

Certification Summary Information Report

Manufacturer	General Motors LLC	Manufacturer Code	GMX
Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Certificate Number	VGMXD04.3170-012	CARB Executive Order #	--
Certificate Issue Date	07/07/2026	Certificate Revision Date	--
Certificate Effective Date	07/07/2026	Conditional Certificate	No
CSI Revision #	--	CSI Submission/Revision Date	05/27/2026 11:40:45 AM
Model Year	2027		

Test Group Information

CSI Type	Update for Correction	Running Change Reference Number	--
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	M6, HDV1
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	No
Durability Group Name	VGMXGPGNNB51	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	Yes		
Introduction into Commerce Date	08/31/2026	CAP2000 Conditional Certificate?	No
Independent Commercial Importer?	No	Alternative Fuel Converter Certificate?	No
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	No
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VGMXD04.3170
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	LV1 GMT610 FSV		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	05/15/2026 08:03:24 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	Multi-layer with HDPE and EVOH				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	HCA				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	214	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	Yes						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Leak Family Name	Applicability of Leak Family Requirements	Leak Family Standard (inches)	Leak Family Description				
VGMXF02176BB-LK1	50 State	0.02	--				
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
General Motors LLC	4 - GMC	59 - G3500 SAVANA 2WD CUTAWAY CH	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	8	Yes
General Motors LLC	3 - Chevrolet	59 - G3500 EXPRESS 2WD CUTAWAY CH	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	8	Yes
General Motors LLC	4 - GMC	59 - G3500 SAVANA 2WD CUTAWAY CH	Federal	2-Wheel Drive, Rear	Automatic	8	Yes
General Motors LLC	3 - Chevrolet	59 - G3500 EXPRESS 2WD CUTAWAY CH	Federal	2-Wheel Drive, Rear	Automatic	8	Yes
Engine Description							
Hybrid Type	--	Hybrid Description	--				
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	--				
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--				
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W30				
Number of Cylinders/Rotors	6	Mechanically Variable Compression Ratio Indicator	N				

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
After Treatment Device(s) (ATD)			
ATD Number	ATD Type	ATD Precious Metal	Substrate Material
1	Three-way catalyst	Palladium + Rhodium	Ceramic
2	Three-way catalyst	Palladium + Rhodium	Ceramic
3	Three-way catalyst	Palladium + Rhodium	Ceramic
Mfr After Treatment Device (ATD) Comments			
		--	
Direct Ozone Reduction (DOR) Device		Not Equipped	
Mfr Emission Control Device Comments		--	
Engine Configuration Number 1			
Engine Displacement (liters)	4.3	Engine Rated Horsepower	276
Number of Inlet Valves Per Cylinder	1	Number of Exhaust Valves Per Cylinder	1
Air Aspiration Method	Naturally Aspirated	Number of Air Aspiration Devices	0
Air Aspiration Device Configuration	--	Charge Air Cooler Type	N/A
Air Aspiration Drive Method(s)	--		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	cam phaser		
Variable Valve Lift?	No		
Variable Valve Lift System Description	--		
Number of Knock Sensors	2	Number of Air/Fuel Sensors	4
Air/Fuel Sensor # 1 Type	Heated oxygen	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--
Air/Fuel Sensor # 3 Type	Heated oxygen	Air/Fuel Sensor # 3 Description	--
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--
Closed Loop Air Injection System	--		
Air Injection Type	Not Applicable	Air Injection Type if 'Other'	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family		VGMXF02176BB			
Official Test Numbers											
Test Group							EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Fuel	FTP	US06	SC03	Cold CO	Highway						
Gasoline	RGMX10079965	RGMX10079967	RGMX10079968	--	RGMX10079966	--	228.2	--	286.1	--	

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Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB					
Emission Control Device Comments	G Van							
Manufacturer Test Vehicle Comments	4K CONFIG							
Test #	MGMX10064689	Test Procedure	23 - 2-day evap					
Exhaust Test # for this Evap Test	MGMX10064688	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	03/04/2020	Fuel	Gasoline					
Fuel Batch ID	--	Fuel Calibration Number	--					
Vehicle Class	N/A	DF Type	Mfr. Determined					
Verify Test Lab ID	Compliance and Certification							
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)							
Test Start Odometer Reading	3863	Odometer Units	M					
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--					
State of Charge Delta	No							
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No					
Test Results								
Test Result Name		Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)					
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)		0.3388	--					
Manufacturer Test Comments		4K EVF2 TEST						
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.3388	0	0.339	0.6	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3388	0	0.339	0.6	Pass

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB						
Test #	MGMX10064690	Test Procedure	34 - Federal fuel 3-day evap						
Exhaust Test # for this Evap Test	MGMX10064688	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	04/18/2020	Fuel	Gasoline						
Fuel Batch ID	--	Fuel Calibration Number	--						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	Compliance and Certification								
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)								
Test Start Odometer Reading	4003	Odometer Units	M						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	No								
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No						
Test Results									
<table border="1"> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.3862</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3862	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3862	--							
Manufacturer Test Comments									
4K EVF3 TEST									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.3862	0	0.386	0.6	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3862	0	0.386	0.6	Pass	

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Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB						
Test #	MGMX10064691	Test Procedure	32 - Federal Fuel Running Loss						
Exhaust Test # for this Evap Test	MGMX10064688	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	04/18/2020	Fuel	Gasoline						
Fuel Batch ID	--	Fuel Calibration Number	--						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	Compliance and Certification								
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)								
Test Start Odometer Reading	4003	Odometer Units	M						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	No								
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No						
Test Results									
<table border="1"> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.00018</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00018	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00018	--							
Manufacturer Test Comments									
4K EVFR TEST									
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0	0	0	0.05	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0	0	0	0.05	Pass	

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Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB					
Test #	MGMX10064692	Test Procedure	15 - Spitback					
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	04/07/2020	Fuel	Gasoline					
Fuel Batch ID	--	Fuel Calibration Number	--					
Vehicle Class	N/A	DF Type	Mfr. Determined					
Verify Test Lab ID	Compliance and Certification							
E10 Evaporative Test Measurement Method	--							
Test Start Odometer Reading	3968	Odometer Units	M					
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--					
State of Charge Delta	No							
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No					
Test Results								
Test Result Name		Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)					
SPITBACK (Spitback Hydrocarbon in grams)		0.24	--					
Manufacturer Test Comments								
4K SPITBACK TEST								
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	SPITBACK	0.24	0	0.2	1	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	SPITBACK	0.24	0	0.2	1	Pass

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB						
Emission Data Vehicle Information									
Vehicle ID / Configuration	43GGRVT785 / 0	Manufacturer Vehicle Configuration Number	1						
Original Test Group Name	RGMXD04.3170	Original Evaporative/Refueling Family	RGMXF02176BB						
Original Test Vehicle Model Year	2024								
Vehicle Model									
Represented Test Vehicle Make	CHEVROLET	Represented Test Vehicle Model	G3500 EXPRESS 2WD CUTAWAY CH						
Leak Family Details									
Leak Family Identifier	LK1	Leak Family Name	RGMXF02176BB-LK1						
Drive Sources and Fuel System Details									
	<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> </thead> <tbody> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> </tbody> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
Hybrid Indicator	No								
Multiple Fuel Storage	--	Multiple Fuel Combustion	--						
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--						
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--						
Off-board charge Capable Indicator	--								
Odometer Correction -- Initial	0	Odometer Correction Factor	1						
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles								
Odometer Correction Units	Miles								
Engine Code	1	Rated Horsepower	276						
Displacement (liters)	4.3								
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	0	Air Aspiration Device Configuration	--						
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Rear						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)						
Curb Weight (lbs)	7670	Equivalent Test Weight (pounds)	9000						
GVWR (lbs)	9900	N/V Ratio	25.3						
Axle Ratio	3.42								
Transmission Type	Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creep Gear	No						

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Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Test #	RGMX10079965	Test Procedure	31 - Federal fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/15/2023	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9322
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3971	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB																																																															
	<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>CO2 BAG 1 (Bag 1 Carbon Dioxide)</td><td>715.06</td><td>--</td></tr><tr><td>FE BAG 1 (Bag 1 Fuel Economy)</td><td>12.1</td><td>12.1</td></tr><tr><td>CO2 BAG 2 (Bag 2 Carbon Dioxide)</td><td>682.303</td><td>--</td></tr><tr><td>FE BAG 2 (Bag 2 Fuel Economy)</td><td>12.8</td><td>12.8</td></tr><tr><td>CO2 BAG 3 (Bag 3 Carbon Dioxide)</td><td>660.837</td><td>--</td></tr><tr><td>FE BAG 3 (Bag 3 Fuel Economy)</td><td>13.2</td><td>13.2</td></tr><tr><td>METHANE (CH4 - Methane)</td><td>0.022555</td><td>--</td></tr><tr><td>CO (Carbon Monoxide)</td><td>0.727858</td><td>--</td></tr><tr><td>METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)</td><td>0.01504</td><td>--</td></tr><tr><td>N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)</td><td>0.00481</td><td>--</td></tr><tr><td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td><td>0.05127</td><td>--</td></tr><tr><td>DT-EER (Drive Trace Energy Economy Rating)</td><td>-0.281878</td><td>--</td></tr><tr><td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td><td>0.249307</td><td>--</td></tr><tr><td>MFR FE (Manufacturer Fuel Economy)</td><td>12.7</td><td>12.7</td></tr><tr><td>NOX (Nitrogen Oxide)</td><td>0.036173</td><td>--</td></tr><tr><td>N2O (Nitrous Oxide)</td><td>0.0076051</td><td>--</td></tr><tr><td>HC-NM (Non-methane Hydrocarbon)</td><td>0.051192</td><td>--</td></tr><tr><td>NMOG (Non-methane organic gases)</td><td>0.056297</td><td>--</td></tr><tr><td>PM (Particulate Matter)</td><td>0.003383</td><td>--</td></tr><tr><td>HC-TOTAL (Total Hydrocarbon)</td><td>0.072313</td><td>--</td></tr></table>	Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	CO2 BAG 1 (Bag 1 Carbon Dioxide)	715.06	--	FE BAG 1 (Bag 1 Fuel Economy)	12.1	12.1	CO2 BAG 2 (Bag 2 Carbon Dioxide)	682.303	--	FE BAG 2 (Bag 2 Fuel Economy)	12.8	12.8	CO2 BAG 3 (Bag 3 Carbon Dioxide)	660.837	--	FE BAG 3 (Bag 3 Fuel Economy)	13.2	13.2	METHANE (CH4 - Methane)	0.022555	--	CO (Carbon Monoxide)	0.727858	--	METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)	0.01504	--	N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)	0.00481	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.05127	--	DT-EER (Drive Trace Energy Economy Rating)	-0.281878	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.249307	--	MFR FE (Manufacturer Fuel Economy)	12.7	12.7	NOX (Nitrogen Oxide)	0.036173	--	N2O (Nitrous Oxide)	0.0076051	--	HC-NM (Non-methane Hydrocarbon)	0.051192	--	NMOG (Non-methane organic gases)	0.056297	--	PM (Particulate Matter)	0.003383	--	HC-TOTAL (Total Hydrocarbon)	0.072313	--		
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		<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated CO2</th></tr><tr><td>Carbon dioxide</td><td>683.202</td><td>--</td></tr></table>	Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	683.202	--																																																										
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Manufacturer Test Comments	150K EMIS TEST																																																																	

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Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO	0.73	1	--	--	--	--	0.7	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO-COMP	1.36	1	--	--	--	--	1.4	12.0	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO2	999	1	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	METHANE	0.0226	1	--	--	--	--	0.023	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	N2O	0.0076	1	--	--	--	--	0.008	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0563	1	--	--	--	--	0.056	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.0925	1	--	--	--	--	0.092	0.170	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX-COMP	0.0705	1	--	--	--	--	0.07	0.450	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.0362	1	--	--	--	--	0.036	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	PM	0.0034	1	--	--	--	--	0.003	0.008	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	PM-COMP	0.0022	1	--	--	--	--	0.002	0.010	Pass
CA	150,000 miles	California LEV-III SULEV170	CO	0.73	1	--	--	--	--	0.7	4.2	Pass
CA	150,000 miles	California LEV-III SULEV170	CO-COMP	1.36	1	--	--	--	--	1.4	12.0	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0563	1	--	--	--	--	0.056	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.0925	1	--	--	--	--	0.092	0.170	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX-COMP	0.0705	1	--	--	--	--	0.07	0.450	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.0362	1	--	--	--	--	0.036	99.999	Pass

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	150,000 miles	California LEV-III SULEV170	PM	0.0034	1	--	--	--	--	0.003	0.008	Pass
CA	150,000 miles	California LEV-III SULEV170	PM-COMP	0.0022	1	--	--	--	--	0.002	0.010	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB																																																												
Test #	RGMX10079969	Test Procedure	31 - Federal fuel 3-day exhaust																																																												
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline																																																												
Test Date	04/02/2023	Fuel	Gasoline																																																												
Fuel Batch ID	000307	Fuel Calibration Number	9320																																																												
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined																																																												
Verify Test Lab ID	Compliance and Certification																																																														
E10 Evaporative Test Measurement Method	--																																																														
Test Start Odometer Reading	4108	Odometer Units	M																																																												
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																																												
State of Charge Delta	No																																																														
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																																																												
Test Results																																																															
<table><tr><th>Test Result Name</th><th>Unrounded Test Result</th><th>Verify Calculated FE Equivalent Value (miles per gallon)</th></tr><tr><td>CO2 BAG 1 (Bag 1 Carbon Dioxide)</td><td>724.114</td><td>--</td></tr><tr><td>FE BAG 1 (Bag 1 Fuel Economy)</td><td>12.2</td><td>12.2</td></tr><tr><td>CO2 BAG 2 (Bag 2 Carbon Dioxide)</td><td>687.601</td><td>--</td></tr><tr><td>FE BAG 2 (Bag 2 Fuel Economy)</td><td>13</td><td>13</td></tr><tr><td>CO2 BAG 3 (Bag 3 Carbon Dioxide)</td><td>671.474</td><td>--</td></tr><tr><td>FE BAG 3 (Bag 3 Fuel Economy)</td><td>13.3</td><td>13.3</td></tr><tr><td>METHANE (CH4 - Methane)</td><td>0.026236</td><td>--</td></tr><tr><td>CO (Carbon Monoxide)</td><td>0.708562</td><td>--</td></tr><tr><td>METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)</td><td>0.018325</td><td>--</td></tr><tr><td>N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)</td><td>0.00557</td><td>--</td></tr><tr><td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td><td>0.111886</td><td>--</td></tr><tr><td>DT-EER (Drive Trace Energy Economy Rating)</td><td>-0.170351</td><td>--</td></tr><tr><td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td><td>-0.015802</td><td>--</td></tr><tr><td>MFR FE (Manufacturer Fuel Economy)</td><td>12.9</td><td>12.9</td></tr><tr><td>NOX (Nitrogen Oxide)</td><td>0.026834</td><td>--</td></tr><tr><td>N2O (Nitrous Oxide)</td><td>0.005252</td><td>--</td></tr><tr><td>HC-NM (Non-methane Hydrocarbon)</td><td>0.046451</td><td>--</td></tr><tr><td>NMOG (Non-methane organic gases)</td><td>0.047854</td><td>--</td></tr><tr><td>HC-TOTAL (Total Hydrocarbon)</td><td>0.071684</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	CO2 BAG 1 (Bag 1 Carbon Dioxide)	724.114	--	FE BAG 1 (Bag 1 Fuel Economy)	12.2	12.2	CO2 BAG 2 (Bag 2 Carbon Dioxide)	687.601	--	FE BAG 2 (Bag 2 Fuel Economy)	13	13	CO2 BAG 3 (Bag 3 Carbon Dioxide)	671.474	--	FE BAG 3 (Bag 3 Fuel Economy)	13.3	13.3	METHANE (CH4 - Methane)	0.026236	--	CO (Carbon Monoxide)	0.708562	--	METHANE-COMB (Combined CH4 for HD 2b/3 vehicles only)	0.018325	--	N2O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)	0.00557	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.111886	--	DT-EER (Drive Trace Energy Economy Rating)	-0.170351	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.015802	--	MFR FE (Manufacturer Fuel Economy)	12.9	12.9	NOX (Nitrogen Oxide)	0.026834	--	N2O (Nitrous Oxide)	0.005252	--	HC-NM (Non-methane Hydrocarbon)	0.046451	--	NMOG (Non-methane organic gases)	0.047854	--	HC-TOTAL (Total Hydrocarbon)	0.071684	--
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Certification Summary Information Report

Test Group		VGMXD04.3170			Evaporative/Refueling Family				VGMXF02176BB			
		Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE						
		Carbon-Related Exhaust Emissions		692		692						
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		690.732		--						
Manufacturer Test Comments		150K EMIS TEST										
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO	0.71	1	--	--	--	--	0.7	4.2	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO2	692	1	--	--	0	--	692	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	METHANE	0.0262	1	--	--	--	--	0.026	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	N2O	0.0053	1	--	--	--	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0479	1	--	--	--	--	0.048	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.0747	1	--	--	--	--	0.075	0.170	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.0268	1	--	--	--	--	0.027	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	CO	0.71	1	--	--	--	--	0.7	4.2	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0479	1	--	--	--	--	0.048	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.0747	1	--	--	--	--	0.075	0.170	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.0268	1	--	--	--	--	0.027	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.												

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Test #	RGMX10079966	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/15/2023	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9322
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3982	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
METHANE (CH4 - Methane)	0.005775	--	
CO (Carbon Monoxide)	0.08746	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.929032	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.141676	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.04444	--	
MFR FE (Manufacturer Fuel Economy)	16.9	16.9	
NOX (Nitrogen Oxide)	0.004581	--	
N2O (Nitrous Oxide)	0.001387	--	
HC-NM (Non-methane Hydrocarbon)	0.000497	--	
NMOG (Non-methane organic gases)	0.000511	--	
HC-TOTAL (Total Hydrocarbon)	0.006051	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	516	999	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	515.801	--	
Manufacturer Test Comments	150K HWFE TEST		

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO2	999	1	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	METHANE	0.0058	1	--	--	--	--	0.006	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	N2O	0.0014	1	--	--	--	--	0.001	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0005	1	1.03	--	--	--	0	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.0051	1	--	--	--	--	0.005	0.170	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.0046	1	--	--	--	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0005	1	1.03	--	--	--	0	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.0051	1	--	--	--	--	0.005	0.170	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.0046	1	--	--	--	--	0.005	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB																																				
Test #	RGMX10079970	Test Procedure	3 - HWFE																																				
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline																																				
Test Date	03/28/2023	Fuel	Gasoline																																				
Fuel Batch ID	000307	Fuel Calibration Number	9320																																				
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined																																				
Verify Test Lab ID	Compliance and Certification																																						
E10 Evaporative Test Measurement Method	--																																						
Test Start Odometer Reading	4079	Odometer Units	M																																				
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																				
State of Charge Delta	No																																						
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																																				
Test Results																																							
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Carbon-Related Exhaust Emissions	530	530																																					
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated CO2</th> </tr> </thead> <tbody> <tr> <td>Carbon dioxide</td> <td>529.849</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	529.849	--																														
Test Result Name	Unrounded Test Result	Verify Calculated CO2																																					
Carbon dioxide	529.849	--																																					
Manufacturer Test Comments	150K EMIS TEST																																						

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO2	530	1	--	--	0	--	530	--	--
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	METHANE	0.0087	1	--	--	--	--	0.009	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	N2O	0.0059	1	--	--	--	--	0.006	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0018	1	1.03	--	--	--	0.002	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.0537	1	--	--	--	--	0.054	0.170	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.0519	1	--	--	--	--	0.052	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0018	1	1.03	--	--	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.0537	1	--	--	--	--	0.054	0.170	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.0519	1	--	--	--	--	0.052	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CO2 Emission name is a Verify-calculated value.

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Test #	RGMX10079967	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/18/2023	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9322
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4028	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	1289.81	--	
FE BAG 1 (Bag 1 Fuel Economy)	6.7	6.7	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	799.46	--	
FE BAG 2 (Bag 2 Fuel Economy)	10.9	10.9	
METHANE (CH4 - Methane)	0.010421	--	
CO (Carbon Monoxide)	3.12706	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-4.34953	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.3878	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-8.22906	--	
MFR FE (Manufacturer Fuel Economy)	9.5	9.5	
NOX (Nitrogen Oxide)	0.11664	--	
HC-NM (Non-methane Hydrocarbon)	0.007999	--	
NMOG (Non-methane organic gases)	0.008239	--	
PM (Particulate Matter)	0.00274	--	
HC-TOTAL (Total Hydrocarbon)	0.017552	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	908.319	--	
Manufacturer Test Comments	150K US06 TEST		

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO	3.13	1	--	--	--	--	3.1	99.9	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0082	1	1.03	--	--	--	0.008	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.1248	1	--	--	--	--	0.125	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.1166	1	--	--	--	--	0.117	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	PM	0.0027	1	--	--	--	--	0.003	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	CO	3.13	1	--	--	--	--	3.1	99.9	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0082	1	1.03	--	--	--	0.008	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.1248	1	--	--	--	--	0.125	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.1166	1	--	--	--	--	0.117	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	PM	0.0027	1	--	--	--	--	0.003	99.999	Pass

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB																																				
Test #	RGMX10079968	Test Procedure	95 - SC03																																				
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)																																				
Test Date	03/22/2023	Fuel	Gasoline																																				
Fuel Batch ID	000329	Fuel Calibration Number	9322																																				
Vehicle Class	HDV1 (Federal HD chassis Class 2b GVW 8501-10000), MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined																																				
Verify Test Lab ID	Compliance and Certification																																						
E10 Evaporative Test Measurement Method	--																																						
Test Start Odometer Reading	4028	Odometer Units	M																																				
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																																				
State of Charge Delta	No																																						
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																																				
Test Results																																							
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Manufacturer Test Comments	150K SC03 TEST																																						

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	CO	0.62	1	--	--	--	--	0.6	99.9	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG	0.0039	1	1.03	--	--	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NMOG+NOX	0.0086	1	--	--	--	--	0.009	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	NOX	0.0047	1	--	--	--	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 HD Class 2b Bin 170	PM	0.0008	1	--	--	--	--	0.001	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	CO	0.62	1	--	--	--	--	0.6	99.9	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG	0.0039	1	1.03	--	--	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NMOG+NOX	0.0086	1	--	--	--	--	0.009	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	NOX	0.0047	1	--	--	--	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III SULEV170	PM	0.0008	1	--	--	--	--	0.001	99.999	Pass

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Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB																														
Test #	RGMX10080602	Test Procedure	52 - Fed. fuel 50 F exh.																														
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)																														
Test Date	03/01/2023	Fuel	Gasoline																														
Fuel Batch ID	000329	Fuel Calibration Number	9322																														
Vehicle Class	MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)	DF Type	Mfr. Determined																														
Verify Test Lab ID	Compliance and Certification																																
E10 Evaporative Test Measurement Method	--																																
Test Start Odometer Reading	3908	Odometer Units	M																														
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--																														
State of Charge Delta	No																																
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																														
Test Results																																	
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Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																															
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Test Result Name	Unrounded Test Result	Verify Calculated CO2																															
Carbon dioxide	691.834	--																															
Manufacturer Test Comments	4K 50 DEG TEST																																

Certification Summary Information Report

Test Group		VGMXD04.3170				Evaporative/Refueling Family				VGMXF02176BB		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	4,000 miles	California LEV-III SULEV170	CO	0.62	1	--	--	--	--	0.6	4.2	Pass
CA	4,000 miles	California LEV-III SULEV170	NMOG	0.1201	1	--	--	--	--	0.12	99.999	Pass
CA	4,000 miles	California LEV-III SULEV170	NMOG+NOX	0.1511	1	--	--	--	--	0.151	0.340	Pass
CA	4,000 miles	California LEV-III SULEV170	NOX	0.031	1	--	--	--	--	0.031	99.999	Pass

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB					
Emission Data Vehicle Information								
Vehicle ID / Configuration	66CRLN1016 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	LGMXD06.6398	Original Evaporative/Refueling Family	LGMXR021260A					
Original Test Vehicle Model Year	2020							
Vehicle Model								
Represented Test Vehicle Make	CHEVROLET	Represented Test Vehicle Model	SILVERADO 2WD					
Leak Family Details								
Leak Family Identifier	LK1	Leak Family Name	LGMXR021260A-LK1					
Drive Sources and Fuel System Details								
	<table border="1"> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	
Drive Source and Fuel#	Drive Source	Fuel						
1	Combustion Engine	Gasoline						
Hybrid Indicator	No							
Multiple Fuel Storage	--	Multiple Fuel Combustion	--					
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--					
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--					
Off-board charge Capable Indicator	--							
Odometer Correction -- Initial	0	Odometer Correction Factor	1					
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles							
Odometer Correction Units	Miles							
Engine Code	10	Rated Horsepower	397					
Displacement (liters)	6.6							
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'	NATURALLY ASPIRATED					
Number of Air Aspiration Devices	0	Air Aspiration Device Configuration	--					
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Rear					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)					
Curb Weight (lbs)	6761	Equivalent Test Weight (pounds)	8500					
GVWR (lbs)	10350	N/V Ratio	25.2					
Axle Ratio	3.73							
Transmission Type	Automatic	# of Transmission Gears	6					
Transmission Lockup	Yes	Creep Gear	No					
Dynamometer Coefficients:								
	Target Coefficients		Set Coefficients					
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
City/Highway/Evap	51.11	0.951	0.03706					
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
	18.41	0.3652	0.03933					
	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients							
	25.5							
Emission Control Device Comments	--							

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB						
Manufacturer Test Vehicle Comments	--								
Test #	LGMX10057630	Test Procedure	65 - Evap Canister Bleed Test						
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	12/15/2018	Fuel	Gasoline						
Fuel Batch ID	--	Fuel Calibration Number	--						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	Compliance and Certification								
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)								
Test Start Odometer Reading	3992	Odometer Units	M						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	No								
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No						
Test Results									
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Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL (Total Hydrocarbon)	0.0183	--							
Manufacturer Test Comments	4K CBLD TEST								
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail	
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL	0.0183	0	0.018	0.03	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.0183	0	0.018	0.03	Pass	

Certification Summary Information Report

Test Group	VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Fuel Properties			
Fuel Batch ID	000329	Fuel Calibration Number	9322
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	10/17/2022
Fuel Batch Calibration Effective Date	10/17/2022	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.745
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17787
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.828	Weight Fraction CO2	--
Fuel Batch ID	000307	Fuel Calibration Number	9320
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	10/10/2022
Fuel Batch Calibration Effective Date	10/10/2022	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.744
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18427
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VGMXD04.3170			Evaporative/Refueling Family			VGMXF02176BB	
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 170	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	4.2
150,000 miles	CO-COMP	--	1	--	--	--	--	--	12.0
150,000 miles	CO2	--	1	--	--	--	--	0	999.999
150,000 miles	METHANE	--	1	--	--	--	--	--	99.999
150,000 miles	N2O	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.170
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.450
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.008
150,000 miles	PM-COMP	--	1	--	--	--	--	--	0.010
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 170	
Fuel		Gasoline			Test Procedure			SC03	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	99.9
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	99.999
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	99.999

Certification Summary Information Report

Test Group		VGMXD04.3170			Evaporative/Refueling Family			VGMXF02176BB	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)			Standard Level			California LEV-III SULEV170	
Fuel		Gasoline			Test Procedure			SC03	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	99.9
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	99.999
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	99.999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 170	
Fuel		Gasoline			Test Procedure			HWFE	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO2	--	1	--	--	--	--	0	999.999
150,000 miles	METHANE	--	1	--	--	--	--	--	99.999
150,000 miles	N2O	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.170
150,000 miles	NOX	--	1	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)			Standard Level			California LEV-III SULEV170	
Fuel		Gasoline			Test Procedure			HWFE	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.170
150,000 miles	NOX	--	1	--	--	--	--	--	99.999

Certification Summary Information Report

Test Group		VGMXD04.3170			Evaporative/Refueling Family			VGMXF02176BB	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)			Standard Level			California LEV-III SULEV170	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	99.9
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	99.999
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)			Standard Level			California LEV-III SULEV170	
Fuel		Gasoline			Test Procedure			Federal fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	4.2
150,000 miles	CO-COMP	--	1	--	--	--	--	--	12.0
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.170
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.450
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.008
150,000 miles	PM-COMP	--	1	--	--	--	--	--	0.010

Certification Summary Information Report

Test Group		VGMXD04.3170			Evaporative/Refueling Family			VGMXF02176BB	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		HDV1 (Federal HD chassis Class 2b GVW 8501-10000)			Standard Level			Federal Tier 3 HD Class 2b Bin 170	
Fuel		Gasoline			Test Procedure			US06	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	1	--	--	--	--	--	99.9
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	99.999
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		MDV6 (Cal. LEV 2/3/4 MDV GVW 8501-10000)			Standard Level			California LEV-III SULEV170	
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
4,000 miles	CO	--	1	--	--	--	--	--	4.2
4,000 miles	NMOG	--	1	--	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.340
4,000 miles	NOX	--	1	--	--	--	--	--	99.999

Evaporative/Refueling Standards

Evaporative/Refueling Family		VGMXF02176BB		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0		

Evaporative/Refueling Family		VGMXF02176BB		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0		

Certification Summary Information Report

Test Group		VGMXD04.3170		Evaporative/Refueling Family		VGMXF02176BB	
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Spitback					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	SPITBACK	--	1.0	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.030	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.030	0		

Certification Summary Information Report

Test Group		VGMXD04.3170		Evaporative/Refueling Family		VGMXF02176BB	
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Spitback					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	SPITBACK	--	1.0	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0		
Evaporative/Refueling Family		VGMXF02176BB		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.600	0		

Certification Summary Information Report

Test Group		VGMXD04.3170	Evaporative/Refueling Family	VGMXF02176BB
Glossary				
Useful Life				
4	4,000 miles	120	120,000 miles	
50	50,000 miles	150	150,000 miles	
100	100,000 miles			
Emission Name				
HC-TOTAL	Total Hydrocarbon	COMB-CREE	Combined Carbon-Related Exhaust Emissions	
CO	Carbon Monoxide	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions	
CO2	Carbon dioxide	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only	
CREE	Carbon-Related Exhaust Emissions	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only	
OPT-CREE	Optional Carbon-Related Exhaust Emissions	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only	
NOX	Nitrogen Oxide	LEAK-DIA	Effective Leak Diameter (inches)	
PM	Particulate Matter	LEAK-GAS CAP	Gas Cap Leakage (cc/min)	
PM-COMP	SFTP Composite Particulate Matter	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
HC-NM	Non-methane Hydrocarbon	KW-HRS	Integrated DC KW-HRS	
OMHCE	Organic material Hydrocarbon Equivalent	CH4 BAG 1	Bag 1 Methane	
OMNMHCE	Organic material non-methane HC equivalent	CH4 BAG 2	Bag 2 Methane	
NMOG	Non-methane organic gases	CH4 BAG 3	Bag 3 Methane	
HCHO	Formaldehyde	CH4 BAG 4	Bag 4 Methane	
H3C2HO	Acetaldehyde	CO BAG 1	Bag 1 Carbon Monoxide	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	CO BAG 2	Bag 2 Carbon Monoxide	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	CO BAG 3	Bag 3 Carbon Monoxide	
CO-COMP	SFTP Composite Carbon Monoxide	CO BAG 4	Bag 4 Carbon Monoxide	
ETHANOL	C2H5OH - Ethanol	NMOG BAG 1	Bag 1 Non-methane organic gases	
FE BAG 1	Bag 1 Fuel Economy	NMOG BAG 2	Bag 2 Non-methane organic gases	
FE BAG 2	Bag 2 Fuel Economy	NMOG BAG 3	Bag 3 Non-methane organic gases	
FE BAG 3	Bag 3 Fuel Economy	NMOG BAG 4	Bag 4 Non-methane organic gases	
FE BAG 4	Bag 4 Fuel Economy	ACT-DISTANCE BAG 1	Bag 1 Actual Distance	
MFR FE	Manufacturer Fuel Economy	ACT-DISTANCE BAG 2	Bag 2 Actual Distance	
HC	Hydrocarbon for Running Loss and ORVR	ACT-DISTANCE BAG 3	Bag 3 Actual Distance	
METHANE	CH4 - Methane	ACT-DISTANCE BAG 4	Bag 4 Actual Distance	
METHANOL	CH3OH - Methanol	HC-TOTAL BAG 1	Bag 1 Total Hydrocarbon	
N2O	Nitrous Oxide	HC-TOTAL BAG 2	Bag 2 Total Hydrocarbon	
SPITBACK	Spitback Hydrocarbon in grams	HC-TOTAL BAG 3	Bag 3 Total Hydrocarbon	
AMP-HRS	Integrated Amp-hours	HC-TOTAL BAG 4	Bag 4 Total Hydrocarbon	
START-SOC	System Start State of Charge Watt-hours	WATT-HRS BAG 1	Bag 1 Watt Hours	
END-SOC	System End State of Charge Watt-hours	WATT-HRS BAG 2	Bag 2 Watt Hours	

Certification Summary Information Report

Test Group		VGMXD04.3170	Evaporative/Refueling Family		VGMXF02176BB
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

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Test Group		VGMXD04.3170	Evaporative/Refueling Family		VGMXF02176BB
L2ULEV340	California LEV-II ULEV340		L4SULEV85	California LEV-IV SULEV85	
L2LEV630	California LEV-II LEV630		L4ULEV125	California LEV-IV ULEV125	
L2ULEV570	California LEV-II ULEV570		L4ULEV200	California LEV-IV ULEV200	
L3LEV160	California LEV-III LEV160		L4ULEV250	California LEV-IV ULEV250	
L3ULEV125	California LEV-III ULEV125		L4ULEV270	California LEV-IV ULEV270	
L3ULEV70	California LEV-III ULEV70		L4ULEV40	California LEV-IV ULEV40	
L3ULEV50	California LEV-III ULEV50		L4ULEV400	California LEV-IV ULEV400	
L3SULEV30	California LEV-III SULEV30		L4ULEV50	California LEV-IV ULEV50	
L3SULEV20	California LEV-III SULEV20		L4ULEV60	California LEV-IV ULEV60	
L3LEV395	California LEV-III LEV395		L4ULEV70	California LEV-IV ULEV70	
L3ULEV340	California LEV-III ULEV340		T4B170	Federal Tier 4 MDV Bin 170	
L3ULEV250	California LEV-III ULEV250		T4B150	Federal Tier 4 MDV Bin 150	
L3ULEV200	California LEV-III ULEV200		T4B125	Federal Tier 4 MDV Bin 125	
L3SULEV170	California LEV-III SULEV170		T4B100	Federal Tier 4 MDV Bin 100	
L3SULEV150	California LEV-III SULEV150		T4B85	Federal Tier 4 MDV Bin 85	
L3LEV630	California LEV-III LEV630		T4B75	Federal Tier 4 MDV Bin 75	
L3ULEV570	California LEV-III ULEV570		T4B70	Federal Tier 4 Bin 70	
L3ULEV400	California LEV-III ULEV400		T4B65	Federal Tier 4 Bin 65	
L3ULEV270	California LEV-III ULEV270		T4B60	Federal Tier 4 Bin 60	
L3SULEV230	California LEV-III SULEV230		T4B55	Federal Tier 4 Bin 55	
L3SULEV200	California LEV-III SULEV200		T4B50	Federal Tier 4 Bin 50	
T3B160	Federal Tier 3 Bin 160		T4B45	Federal Tier 4 Bin 45	
T3B125	Federal Tier 3 Bin 125		T4B40	Federal Tier 4 Bin 40	
T3B110	Federal Tier 3 Transitional Bin 110		T4B35	Federal Tier 4 Bin 35	
T3B85	Federal Tier 3 Transitional Bin 85		T4B30	Federal Tier 4 Bin 30	
T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover		T4B25	Federal Tier 4 Bin 25	
T3B70	Federal Tier 3 Bin 70		T4B20	Federal Tier 4 Bin 20	
T3B50	Federal Tier 3 Bin 50		T4B15	Federal Tier 4 Bin 15	
T3B30	Federal Tier 3 Bin 30		T4B10	Federal Tier 4 Bin 10	
T3B20	Federal Tier 3 Bin 20		T4B5	Federal Tier 4 Bin 5	
T3B0	Federal Tier 3 Bin 0		T4B0	Federal Tier 4 Bin 0	
HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395				
Transmission Type Code					
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual		
A	Automatic	OT	Other		
AM	Automated Manual	SA	Semi-Automatic		
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)		
Drive System Code					
4	4-Wheel Drive	P	Part-time 4-Wheel Drive		

Certification Summary Information Report

Test Group		VGMXD04.3170	Evaporative/Refueling Family		VGMXF02176BB
F	2-Wheel Drive, Front		A	All Wheel Drive	
R	2-Wheel Drive, Rear				
Additional Terms and Acronyms					
AFC	Alternative Fuel Converter		ICI	Independent Commercial Importer	
CSI	Certificate Summary Information		ORVR	Onboard Refueling Vapor Recovery	
DF	Deterioration Factor		SIL	Shift Indicator Light	
Evap	Evaporation, Evaporative		Trans	Transmission	