Silverado 2500 HD/ 3500 HD	2017	2025				
	Suburban	2021	2025				
	Tahoe						
GMC	Sierra	2017	2018				
	Sierra 1500 (New Model)	2019	2019				
	Sierra 1500	2020	2021				
	Sierra 1500 Limited (RPO J21, VIN Digit 5 = 8/9)	2022	2022				
	Sierra 1500 New (RPO J22, VIN Digit 5 = H/U)						
	Sierra 1500	2023	2025				
	Sierra 2500 HD/ 3500 HD	2017	2025				
	Terrain	2018	2019				
	Yukon Models	2021	2025				

Involved Region or Country	United States, Canada, Middle East, Israel, Palestine, Chile (West), Paraguay (West), Thailand (ASEAN), Australia/New Zealand, North America
Condition	Some customers may comment on one or more of the following conditions: • MIL illuminated • Poor engine performance • No start Customer may complain of a MIL on the DIC, the vehicle running poorly, or a no start condition. Some technicians may comment on one or more of the following DTCs set: • P0087: Fuel Rail Low pressure • P0171: Fuel System Lean • P0172: Fuel System Rich • P026D: Injection Quantity TOO High • P0300: Engine Misfire Detected • P0461: Fuel Level Sensor Performance • P0463: Fuel Level Sensor Circuit High Voltage • P1029: Fuel Pump Motor Phase IJ-V-W Circuits • P1089: Fuel Rail Pressure Performance During Deceleration Fuel Cut-Off • P129F: Fuel Pump Power Control Module Fuel Pump Speed Signal Incorrect • P2264: Water in Fuel Sensor Circuit • P228A: Fuel Pressure Regulator 1 Control - Forced Engine Shutdown • P228B: Fuel Pressure Regulator 2 Control - Forced Engine Shutdown • P228C: Fuel Pressure Regulator 1 Control Performance Low Pressure • P228D: Fuel Pressure Regulator I Control Performance High Pressure • P2A00: H02S Performance Sensor 1
Information	Perform the following fuel sample procedure prior to performing further diagnostics.

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Fuel Sample Analysis

DO NOT remove the fuel filter. A fuel sample must be collected from the fuel filter water drain.

Here are some of the tools to help determine if a vehicle has contaminated fuel:

1. Test for Diesel Exhaust Fluid (DEF) or water in the fuel.
2. Test the Specific Gravity (API) of the fuel.
3. Visually inspect the fuel sample for color and clarity.
4. Look for any separation of the fuel.
5. Test for gasoline.

Water-in-Fuel Draining (Collecting a Fuel Sample)

1. Install GDS2 so you can activate the fuel tank fuel pump when collecting the fuel sample.
2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.

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3. Clean the water separator drain area of the fuel filter assembly.
4. Place an approved fuel-resistant container under the fuel filter.
5. Open the fuel filter drain plug (1) to drain the water-contaminated fuel until 1 liter (0.946 quart) diesel fuel has been collected. It may be necessary to turn on the fuel tank fuel pump to collect this sample.
6. Tighten the fuel filter drain plug (1). Refer to Fastener Specifications.
7. Prime the fuel system. Refer to Fuel System Priming.
8. Remove the container.

Test for DEF or Water in Fuel

1. Place the sample container on a level surface for 1 min

Note:

- Diesel Exhaust Fluid (DEF) or water will be clear in color and sink below the diesel fuel at the bottom of the container.
- Since we are collecting a sample from the water drain on the fuel filter assembly, some small amount of water is expected.

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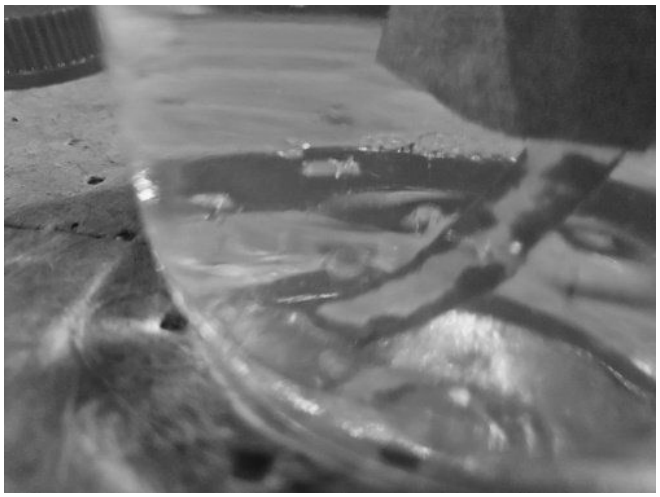
2. If you find DEF or Water at the bottom of the sample container, continue to next step (If you do not see water or DEF, continue to the Fuel Specific Gravity Testing section).

Note: Bend the Litmus paper lengthwise and use a pair of Needle Nose pliers to direct the Litmus paper to the Water or DEF.



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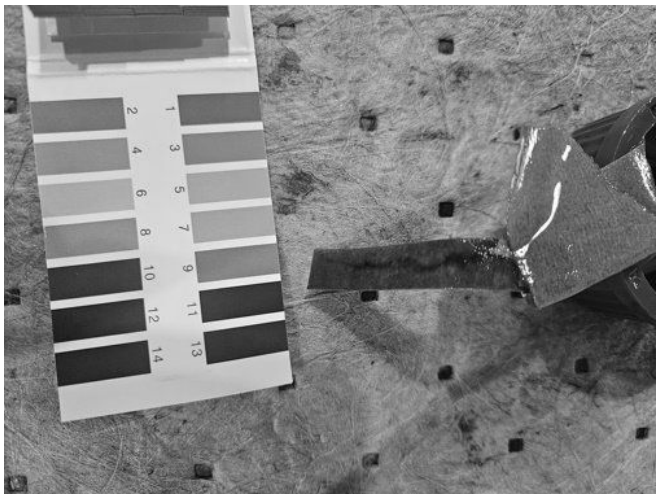
3. Insert Litmus Paper into the Bottom of the container for 10 to 15s.

Note: Litmus paper will start to lose its pigmentation as it dries, and will not accurately detect the presents of DEF. A fresh sample might be needed to show the customer.



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4. Remove the Litmus Paper.
5. Compare the color of the litmus paper to the supplied color scale. Within 1 minute.
6. If the level is 10 pH or greater, this indicates DEF is in the sample.
7. If the level is less than 10 pH, there is no DEF in the sample.

Fuel Specific Gravity Testing

Diesel Fuel American Petroleum Institute (API) Gravity Requirement

Note: The fuel quality hydrometer provides a general indication of fuel quality and should not be considered scientifically accurate.

Specification	No. 2 Diesel with up to 20% Bio-diesel	No. 2 Diesel	No. 1 Diesel	R99 Diesel
Specific Gravity	34–38	35–39	40–44	47–51

Fuel Specific Gravity Test

1. Use the sample above for the following test.
2. Obtain a *J 38641-B* Diesel Fuel Quality Tester.
3. Fill the hydrometer with the fuel sample by doing the following:
   - 3.1. Squeeze the hydrometer bulb.
   - 3.2. Submerse the hydrometer tip into the sample.
   - 3.3. Release the bulb, allowing fuel to enter the glass tube until the fuel completely floats the glass bulb inside the tube.
   - 3.4. Gently spin the hydrometer to relieve the surface tension of the fuel sample. Read the scale on the glass bulb at the point where the top of the fuel sample contacts the scale. This value will give an approximate fuel oil specific gravity.
4. Any sample above 45 that is not renewable diesel should be tested for gasoline below.

Cloudy Looking Fuel

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Cloudy looking fuel is usually an indication that there is water in the fuel. Again, a small amount of water in the fuel is expected due to the location that we took the sample. Let it sit until the water separates. If this fuel does not look like the fuel available in your region and it is cloudy, this could be an indication that the sample is contaminated. Further testing may be necessary.

Sediment Settling or Different Layers

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Note: If there is a small amount of water in this sample, it is normal.

This fuel sample was removed from the water drain of the fuel system. The sample was taken from the clean side of the fuel filter, so if there is any sediment in the sample, the fuel filter is no longer doing its job. It was likely torn, or the fuel filter was not installed properly the last time that it was changed. It was discussed previously about water or DEF separation, but if there is different separation of the fuel. This would indicate that the fuel is contaminated.

Styrofoam Cup Test

This is a test to use if you suspect that gasoline was added to the fuel tank. Place the sample into a Styrofoam cup and place the cup in an approved fuel container. Fuel contaminated with gasoline will melt the Styrofoam cup within half an hour. B20 Biodiesel could also melt a Styrofoam cup but will take about an hour. Any amount of gasoline will melt the Styrofoam cup; however, it will not be an issue unless it melts the cup within a half hour.

Warranty Information

For vehicles repaired under the Bumper-to-Bumper coverage (Canada Base Warranty coverage), use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
4089358*	Collect and Evaluate Fuel Sample	0.5 hr
*This is a unique Labor Operation for Bulletin use only.		

Version	1
Modified	Released October 14, 2024