

APPLICATION FOR CERTIFICATION

2027 MODEL YEAR

Durability Group:	VGMXGPGNNB60
Test Group:	VGMXT05.3330
Summary Sheet No:	Delete from App Tables
Durability Group Description:	Four Stroke, Otto Cycle, Gasoline Fueled, DFI, Ceramic Monolith Pt/Pd/Rh Catalyst
Durability Vehicle:	NA - Aged Components
OBD Group:	VGMXOBDG03B
Test Group Description:	5.3L V8
Applicable Standards:	California TRUCK Federal LDT3 Bin30/California LDT2 SULEV30
Carlines Covered by Evaporative Family:	5.3L Chevrolet TAHOE 2WD Chevrolet TAHOE 4WD GMC YUKON 2WD GMC YUKON 4WD VGMXR017350D 5.3L Chevrolet SUBURBAN 2WD Chevrolet SUBURBAN 4WD GMC YUKON XL 2WD GMC YUKON XL 4WD VGMXR022450C
Vehicles Tested:	53KLSVT449
For Questions, Contact:	C. Meadows (517/375-8240)

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Part 2

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TEST VEHICLE DESCRIPTION

	<u>Durability Vehicle Selection - NA</u>	<u>Emission-Data Vehicle Selection</u>
Test Group		VGMXT05.3330
Evaporative Family		VGMXR022450C
Displacement – Liters		5.3
Engine Code		60
Emission Control System		
Exhaust		DFI/2WR-HO2S/2TWC/2HO2S
Evap		C/CCP/IC
Model		CK10906
Transmission Type/Code		A10/18
Shift Schedule		NA
(LVW) Test Weight – Lbs		6500
GVWR		7700
Dyno Horsepower/Type		NA
Roadload HP		22.0
Final Drive		3.23
N/V Ratio – rpm/mph		21.6
Tires		275/60R20 QAE (GDY)
Vehicle/EPA Config No./GM Config No.		
FTP & HWFE		53KLSVT449/00/005
SFTP		53KLSVT449/00/005
20° CO		53KLSVT449/00/005

NOTE: For complete vehicle information, see vehicle information submitted in VERIFY database.

Data Vehicle Selection Justification – Highest TWC, highest RLHP, highest N/V ratio.

2027 EMISSION STANDARDS

BIN30 (LDT3)

TEST GROUP NAME: VGMXT05.3330

EVAPORATIVE FAMILY NAME(S): VGMXR022450C, VGMXR017350D

CERTIFICATION & IN-USE STANDARDS

LOW AND HIGH ALTITUDE:

	FTP TEST						
	Low Altitude NMOG+NOx	High Altitude NMOG+NOx	CO	HCHO	PM	CH4	N2O
120K STD	NA	NA	NA	NA	NA	0.030	0.010
150k STD	0.030	0.050	1.0	0.004	0.003	NA	NA

	HWY TEST		20 °F TEST	
	Low Altitude NMOG+NOx	High Altitude NMOG+NOx	CO	NMHC
50K STD	NA	NA	12.5	NA
120K STD	NA	NA	NA	0.5
150k STD	0.030	0.050	NA	NA

SFTP - LOW ALTITUDE:

	US06 PM	COMPOSITE* ¹ NMOG+NOx	COMPOSITE* ¹ CO
150K STD	0.006	0.050	4.2

*1 The calculation used for the composite results for NMOG+NOx, CO and PM = 35%FTP + 28%US06 + 37%SC03

86.1844(d)(7)-VGMXT05.3330

2027 EMISSION STANDARDS

LEV3 SULEV30 (LDT2>6000 GVW)

TEST GROUP NAME: VGMXT05.3330

EVAPORATIVE FAMILY NAME(S): VGMXR022450C, VGMXR017350D

CERTIFICATION & IN-USE STANDARDS

	FTP TEST				HWY TEST	20 °F TEST
	NMOG+NOx	CO	HCHO	PM	NMOG+NOx	CO
50K STD	NA	NA	NA	NA	NA	12.5
150K STD (Low)	0.030	1.0	0.004	0.003	0.030	NA
150K STD (High)	0.050	1.0	0.004	0.003	0.050	

SFTP - LOW ALTITUDE:

	US06 PM	COMPOSITE* ¹ NMOG+NOx	COMPOSITE* ¹ CO
150K STD	0.006	0.050	4.2

50 °F TEST:

	NMOG+NOx	CO	HCHO
4K E10 STD	0.060	1.0	0.008

*1 The calculation used for the composite results for NMOG+NOx, CO and PM = 35%FTP + 28%US06 + 37%SC03

Note: Standards apply at Low and High Altitudes unless otherwise noted.

86.1844(d)(7)-VGMXT05.3330

Litmus Test

Test Group	Test Vehicle #	Config #	Vehicle Run # (s)	City				Highway				Minimum Required Calculation	Status
				5-Cycle Derived	5-Cycle Calc	Threshold	Result	5-Cycle Derived	5-Cycle Calc	Threshold	Result		
VGMXT05.3330	53KLSVT449	005	1,2,3,4,6	14.3609	13.7	13.8	Fail	18.8752	17.5	17.9	Fail	5 Cycle Calculated (EMIS, HWFE, COLD, US06, SC03)	OFFICIAL

Close

Certification Summary Information Report

Manufacturer	General Motors LLC	Manufacturer Code	GMX
Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	07/28/2026 11:08:23 AM
Model Year	2027		

Test Group Information

CSI Type	New	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	LDT3
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	VGMXGPGNNB60	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
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	VGMXT05.3330
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	L84 (5.3) Gas FST: LDPU & SUV BIN30/SULEV30 150K		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	06/11/2026 02:41:42 PM				
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)	220	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				
VGMXR022450C-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	3 - Chevrolet	66 - SUBURBAN 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	82 - SUBURBAN 4WD	California + CAA Section 177 states	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	4 - GMC	55 - YUKON XL 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	66 - SUBURBAN 2WD	Federal	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	4 - GMC	55 - YUKON XL 2WD	Federal	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	4 - GMC	63 - YUKON XL 4WD	California + CAA Section 177 states	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	4 - GMC	63 - YUKON XL 4WD	Federal	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	82 - SUBURBAN 4WD	Federal	4-Wheel Drive	Automatic	10	Yes

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C	
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	0W20	
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N	
After Treatment Device(s) (ATD)				
ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Platinum + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
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)	5.3	Engine Rated Horsepower	355	
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	Yes			
Cylinder Deactivation Description	Dynamic Fuel Management			
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		VGMXT05.3330				Evaporative/Refueling Family		VGMXR022450C			
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	SGMX10086373	SGMX10086375	SGMX10086382	SGMX10086378	SGMX10086374	13.7	228.2	20.7	286.1	--	

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Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C					
Manufacturer Test Vehicle Comments	ADDED 250 LBS BALLAST TO REAR AXLE AND REDUCED TIRE PRESSURE TO 32 PSI TO PREVENT WHEEL SLIP.							
Test #	KGMX10055636	Test Procedure	23 - 2-day evap					
Exhaust Test # for this Evap Test	KGMX10055635	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	06/23/2018	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	4597	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)		0.4646	--					
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	0.4646	0.0000	0.465	0.525	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.4646	0.0000	0.465	0.525	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C						
Test #	KGMX10055638	Test Procedure	34 - Federal fuel 3-day evap						
Exhaust Test # for this Evap Test	KGMX10055635	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	08/11/2018	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	4764	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>0.314</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)	0.314	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.314	--							
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	0.3140	0.0000	0.314	0.525	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3140	0.0000	0.314	0.525	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C					
Test #	KGMX10055637	Test Procedure	24 - Federal fuel refueling test (ORVR)					
Exhaust Test # for this Evap Test	KGMX10055635	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	08/06/2018	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	4744	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)		0.0184	--					
Manufacturer Test Comments 4K ORVR 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	0.018	0.000	0.02	0.20	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.018	0.000	0.02	0.20	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C						
Test #	KGMX10055639	Test Procedure	32 - Federal Fuel Running Loss						
Exhaust Test # for this Evap Test	KGMX10055635	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	08/01/2018	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	4801	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>0.00066</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)	0.00066	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00066	--							
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	0.001	0.000	0.00	0.05	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.001	0.000	0.00	0.05	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C						
Test #	KGMX10055693	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	05/22/2018	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	4801	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 (Total Hydrocarbon)</td> <td>0.012</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL (Total Hydrocarbon)	0.012	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL (Total Hydrocarbon)	0.012	--							
Manufacturer Test Comments 150K 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	0.0120	0.000	0.012	0.020	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.0120	0.000	0.012	0.020	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C						
Emission Data Vehicle Information									
Vehicle ID / Configuration	53KLSVT449 / 0	Manufacturer Vehicle Configuration Number	1						
Original Test Group Name	SGMXT05.3330	Original Evaporative/Refueling Family	SGMXR022450C						
Original Test Vehicle Model Year	2025								
Vehicle Model									
Represented Test Vehicle Make	CHEVROLET	Represented Test Vehicle Model	SUBURBAN 4WD						
Leak Family Details									
Leak Family Identifier	LK1	Leak Family Name	SGMXR022450C-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	30	Rated Horsepower	355						
Displacement (liters)	5.3								
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	All Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)						
Curb Weight (lbs)	6082	Equivalent Test Weight (pounds)	6500						
GVWR (lbs)	7700	N/V Ratio	21.6						
Axle Ratio	3.23								
Transmission Type	Automatic	# of Transmission Gears	10						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family		VGMXR022450C	
Dynamometer Coefficients:								
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	45.16	0.7546	0.0327	-1.01	0.0374	0.03436	22	
Cold CO	49.68	0.8301	0.03597	-7.43	-0.6984	0.04307	N/A	
US06	45.16	0.7546	0.0327	-1.01	0.0374	0.03436	N/A	
Emission Control Device Comments		L84 10spd SUV (3-mode)						
Manufacturer Test Vehicle Comments		REDUCED TIRE PRESSURE FROM 35 TO 32 PSI TO PREVENT WHEEL SLIP. RWD MUST BE TESTED ON AWD DYNO WITH ROAD SPEED FAN. 150K CONFIG.						

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX10086373	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	04/29/2024	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9393
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4161	Odometer Units	M
4WD Test Dyno	Yes	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)	521.768	--
FE BAG 1 (Bag 1 Fuel Economy)	16.7	16.7
CO2 BAG 2 (Bag 2 Carbon Dioxide)	496.673	--
FE BAG 2 (Bag 2 Fuel Economy)	17.5	17.5
CO2 BAG 3 (Bag 3 Carbon Dioxide)	465.14	--
FE BAG 3 (Bag 3 Fuel Economy)	18.7	18.7
METHANE (CH4 - Methane)	0.010396	--
CO (Carbon Monoxide)	0.411839	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.641301	--
DT-EER (Drive Trace Energy Economy Rating)	-0.97186	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.28514	--
MFR FE (Manufacturer Fuel Economy)	17.7	17.7
NOX (Nitrogen Oxide)	0.004309	--
N2O (Nitrous Oxide)	0.000218	--
HC-NM (Non-methane Hydrocarbon)	0.006636	--
NMOG (Non-methane organic gases)	0.007301	--
PM (Particulate Matter)	0.000955	--
HC-TOTAL (Total Hydrocarbon)	0.016608	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	494	999

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C																				
<table><tr><td colspan="2">Test Result Name</td><td colspan="4">Unrounded Test Result</td><td colspan="3">Verify Calculated CO2</td></tr><tr><td colspan="2">Carbon dioxide</td><td colspan="4">493.202</td><td colspan="3">--</td></tr></table>													Test Result Name		Unrounded Test Result				Verify Calculated CO2			Carbon dioxide		493.202				--		
Test Result Name		Unrounded Test Result				Verify Calculated CO2																								
Carbon dioxide		493.202				--																								
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	120,000 miles	Federal Tier 3 Bin 30	CREE	999	1	--	--	0	--	999	--	--																		
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.41	1	--	--	--	--	0.4	1.0	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.66	1	--	--	--	--	0.7	4.2	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0073	1	--	--	--	--	0.007	99.999	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0116	1	--	--	--	--	0.012	0.030	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0234	1	--	--	--	--	0.023	0.050	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0043	1	--	--	--	--	0.004	99.999	Pass																		
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0010	1	--	--	--	--	0.001	0.003	Pass																		
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0104	1	--	--	--	--	0.010	0.030	Pass																		
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0002	1	--	--	--	--	0.000	0.010	Pass																		
CA	150,000 miles	California LEV-III SULEV30	CO	0.41	1	--	--	--	--	0.4	1.0	Pass																		
CA	150,000 miles	California LEV-III SULEV30	CO-COMP	0.66	1	--	--	--	--	0.7	4.2	Pass																		
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0073	1	1.1	--	--	--	0.007	99.999	Pass																		
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0116	1	--	--	--	--	0.012	0.030	Pass																		
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX-COMP	0.0234	1	--	--	--	--	0.023	0.050	Pass																		
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0043	1	--	--	--	--	0.004	99.999	Pass																		
CA	150,000 miles	California LEV-III SULEV30	PM	0.0010	1	--	--	--	--	0.001	0.003	Pass																		

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX10086377	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	26 - Cold CO Regular (Tier 2)
Test Date	05/07/2024	Fuel	Gasoline
Fuel Batch ID	000213	Fuel Calibration Number	9373
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4281	Odometer Units	M
4WD Test Dyno	Yes	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)	680.659	--
FE BAG 1 (Bag 1 Fuel Economy)	12.4	12.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	582.503	--
FE BAG 2 (Bag 2 Fuel Economy)	15.1	15.1
CO2 BAG 3 (Bag 3 Carbon Dioxide)	493.587	--
FE BAG 3 (Bag 3 Fuel Economy)	17.7	17.7
METHANE (CH4 - Methane)	0.06872	--
CO (Carbon Monoxide)	3.21902	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.802352	--
DT-EER (Drive Trace Energy Economy Rating)	0.224783	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.836789	--
HCHO (Formaldehyde)	0.0159475	--
MFR FE (Manufacturer Fuel Economy)	15	15
NOX (Nitrogen Oxide)	0.015039	--
HC-NM (Non-methane Hydrocarbon)	0.398688	--
NMOG (Non-methane organic gases)	0.410728	--
HC-TOTAL (Total Hydrocarbon)	0.465495	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	578.411	--

Manufacturer Test Comments

150K COLD TEST

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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	50,000 miles	Federal Tier 3 Bin 30	CO	3.22	1	--	--	--	--	3.2	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.40	1	--	--	--	--	0.4	0.5	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	3.22	1	--	--	--	--	3.2	12.5	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX10086378	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	05/16/2024	Fuel	Gasoline
Fuel Batch ID	000334	Fuel Calibration Number	9312
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--	Odometer Units	M
Test Start Odometer Reading	4321	Diesel Adjustment Factor Usage	--
4WD Test Dyno	Yes		
State of Charge Delta	No	Road Speed Fan Usage	Yes
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)		
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	676.995	--	
FE BAG 1 (Bag 1 Fuel Economy)	12.5	12.5	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	536.034	--	
FE BAG 2 (Bag 2 Fuel Economy)	16.2	16.2	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	485.831	--	
FE BAG 3 (Bag 3 Fuel Economy)	17.8	17.8	
METHANE (CH4 - Methane)	0.064531	--	
CO (Carbon Monoxide)	2.24622	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.00006	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.07624	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.228955	--	
MFR FE (Manufacturer Fuel Economy)	15.6	15.6	
NOX (Nitrogen Oxide)	0.01504	--	
HC-NM (Non-methane Hydrocarbon)	0.293252	--	
NMOG (Non-methane organic gases)	0.322326	--	
HC-TOTAL (Total Hydrocarbon)	0.355987	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	551.486	--	
Manufacturer Test Comments	150K COLD TEST		

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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	50,000 miles	Federal Tier 3 Bin 30	CO	2.25	1	--	--	--	--	2.2	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.29	1	--	--	--	--	0.3	0.5	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	2.25	1	--	--	--	--	2.2	12.5	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C																														
Test #	SGMX10086835	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	05/26/2024	Fuel	Gasoline																														
Fuel Batch ID	000329	Fuel Calibration Number	9393																														
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																														
Verify Test Lab ID	Compliance and Certification																																
E10 Evaporative Test Measurement Method	--																																
Test Start Odometer Reading	4456	Odometer Units	M																														
4WD Test Dyno	Yes	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 border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>METHANE (CH4 - Methane)</td> <td>0.013079</td> <td>--</td> </tr> <tr> <td>CO (Carbon Monoxide)</td> <td>0.809785</td> <td>--</td> </tr> <tr> <td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td> <td>-0.76135</td> <td>--</td> </tr> <tr> <td>DT-EER (Drive Trace Energy Economy Rating)</td> <td>-0.516825</td> <td>--</td> </tr> <tr> <td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td> <td>-0.905984</td> <td>--</td> </tr> <tr> <td>NOX (Nitrogen Oxide)</td> <td>0.004874</td> <td>--</td> </tr> <tr> <td>HC-NM (Non-methane Hydrocarbon)</td> <td>0.027035</td> <td>--</td> </tr> <tr> <td>NMOG (Non-methane organic gases)</td> <td>0.029745</td> <td>--</td> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.039411</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	METHANE (CH4 - Methane)	0.013079	--	CO (Carbon Monoxide)	0.809785	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.76135	--	DT-EER (Drive Trace Energy Economy Rating)	-0.516825	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.905984	--	NOX (Nitrogen Oxide)	0.004874	--	HC-NM (Non-methane Hydrocarbon)	0.027035	--	NMOG (Non-methane organic gases)	0.029745	--	HC-TOTAL (Total Hydrocarbon)	0.039411	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																															
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DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.76135	--																															
DT-EER (Drive Trace Energy Economy Rating)	-0.516825	--																															
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.905984	--																															
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HC-NM (Non-methane Hydrocarbon)	0.027035	--																															
NMOG (Non-methane organic gases)	0.029745	--																															
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Test Result Name	Unrounded Test Result	Verify Calculated CO2																															
Carbon dioxide	516.704	--																															
Manufacturer Test Comments	150K 50 DEG TEST																																

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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 SULEV30	CO	0.81	1	--	--	--	--	0.8	1.0	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG	0.0297	1	--	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0346	1	--	--	--	--	0.035	0.060	Pass
CA	4,000 miles	California LEV-III SULEV30	NOX	0.0049	1	--	--	--	--	0.005	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX91005959	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4620	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	563.602356	--
FE BAG 1 (Bag 1 Fuel Economy)	15.7053995	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	518.4223022	--
FE BAG 2 (Bag 2 Fuel Economy)	17.1833038	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	477.8360596	--
FE BAG 3 (Bag 3 Fuel Economy)	18.6004829	--
METHANE (CH4 - Methane)	0.0176123	--
CO (Carbon Monoxide)	0.7628509	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.947354	--
DT-EER (Drive Trace Energy Economy Rating)	0.2194418	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.4330366	--
MFR FE (Manufacturer Fuel Economy)	17.207962	--
NOX (Nitrogen Oxide)	0.0038335	--
N2O (Nitrous Oxide)	0.0009176	--
HC-NM (Non-methane Hydrocarbon)	0.0136087	--
NMOG (Non-methane organic gases)	0.014153	--
HC-TOTAL (Total Hydrocarbon)	0.0312791	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	518

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family				VGMXR022450C			
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		516.6320801			--					
Manufacturer Test Comments		None										
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	120,000 miles	Federal Tier 3 Bin 30	CREE	518	1	--	--	0	--	518	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.76	1	--	--	--	--	0.8	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0142	1	--	--	--	--	0.014	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0180	1	--	--	--	--	0.018	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0038	1	--	--	--	--	0.004	99.999	Pass
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0176	1	--	--	--	--	0.018	0.030	Pass
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0009	1	--	--	--	--	0.001	0.010	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.76	1	--	--	--	--	0.8	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0142	1	1.1	--	--	--	0.014	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0180	1	--	--	--	--	0.018	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0038	1	--	--	--	--	0.004	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
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Test #	SGMX10086374	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	04/30/2024	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9393
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4201	Odometer Units	M
4WD Test Dyno	Yes	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)	0.003205	--
CO (Carbon Monoxide)	0.105832	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.65333	--
DT-EER (Drive Trace Energy Economy Rating)	-0.748276	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.90705	--
MFR FE (Manufacturer Fuel Economy)	26	26
NOX (Nitrogen Oxide)	0.000448	--
HC-NM (Non-methane Hydrocarbon)	0.000061	--
NMOG (Non-methane organic gases)	0.000063	--
HC-TOTAL (Total Hydrocarbon)	0.003135	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	335	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	334.993	--

Manufacturer Test Comments 150K HWFE TEST

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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	120,000 miles	Federal Tier 3 Bin 30	CREE	999	1	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0001	1	1.03	--	--	--	0.000	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0005	1	--	--	--	--	0.000	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0004	1	--	--	--	--	0.000	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0001	1	1.03	--	--	--	0.000	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0005	1	--	--	--	--	0.000	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0004	1	--	--	--	--	0.000	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX91005961	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4632	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	0.0076028	--
CO (Carbon Monoxide)	0.0879684	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.1591377	--
DT-EER (Drive Trace Energy Economy Rating)	-0.3752018	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.8032331	--
MFR FE (Manufacturer Fuel Economy)	26.3441391	--
NOX (Nitrogen Oxide)	0.0069019	--
N2O (Nitrous Oxide)	0.0026863	--
HC-NM (Non-methane Hydrocarbon)	0.0020817	--
NMOG (Non-methane organic gases)	0.0021649	--
HC-TOTAL (Total Hydrocarbon)	0.0097095	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	338

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	338.142334	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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	120,000 miles	Federal Tier 3 Bin 30	CREE	338	1	--	--	0	--	338	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0022	1	1.03	--	--	--	0.002	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0091	1	--	--	--	--	0.009	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0069	1	--	--	--	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0022	1	1.03	--	--	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0091	1	--	--	--	--	0.009	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0069	1	--	--	--	--	0.007	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C																																																
Test #	SGMX10086375	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	04/30/2024	Fuel	Gasoline																																																
Fuel Batch ID	000329	Fuel Calibration Number	9393																																																
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																																																
Verify Test Lab ID	Compliance and Certification																																																		
E10 Evaporative Test Measurement Method	--																																																		
Test Start Odometer Reading	4223	Odometer Units	M																																																
4WD Test Dyno	Yes	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 border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>CO2 BAG 1 (Bag 1 Carbon Dioxide)</td> <td>847.324</td> <td>--</td> </tr> <tr> <td>FE BAG 1 (Bag 1 Fuel Economy)</td> <td>10.3</td> <td>10.3</td> </tr> <tr> <td>CO2 BAG 2 (Bag 2 Carbon Dioxide)</td> <td>463.755</td> <td>--</td> </tr> <tr> <td>FE BAG 2 (Bag 2 Fuel Economy)</td> <td>18.8</td> <td>18.8</td> </tr> <tr> <td>METHANE (CH4 - Methane)</td> <td>0.007406</td> <td>--</td> </tr> <tr> <td>CO (Carbon Monoxide)</td> <td>0.455544</td> <td>--</td> </tr> <tr> <td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td> <td>-2.81611</td> <td>--</td> </tr> <tr> <td>DT-EER (Drive Trace Energy Economy Rating)</td> <td>-1.68035</td> <td>--</td> </tr> <tr> <td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td> <td>-6.09792</td> <td>--</td> </tr> <tr> <td>MFR FE (Manufacturer Fuel Economy)</td> <td>15.9</td> <td>15.9</td> </tr> <tr> <td>NOX (Nitrogen Oxide)</td> <td>0.02332</td> <td>--</td> </tr> <tr> <td>HC-NM (Non-methane Hydrocarbon)</td> <td>0.004737</td> <td>--</td> </tr> <tr> <td>NMOG (Non-methane organic gases)</td> <td>0.004879</td> <td>--</td> </tr> <tr> <td>PM (Particulate Matter)</td> <td>0.000768</td> <td>--</td> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.011841</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	CO2 BAG 1 (Bag 1 Carbon Dioxide)	847.324	--	FE BAG 1 (Bag 1 Fuel Economy)	10.3	10.3	CO2 BAG 2 (Bag 2 Carbon Dioxide)	463.755	--	FE BAG 2 (Bag 2 Fuel Economy)	18.8	18.8	METHANE (CH4 - Methane)	0.007406	--	CO (Carbon Monoxide)	0.455544	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.81611	--	DT-EER (Drive Trace Energy Economy Rating)	-1.68035	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-6.09792	--	MFR FE (Manufacturer Fuel Economy)	15.9	15.9	NOX (Nitrogen Oxide)	0.02332	--	HC-NM (Non-methane Hydrocarbon)	0.004737	--	NMOG (Non-methane organic gases)	0.004879	--	PM (Particulate Matter)	0.000768	--	HC-TOTAL (Total Hydrocarbon)	0.011841	--
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Manufacturer Test Comments	150K US06 TEST																																																		

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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 Bin 30	CO	0.46	1	--	--	--	--	0.5	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0049	1	1.03	--	--	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0282	1	--	--	--	--	0.028	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0233	1	--	--	--	--	0.023	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0008	1	--	--	--	--	0.001	0.006	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.46	1	--	--	--	--	0.5	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0049	1	1.03	--	--	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0282	1	--	--	--	--	0.028	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0233	1	--	--	--	--	0.023	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0.0008	1	--	--	--	--	0.001	0.006	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Test #	SGMX91005960	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4652	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	850.8126221	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4541225	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	469.2493896	--
FE BAG 2 (Bag 2 Fuel Economy)	18.9709396	--
METHANE (CH4 - Methane)	0.0114389	--
CO (Carbon Monoxide)	0.4735241	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.2921185	--
DT-EER (Drive Trace Energy Economy Rating)	-1.7340758	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.1301014	--
MFR FE (Manufacturer Fuel Economy)	16.0683594	--
NOX (Nitrogen Oxide)	0.0444655	--
N2O (Nitrous Oxide)	0.0046017	--
HC-NM (Non-methane Hydrocarbon)	0.0092079	--
NMOG (Non-methane organic gases)	0.0095762	--
HC-TOTAL (Total Hydrocarbon)	0.0206845	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	553.8530884	--

Manufacturer Test Comments

None

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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 Bin 30	CO	0.47	1	--	--	--	--	0.5	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0096	1	1.03	--	--	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0541	1	--	--	--	--	0.054	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0445	1	--	--	--	--	0.044	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.47	1	--	--	--	--	0.5	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0096	1	1.03	--	--	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0541	1	--	--	--	--	0.054	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0445	1	--	--	--	--	0.044	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C																																	
Test #	SGMX10086376	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	05/03/2024	Fuel	Gasoline																																	
Fuel Batch ID	000329	Fuel Calibration Number	9393																																	
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																																	
Verify Test Lab ID	Compliance and Certification																																			
E10 Evaporative Test Measurement Method	--																																			
Test Start Odometer Reading	4247	Odometer Units	M																																	
4WD Test Dyno	Yes	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 dioxide	673.122	--																																		
Manufacturer Test Comments	150K SC03 TEST																																			

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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 Bin 30	CO	0.88	1	--	--	--	--	0.9	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0138	1	1.03	--	--	--	0.014	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0160	1	--	--	--	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0022	1	--	--	--	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.88	1	--	--	--	--	0.9	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0138	1	1.03	--	--	--	0.014	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0160	1	--	--	--	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0022	1	--	--	--	--	0.002	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C																																				
Test #	SGMX10086382	Test Procedure	95 - SC03																																				
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline																																				
Test Date	05/21/2024	Fuel	Gasoline																																				
Fuel Batch ID	000307	Fuel Calibration Number	9399																																				
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																																				
Verify Test Lab ID	Compliance and Certification																																						
E10 Evaporative Test Measurement Method	--																																						
Test Start Odometer Reading	4428	Odometer Units	M																																				
4WD Test Dyno	Yes	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 dioxide	680.095	--																																					
Manufacturer Test Comments	150K SC03 TEST																																						

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR022450C		
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 Bin 30	CO	1.06	1	--	--	--	--	1.1	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0209	1	1.03	--	--	--	0.021	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0310	1	--	--	--	--	0.031	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0101	1	--	--	--	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	1.06	1	--	--	--	--	1.1	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0209	1	1.03	--	--	--	0.021	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0310	1	--	--	--	--	0.031	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0101	1	--	--	--	--	0.010	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Fuel Properties			
Fuel Batch ID	000307	Fuel Calibration Number	9399
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	05/14/2024
Fuel Batch Calibration Effective Date	05/14/2024	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	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18441
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	--
Fuel Batch ID	000329	Fuel Calibration Number	9393
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	03/18/2024
Fuel Batch Calibration Effective Date	03/18/2024	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	0.746
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17761
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	29351	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	05/03/2023
Fuel Batch Calibration Effective Date	05/03/2023	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	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18439
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	--
Fuel Batch ID	000334	Fuel Calibration Number	9312
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	09/05/2023
Fuel Batch Calibration Effective Date	09/05/2023	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.744
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17826
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
Fuel Batch ID	000213	Fuel Calibration Number	9373
Test Fuel Type	26 - Cold CO Regular (Tier 2)	Fuel Batch Calibration Date	08/18/2023
Fuel Batch Calibration Effective Date	08/17/2023	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	0.731
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18531
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.863	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family		VGMXR022450C		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		Federal Tier 3 Bin 30		
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	--	--	--	--	--	0.006
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		California LEV-III SULEV30		
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
120,000 miles	METHANE	--	1	--	--	--	--	--	0.030
120,000 miles	N2O	--	1	--	--	--	--	--	0.010
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	CO-COMP	--	1	--	--	--	--	--	4.2
150,000 miles	NMOG	--	1	1.1	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.050
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR022450C	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
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
120,000 miles	CREE	--	1	--	--	--	--	0	999.999
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	CO-COMP	--	1	--	--	--	--	--	4.2
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.050
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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	--	--	--	--	--	1.0
4,000 miles	NMOG	--	1	--	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.060
4,000 miles	NOX	--	1	--	--	--	--	--	99.999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
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

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family		VGMXR022450C		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		California LEV-III SULEV30		
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	--	--	--	--	--	0.006
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		Federal Tier 3 Bin 30		
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
120,000 miles	CREE	--	1	--	--	--	--	0	999.999
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR022450C	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
Fuel		Gasoline			Test Procedure			Federal fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	1	--	--	--	--	0	999.999
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	1	--	--	--	--	--	12.5
120,000 miles	HC-NM	--	1	--	--	--	--	--	0.5

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR022450C	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	1	--	--	--	--	--	12.5

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			Federal fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	METHANE	--	1	--	--	--	--	--	0.030
120,000 miles	N2O	--	1	--	--	--	--	--	0.010
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	NMOG	--	1	1.1	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		VGMXT05.3330		Evaporative/Refueling Family		VGMXR022450C	
Evaporative/Refueling Family		VGMXR022450C		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	0.000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.525	0.0000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.525	0.0000		
Evaporative/Refueling Family		VGMXR022450C		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 refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.020	0.000		

Certification Summary Information Report

Test Group		VGMXT05.3330		Evaporative/Refueling Family		VGMXR022450C	
Evaporative/Refueling Family		VGMXR022450C		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.525	0.0000		
Evaporative/Refueling Family		VGMXR022450C		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	0.000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.020	0.000		
Evaporative/Refueling Family		VGMXR022450C		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	--	0.525	0.0000		

Certification Summary Information Report

Test Group		VGMXT05.3330	Evaporative/Refueling Family	VGMXR022450C
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		VGMXT05.3330	Evaporative/Refueling Family		VGMXR022450C
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	

Certification Summary Information Report

Test Group		VGMXT05.3330	Evaporative/Refueling Family		VGMXR022450C
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		VGMXT05.3330	Evaporative/Refueling Family		VGMXR022450C
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	

Certification Summary Information Report

Manufacturer	General Motors LLC	Manufacturer Code	GMX
Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	07/28/2026 11:08:23 AM
Model Year	2027		

Test Group Information

CSI Type	New	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	LDT3
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	VGMXGPGNNB60	Durability Group Equivalency Factor	1
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	CAP2000 Conditional Certificate?	N/A
Independent Commercial Importer?	--	Alternative Fuel Converter Certificate?	--
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	VGMXT05.3330
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	L84 (5.3) Gas FST: LDPU & SUV BIN30/SULEV30 150K		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	06/11/2026 02:42:18 PM				
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)	175	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				
VGMXR017350D-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	3 - Chevrolet	77 - TAHOE 4WD	California + CAA Section 177 states	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	4 - GMC	34 - YUKON 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	4 - GMC	65 - YUKON 4WD	Federal	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	77 - TAHOE 4WD	Federal	4-Wheel Drive	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	24 - TAHOE 2WD	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	4 - GMC	34 - YUKON 2WD	Federal	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	3 - Chevrolet	24 - TAHOE 2WD	Federal	2-Wheel Drive, Rear	Automatic	10	Yes
General Motors LLC	4 - GMC	65 - YUKON 4WD	California + CAA Section 177 states	4-Wheel Drive	Automatic	10	Yes

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D	
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	0W20	
Number of Cylinders/Rotors	8	Mechanically Variable Compression Ratio Indicator	N	
After Treatment Device(s) (ATD)				
ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Platinum + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
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)	5.3	Engine Rated Horsepower	355	
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	Yes			
Cylinder Deactivation Description	Dynamic Fuel Management			
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		VGMXT05.3330				Evaporative/Refueling Family		VGMXR017350D			
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	SGMX10086373	SGMX10086375	SGMX10086382	SGMX10086378	SGMX10086374	13.7	228.2	20.7	286.1	--	

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Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D						
Manufacturer Test Vehicle Comments	ADDED 250 LBS BALLAST TO REAR AXLE AND REDUCED TIRE PRESSURE TO 32 PSI TO PREVENT WHEEL SLIP. ALL TESTS WERE RUN WITH ROAD SPEED FAN - 150K CONFIG.								
Test #	KGMX10053898	Test Procedure	23 - 2-day evap						
Exhaust Test # for this Evap Test	KGMX10053884	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	04/23/2018	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	9805	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"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.1998</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1998	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1998	--							
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	0.1998	0.0000	0.200	0.500	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1998	0.0000	0.200	0.500	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D					
Test #	KGMX10053899	Test Procedure	34 - Federal fuel 3-day evap					
Exhaust Test # for this Evap Test	KGMX10053884	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)					
Test Date	05/05/2018	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	9848	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)		0.1981	--					
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	0.1981	0.0000	0.198	0.500	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1981	0.0000	0.198	0.500	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D						
Test #	KGMX10053900	Test Procedure	32 - Federal Fuel Running Loss						
Exhaust Test # for this Evap Test	KGMX10053884	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	05/11/2018	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	9886	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>0.0005</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)	0.0005	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0005	--							
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	0.000	0.000	0.00	0.05	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.000	0.000	0.00	0.05	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D						
Test #	KGMX10054575	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	01/06/2018	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	9900	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 (Total Hydrocarbon)</td> <td>0.00826</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL (Total Hydrocarbon)	0.00826	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL (Total Hydrocarbon)	0.00826	--							
Manufacturer Test Comments									
150K 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	0.0083	0.000	0.008	0.020	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.0083	0.000	0.008	0.020	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D					
Emission Data Vehicle Information								
Vehicle ID / Configuration	27KPKN1422 / 0	Manufacturer Vehicle Configuration Number	0					
Original Test Group Name	KGMXT02.7100	Original Evaporative/Refueling Family	KGMXR017350D					
Original Test Vehicle Model Year	2019							
Vehicle Model								
Represented Test Vehicle Make	GMC	Represented Test Vehicle Model	K10 SIERRA 4WD					
Leak Family Details								
Leak Family Identifier	LK1	Leak Family Name	KGMXR017350D-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	1	Rated Horsepower	310					
Displacement (liters)	2.7							
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'						
Number of Air Aspiration Devices	1	Air Aspiration Device Configuration	Single					
Charge Air Cooler Type	Air	Drive Mode While Testing	2-Wheel Drive, Rear					
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)					
Curb Weight (lbs)	5092	Equivalent Test Weight (pounds)	5500					
GVWR (lbs)	7000	N/V Ratio	23.5					
Axle Ratio	3.42							
Transmission Type	Automatic	# of Transmission Gears	8					
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	36.14	0.5564	0.03561					
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)					
	14.44	0.2355	0.0365					
	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients							
	20.4							
Emission Control Device Comments								
L3B Pickup w/o aero shutters -WMI								

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D						
Manufacturer Test Vehicle Comments	ADDED 250 LBS BALLAST TO REAR AXLE AND REDUCED TIRE PRESSURE TO 32 PSI TO PREVENT WHEEL SLIP. ALL TESTS WERE RUN WITH ROAD SPEED FAN - 150K CONFIG.								
Test #	KGMX10053403	Test Procedure	24 - Federal fuel refueling test (ORVR)						
Exhaust Test # for this Evap Test	KGMX10053402	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	04/13/2018	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	4408	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"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.0202</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0202	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0202	--							
Manufacturer Test Comments	150K ORVR 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	0.020	0.000	0.02	0.20	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.020	0.000	0.02	0.20	Pass	

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D						
Emission Data Vehicle Information									
Vehicle ID / Configuration	53KLSVT449 / 0	Manufacturer Vehicle Configuration Number	1						
Original Test Group Name	SGMXT05.3330	Original Evaporative/Refueling Family	SGMXR022450C						
Original Test Vehicle Model Year	2025								
Vehicle Model									
Represented Test Vehicle Make	CHEVROLET	Represented Test Vehicle Model	SUBURBAN 4WD						
Leak Family Details									
Leak Family Identifier	LK1	Leak Family Name	SGMXR022450C-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	30	Rated Horsepower	355						
Displacement (liters)	5.3								
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	All Wheel Drive						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)						
Curb Weight (lbs)	6082	Equivalent Test Weight (pounds)	6500						
GVWR (lbs)	7700	N/V Ratio	21.6						
Axle Ratio	3.23								
Transmission Type	Automatic	# of Transmission Gears	10						
Transmission Lockup	Yes	Creep Gear	No						

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family		VGMXR017350D	
Dynamometer Coefficients:								
Target Coefficients				Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients	
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)		
City/Highway/Evap	45.16	0.7546	0.0327	-1.01	0.0374	0.03436	22	
Cold CO	49.68	0.8301	0.03597	-7.43	-0.6984	0.04307	N/A	
US06	45.16	0.7546	0.0327	-1.01	0.0374	0.03436	N/A	
Emission Control Device Comments		L84 10spd SUV (3-mode)						
Manufacturer Test Vehicle Comments		REDUCED TIRE PRESSURE FROM 35 TO 32 PSI TO PREVENT WHEEL SLIP. RWD MUST BE TESTED ON AWD DYNO WITH ROAD SPEED FAN. 150K CONFIG.						

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX10086373	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	04/29/2024	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9393
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4161	Odometer Units	M
4WD Test Dyno	Yes	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)	521.768	--
FE BAG 1 (Bag 1 Fuel Economy)	16.7	16.7
CO2 BAG 2 (Bag 2 Carbon Dioxide)	496.673	--
FE BAG 2 (Bag 2 Fuel Economy)	17.5	17.5
CO2 BAG 3 (Bag 3 Carbon Dioxide)	465.14	--
FE BAG 3 (Bag 3 Fuel Economy)	18.7	18.7
METHANE (CH4 - Methane)	0.010396	--
CO (Carbon Monoxide)	0.411839	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.641301	--
DT-EER (Drive Trace Energy Economy Rating)	-0.97186	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.28514	--
MFR FE (Manufacturer Fuel Economy)	17.7	17.7
NOX (Nitrogen Oxide)	0.004309	--
N2O (Nitrous Oxide)	0.000218	--
HC-NM (Non-methane Hydrocarbon)	0.006636	--
NMOG (Non-methane organic gases)	0.007301	--
PM (Particulate Matter)	0.000955	--
HC-TOTAL (Total Hydrocarbon)	0.016608	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	494	999

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		493.202			--					
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	120,000 miles	Federal Tier 3 Bin 30	CREE	999	1	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.41	1	--	--	--	--	0.4	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.66	1	--	--	--	--	0.7	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0073	1	--	--	--	--	0.007	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0116	1	--	--	--	--	0.012	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0234	1	--	--	--	--	0.023	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0043	1	--	--	--	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0010	1	--	--	--	--	0.001	0.003	Pass
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0104	1	--	--	--	--	0.010	0.030	Pass
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0002	1	--	--	--	--	0.000	0.010	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.41	1	--	--	--	--	0.4	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	CO-COMP	0.66	1	--	--	--	--	0.7	4.2	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0073	1	1.1	--	--	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0116	1	--	--	--	--	0.012	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX-COMP	0.0234	1	--	--	--	--	0.023	0.050	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0043	1	--	--	--	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0.0010	1	--	--	--	--	0.001	0.003	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX10086377	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	26 - Cold CO Regular (Tier 2)
Test Date	05/07/2024	Fuel	Gasoline
Fuel Batch ID	000213	Fuel Calibration Number	9373
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4281	Odometer Units	M
4WD Test Dyno	Yes	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)	680.659	--
FE BAG 1 (Bag 1 Fuel Economy)	12.4	12.4
CO2 BAG 2 (Bag 2 Carbon Dioxide)	582.503	--
FE BAG 2 (Bag 2 Fuel Economy)	15.1	15.1
CO2 BAG 3 (Bag 3 Carbon Dioxide)	493.587	--
FE BAG 3 (Bag 3 Fuel Economy)	17.7	17.7
METHANE (CH4 - Methane)	0.06872	--
CO (Carbon Monoxide)	3.21902	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.802352	--
DT-EER (Drive Trace Energy Economy Rating)	0.224783	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.836789	--
HCHO (Formaldehyde)	0.0159475	--
MFR FE (Manufacturer Fuel Economy)	15	15
NOX (Nitrogen Oxide)	0.015039	--
HC-NM (Non-methane Hydrocarbon)	0.398688	--
NMOG (Non-methane organic gases)	0.410728	--
HC-TOTAL (Total Hydrocarbon)	0.465495	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	578.411	--

Manufacturer Test Comments

150K COLD TEST

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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	50,000 miles	Federal Tier 3 Bin 30	CO	3.22	1	--	--	--	--	3.2	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.40	1	--	--	--	--	0.4	0.5	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	3.22	1	--	--	--	--	3.2	12.5	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D																																																			
Test #	SGMX10086378	Test Procedure	11 - Cold CO																																																			
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)																																																			
Test Date	05/16/2024	Fuel	Gasoline																																																			
Fuel Batch ID	000334	Fuel Calibration Number	9312																																																			
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																																																			
Verify Test Lab ID	Compliance and Certification																																																					
E10 Evaporative Test Measurement Method	--																																																					
Test Start Odometer Reading	4321	Odometer Units	M																																																			
4WD Test Dyno	Yes	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 COLD TEST																																																					

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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	50,000 miles	Federal Tier 3 Bin 30	CO	2.25	1	--	--	--	--	2.2	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.29	1	--	--	--	--	0.3	0.5	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	2.25	1	--	--	--	--	2.2	12.5	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D																														
Test #	SGMX10086835	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	05/26/2024	Fuel	Gasoline																														
Fuel Batch ID	000329	Fuel Calibration Number	9393																														
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																														
Verify Test Lab ID	Compliance and Certification																																
E10 Evaporative Test Measurement Method	--	Odometer Units	M																														
Test Start Odometer Reading	4456	Diesel Adjustment Factor Usage	--																														
4WD Test Dyno	Yes																																
State of Charge Delta	No	Road Speed Fan Usage	Yes																														
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)																																
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Manufacturer Test Comments	150K 50 DEG TEST																																

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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 SULEV30	CO	0.81	1	--	--	--	--	0.8	1.0	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG	0.0297	1	--	--	--	--	0.030	99.999	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0346	1	--	--	--	--	0.035	0.060	Pass
CA	4,000 miles	California LEV-III SULEV30	NOX	0.0049	1	--	--	--	--	0.005	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX91005959	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4620	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	563.602356	--
FE BAG 1 (Bag 1 Fuel Economy)	15.7053995	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	518.4223022	--
FE BAG 2 (Bag 2 Fuel Economy)	17.1833038	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	477.8360596	--
FE BAG 3 (Bag 3 Fuel Economy)	18.6004829	--
METHANE (CH4 - Methane)	0.0176123	--
CO (Carbon Monoxide)	0.7628509	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.947354	--
DT-EER (Drive Trace Energy Economy Rating)	0.2194418	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.4330366	--
MFR FE (Manufacturer Fuel Economy)	17.207962	--
NOX (Nitrogen Oxide)	0.0038335	--
N2O (Nitrous Oxide)	0.0009176	--
HC-NM (Non-methane Hydrocarbon)	0.0136087	--
NMOG (Non-methane organic gases)	0.014153	--
HC-TOTAL (Total Hydrocarbon)	0.0312791	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	518

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family				VGMXR017350D			
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		516.6320801			--					
Manufacturer Test Comments		None										
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	120,000 miles	Federal Tier 3 Bin 30	CREE	518	1	--	--	0	--	518	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.76	1	--	--	--	--	0.8	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0142	1	--	--	--	--	0.014	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0180	1	--	--	--	--	0.018	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0038	1	--	--	--	--	0.004	99.999	Pass
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0176	1	--	--	--	--	0.018	0.030	Pass
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0009	1	--	--	--	--	0.001	0.010	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.76	1	--	--	--	--	0.8	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0142	1	1.1	--	--	--	0.014	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0180	1	--	--	--	--	0.018	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0038	1	--	--	--	--	0.004	99.999	Pass
NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.												

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
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Test #	SGMX10086374	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	04/30/2024	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9393
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4201	Odometer Units	M
4WD Test Dyno	Yes	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)	0.003205	--
CO (Carbon Monoxide)	0.105832	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.65333	--
DT-EER (Drive Trace Energy Economy Rating)	-0.748276	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.90705	--
MFR FE (Manufacturer Fuel Economy)	26	26
NOX (Nitrogen Oxide)	0.000448	--
HC-NM (Non-methane Hydrocarbon)	0.000061	--
NMOG (Non-methane organic gases)	0.000063	--
HC-TOTAL (Total Hydrocarbon)	0.003135	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	335	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	334.993	--

Manufacturer Test Comments 150K HWFE TEST

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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	120,000 miles	Federal Tier 3 Bin 30	CREE	999	1	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0001	1	1.03	--	--	--	0.000	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0005	1	--	--	--	--	0.000	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0004	1	--	--	--	--	0.000	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0001	1	1.03	--	--	--	0.000	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0005	1	--	--	--	--	0.000	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0004	1	--	--	--	--	0.000	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX91005961	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4632	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	0.0076028	--
CO (Carbon Monoxide)	0.0879684	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.1591377	--
DT-EER (Drive Trace Energy Economy Rating)	-0.3752018	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.8032331	--
MFR FE (Manufacturer Fuel Economy)	26.3441391	--
NOX (Nitrogen Oxide)	0.0069019	--
N2O (Nitrous Oxide)	0.0026863	--
HC-NM (Non-methane Hydrocarbon)	0.0020817	--
NMOG (Non-methane organic gases)	0.0021649	--
HC-TOTAL (Total Hydrocarbon)	0.0097095	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	338

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	338.142334	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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	120,000 miles	Federal Tier 3 Bin 30	CREE	338	1	--	--	0	--	338	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0022	1	1.03	--	--	--	0.002	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0091	1	--	--	--	--	0.009	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0069	1	--	--	--	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0022	1	1.03	--	--	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0091	1	--	--	--	--	0.009	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0069	1	--	--	--	--	0.007	99.999	Pass

NOTE: For Non-charge depleting tests, the Rounded Result for CREE/OPT-CREE Emission names are Verify-calculated values.

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX10086375	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	04/30/2024	Fuel	Gasoline
Fuel Batch ID	000329	Fuel Calibration Number	9393
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4223	Odometer Units	M
4WD Test Dyno	Yes	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)	847.324	--	
FE BAG 1 (Bag 1 Fuel Economy)	10.3	10.3	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	463.755	--	
FE BAG 2 (Bag 2 Fuel Economy)	18.8	18.8	
METHANE (CH4 - Methane)	0.007406	--	
CO (Carbon Monoxide)	0.455544	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.81611	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.68035	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-6.09792	--	
MFR FE (Manufacturer Fuel Economy)	15.9	15.9	
NOX (Nitrogen Oxide)	0.02332	--	
HC-NM (Non-methane Hydrocarbon)	0.004737	--	
NMOG (Non-methane organic gases)	0.004879	--	
PM (Particulate Matter)	0.000768	--	
HC-TOTAL (Total Hydrocarbon)	0.011841	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	548.923	--	
Manufacturer Test Comments	150K US06 TEST		

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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 Bin 30	CO	0.46	1	--	--	--	--	0.5	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0049	1	1.03	--	--	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0282	1	--	--	--	--	0.028	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0233	1	--	--	--	--	0.023	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0008	1	--	--	--	--	0.001	0.006	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.46	1	--	--	--	--	0.5	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0049	1	1.03	--	--	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0282	1	--	--	--	--	0.028	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0233	1	--	--	--	--	0.023	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0.0008	1	--	--	--	--	0.001	0.006	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX91005960	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/21/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4652	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
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)	850.8126221	--
FE BAG 1 (Bag 1 Fuel Economy)	10.4541225	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	469.2493896	--
FE BAG 2 (Bag 2 Fuel Economy)	18.9709396	--
METHANE (CH4 - Methane)	0.0114389	--
CO (Carbon Monoxide)	0.4735241	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.2921185	--
DT-EER (Drive Trace Energy Economy Rating)	-1.7340758	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.1301014	--
MFR FE (Manufacturer Fuel Economy)	16.0683594	--
NOX (Nitrogen Oxide)	0.0444655	--
N2O (Nitrous Oxide)	0.0046017	--
HC-NM (Non-methane Hydrocarbon)	0.0092079	--
NMOG (Non-methane organic gases)	0.0095762	--
HC-TOTAL (Total Hydrocarbon)	0.0206845	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	553.8530884	--

Manufacturer Test Comments

None

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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 Bin 30	CO	0.47	1	--	--	--	--	0.5	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0096	1	1.03	--	--	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0541	1	--	--	--	--	0.054	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0445	1	--	--	--	--	0.044	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.47	1	--	--	--	--	0.5	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0096	1	1.03	--	--	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0541	1	--	--	--	--	0.054	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0445	1	--	--	--	--	0.044	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D																																	
Test #	SGMX10086376	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	05/03/2024	Fuel	Gasoline																																	
Fuel Batch ID	000329	Fuel Calibration Number	9393																																	
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined																																	
Verify Test Lab ID	Compliance and Certification																																			
E10 Evaporative Test Measurement Method	--																																			
Test Start Odometer Reading	4247	Odometer Units	M																																	
4WD Test Dyno	Yes	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 border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>METHANE (CH4 - Methane)</td> <td>0.016052</td> <td>--</td> </tr> <tr> <td>CO (Carbon Monoxide)</td> <td>0.877328</td> <td>--</td> </tr> <tr> <td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td> <td>0.580664</td> <td>--</td> </tr> <tr> <td>DT-EER (Drive Trace Energy Economy Rating)</td> <td>0.091532</td> <td>--</td> </tr> <tr> <td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td> <td>1.20531</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>0.002222</td> <td>--</td> </tr> <tr> <td>HC-NM (Non-methane Hydrocarbon)</td> <td>0.013355</td> <td>--</td> </tr> <tr> <td>NMOG (Non-methane organic gases)</td> <td>0.013756</td> <td>--</td> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.028544</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	METHANE (CH4 - Methane)	0.016052	--	CO (Carbon Monoxide)	0.877328	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.580664	--	DT-EER (Drive Trace Energy Economy Rating)	0.091532	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.20531	--	MFR FE (Manufacturer Fuel Economy)	12.9	12.9	NOX (Nitrogen Oxide)	0.002222	--	HC-NM (Non-methane Hydrocarbon)	0.013355	--	NMOG (Non-methane organic gases)	0.013756	--	HC-TOTAL (Total Hydrocarbon)	0.028544	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																		
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DT-EER (Drive Trace Energy Economy Rating)	0.091532	--																																		
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.20531	--																																		
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HC-NM (Non-methane Hydrocarbon)	0.013355	--																																		
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Test Result Name	Unrounded Test Result	Verify Calculated CO2																																		
Carbon dioxide	673.122	--																																		
Manufacturer Test Comments	150K SC03 TEST																																			

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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 Bin 30	CO	0.88	1	--	--	--	--	0.9	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0138	1	1.03	--	--	--	0.014	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0160	1	--	--	--	--	0.016	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0022	1	--	--	--	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.88	1	--	--	--	--	0.9	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0138	1	1.03	--	--	--	0.014	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0160	1	--	--	--	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0022	1	--	--	--	--	0.002	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Test #	SGMX10086382	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	05/21/2024	Fuel	Gasoline
Fuel Batch ID	000307	Fuel Calibration Number	9399
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Compliance and Certification		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4428	Odometer Units	M
4WD Test Dyno	Yes	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)	0.023139	--
CO (Carbon Monoxide)	1.0599	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.172193	--
DT-EER (Drive Trace Energy Economy Rating)	-0.121453	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.316551	--
HCHO (Formaldehyde)	0.000811	--
MFR FE (Manufacturer Fuel Economy)	13.1	13.1
NOX (Nitrogen Oxide)	0.010122	--
HC-NM (Non-methane Hydrocarbon)	0.020276	--
NMOG (Non-methane organic gases)	0.020884	--
HC-TOTAL (Total Hydrocarbon)	0.042171	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	680.095	--

Manufacturer Test Comments 150K SC03 TEST

Certification Summary Information Report

Test Group		VGMXT05.3330				Evaporative/Refueling Family				VGMXR017350D		
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 Bin 30	CO	1.06	1	--	--	--	--	1.1	99.9	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0209	1	1.03	--	--	--	0.021	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0310	1	--	--	--	--	0.031	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0101	1	--	--	--	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	1.06	1	--	--	--	--	1.1	99.9	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0209	1	1.03	--	--	--	0.021	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0310	1	--	--	--	--	0.031	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0101	1	--	--	--	--	0.010	99.999	Pass

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Fuel Properties			
Fuel Batch ID	000307	Fuel Calibration Number	9399
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	05/14/2024
Fuel Batch Calibration Effective Date	05/14/2024	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	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18441
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	--
Fuel Batch ID	000329	Fuel Calibration Number	9393
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	03/18/2024
Fuel Batch Calibration Effective Date	03/18/2024	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	0.746
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17761
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	29351	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	05/03/2023
Fuel Batch Calibration Effective Date	05/03/2023	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	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18439
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	--
Fuel Batch ID	000334	Fuel Calibration Number	9312
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	09/05/2023
Fuel Batch Calibration Effective Date	09/05/2023	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--

Certification Summary Information Report

Test Group	VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.744
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17826
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
Fuel Batch ID	000213	Fuel Calibration Number	9373
Test Fuel Type	26 - Cold CO Regular (Tier 2)	Fuel Batch Calibration Date	08/18/2023
Fuel Batch Calibration Effective Date	08/17/2023	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	0.731
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18531
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.863	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family		VGMXR017350D		
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		Federal Tier 3 Bin 30		
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	--	--	--	--	--	0.006
Cert Region		California + CAA Section 177 states			Cert/In-Use Code		Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level		California LEV-III SULEV30		
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
120,000 miles	METHANE	--	1	--	--	--	--	--	0.030
120,000 miles	N2O	--	1	--	--	--	--	--	0.010
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	CO-COMP	--	1	--	--	--	--	--	4.2
150,000 miles	NMOG	--	1	1.1	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.050
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR017350D	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
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
120,000 miles	CREE	--	1	--	--	--	--	0	999.999
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	CO-COMP	--	1	--	--	--	--	--	4.2
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NMOG+NOX-COMP	--	1	--	--	--	--	--	0.050
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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	--	--	--	--	--	1.0
4,000 miles	NMOG	--	1	--	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.060
4,000 miles	NOX	--	1	--	--	--	--	--	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
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

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR017350D		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30		
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	--	--	--	--	--	0.006	
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30		
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	
120,000 miles	CREE	--	1	--	--	--	--	0	999.999	
150,000 miles	NMOG	--	1	1.03	--	--	--	--	99.999	
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030	
150,000 miles	NOX	--	1	--	--	--	--	--	99.999	

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR017350D	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
Fuel		Gasoline			Test Procedure			Federal fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	1	--	--	--	--	0	999.999
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	NMOG	--	1	--	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	1	--	--	--	--	--	12.5
120,000 miles	HC-NM	--	1	--	--	--	--	--	0.5

Certification Summary Information Report

Test Group		VGMXT05.3330			Evaporative/Refueling Family			VGMXR017350D	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			Cold CO	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	1	--	--	--	--	--	12.5

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			Federal fuel 2-day exhaust (w/can load)	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	METHANE	--	1	--	--	--	--	--	0.030
120,000 miles	N2O	--	1	--	--	--	--	--	0.010
150,000 miles	CO	--	1	--	--	--	--	--	1.0
150,000 miles	NMOG	--	1	1.1	--	--	--	--	99.999
150,000 miles	NMOG+NOX	--	1	--	--	--	1	--	0.030
150,000 miles	NOX	--	1	--	--	--	--	--	99.999
150,000 miles	PM	--	1	--	--	--	--	--	0.003

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III SULEV30	
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

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group		VGMXT05.3330		Evaporative/Refueling Family		VGMXR017350D	
Evaporative/Refueling Family		VGMXR017350D		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	--	0.500	0.0000		
Evaporative/Refueling Family		VGMXR017350D		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	0.000		
Evaporative/Refueling Family		VGMXR017350D		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	--	0.020	0.000		
Evaporative/Refueling Family		VGMXR017350D		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	--	0.500	0.0000		
Evaporative/Refueling Family		VGMXR017350D		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.000		

Certification Summary Information Report

Test Group		VGMXT05.3330		Evaporative/Refueling Family		VGMXR017350D	
Evaporative/Refueling Family		VGMXR017350D		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 refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.000		
Evaporative/Refueling Family		VGMXR017350D		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	--	0.500	0.0000		
Evaporative/Refueling Family		VGMXR017350D		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	--	0.500	0.0000		
Evaporative/Refueling Family		VGMXR017350D		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	--	0.020	0.000		
Evaporative/Refueling Family		VGMXR017350D		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	0.000		

Certification Summary Information Report

Test Group		VGMXT05.3330	Evaporative/Refueling Family	VGMXR017350D
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		VGMXT05.3330	Evaporative/Refueling Family		VGMXR017350D
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	

Certification Summary Information Report

Test Group		VGMXT05.3330	Evaporative/Refueling Family		VGMXR017350D
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		VGMXT05.3330	Evaporative/Refueling Family		VGMXR017350D
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	

FLEXIBLE OR ALTERNATE FUELS

There are no flexible or alternate fuels certified for this test group.

Engine Code Information

Base Engine Code	30	60	31
EC Derivatives			
Test Group	VGMXT05.3330	VGMXT05.3330	VGMXT05.3330
Durability Group	VGMXGPGNNB60	VGMXGPGNNB60	VGMXGPGNNB60
Engine RPO	L84	L84	L84
Disp, liters	5.3	5.3	5.3
Trans RPO	MHS	MHS	MHU
Trans Type	A10	A10	A10
Product Code	--	--	--
Emission RPO	NLB	NLB	NLB
Emissions Category	SULEV30/BIN30	SULEV30/BIN30	SULEV30/BIN30
Vehicle Type	TRUCK	TRUCK	TRUCK
Regulatory Agencies	C	C	C
Sales Area	FA/CA	FA/CA	FA/CA
Design Altitude	Both	Both	Both
A/C Equipped	Yes	Yes	Yes
Driver Select Device	Normal, Tow/Haul, Sport, Snow, & Stop/Start Disable	Normal, Tow/Haul, Sport, Offroad, Terrain & Stop/Start Disable	Normal, Tow/Haul & Snow
Police Only	No	No	Yes
Horsepower @ RPM	355 @ 5600	355 @ 5600	355 @ 5600
Torque @ RPM	383 @ 4100	383 @ 4100	383 @ 4100
Emission Ctrl Sys	DFI/2WR-HO2S/2TWC/2HO2S	DFI/2WR-HO2S/2TWC/2HO2S	DFI/2WR-HO2S/2TWC/2HO2S
TapUp/TapDown	No	No	No
Active Fuel Management Description	Dynamic AFM L84 SUV 2WD (5-mode)	Dynamic AFM L84 SUV 4WD (6-mode)	Dynamic AFM L84 Police SUV 2WD &9C1 (3-mode)

Engine Code Information

Base Engine Code	32	61
EC Derivatives		
Test Group	VGMXT05.3330	VGMXT05.3330
Durability Group	VGMXGPGNNB60	VGMXGPGNNB60
Engine RPO	L84	L84
Disp, liters	5.3	5.3
Trans RPO	MHU	MHU
Trans Type	A10	A10
Product Code	--	--
Emission RPO	NLB	NLB
Emissions Category	SULEV30/BIN30	SULEV30/BIN30
Vehicle Type	TRUCK	TRUCK
Regulatory Agencies	C	C
Sales Area	FA/CA	FA/CA
Design Altitude	Both	Both
A/C Equipped	Yes	Yes
Driver Select Device	Normal, Tow/Haul, Offroad & Terrain	Normal, Tow/Haul, Offroad & Terrain
Police Only	Yes	Yes
Horsepower @ RPM	355 @ 5600	355 @ 5600
Torque @ RPM	383 @ 4100	383 @ 4100
Emission Ctrl Sys	DFI/2WR-HO2S/2TWC/2HO2S	DFI/2WR-HO2S/2TWC/2HO2S
TapUp/TapDown	No	No
Active Fuel Management	Dynamic AFM	Dynamic AFM
Description	L84 Municipal SUV 4WD &5W4 (5-mode)	L84 Police SUV 4WD &9C1 (4-mode)

Vehicle Parameters - Certificate Coverage

Durability Group VGMXGPGNNB60
TestGroup VGMXT05.3330

EC Eng				Evap		Trans		Drive		Loaded										RLHP		Drv	
EC	Der	RPO	Disp	Family	Code	Model	Car Line	Type/Code	Ratio	GVWR	Tire	N/V	Veh/DA	Meth	TWC	TLHP	F0	F1	F2	RPO	Sys	Note	
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	265/65R18 AL2 MIC	22.7	6026/302	LWV	6000	18.9	31.90	0.6104	0.03172	&AXP&WNS&WUA-9C1	RD	--		
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	265/65R18 AL2 MIC	22.7	6026/302	LWV	6000	18.0	31.90	0.6104	0.02894	&AXP&WNS-9C1/WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	275/50R22 AL2 BRI	21.8	6026/302	LWV	6000	19.9	36.46	0.6073	0.03294	&AXP&WNS&WUA-9C1	RD	--		
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	275/50R22 AL2 BRI	21.8	6026/302	LWV	6000	19.0	36.46	0.6073	0.03019	&AXP&WNS-9C1/WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	275/60R20 AL2	21.7	6026/302	LWV	6000	18.9	36.13	0.6167	0.02996	&AXP&WNS-9C1/WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	CC10706	TAHOE 2WD	A10/11	3.23	7400	275/60R20 AL2	21.7	6026/302	LWV	6000	19.8	36.13	0.6167	0.03271	&AXP&WNS&WUA-9C1	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	265/65R18 AL2 MIC	22.7	6209/305	LWV	6000	18.3	31.90	0.6104	0.03005	&AXP&WNS-WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	265/65R18 AL2 MIC	22.7	6209/305	LWV	6000	19.3	31.90	0.6104	0.03280	&AXP&WNS&WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	275/50R22 AL2 BRI	21.8	6209/305	LWV	6000	19.3	36.46	0.6073	0.03127	&AXP&WNS-WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	275/50R22 AL2 BRI	21.8	6209/305	LWV	6000	20.3	36.46	0.6073	0.03405	&AXP&WNS&WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	275/60R20 AL2	21.7	6209/305	LWV	6000	19.3	36.13	0.6167	0.03103	&AXP&WNS-WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	CC10906	SUBURBAN 2WD	A10/11	3.23	7600	275/60R20 AL2	21.7	6209/305	LWV	6000	20.2	36.13	0.6167	0.03381	&AXP&WNS&WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	TC10706	YUKON 2WD	A10/11	3.23	7400	275/50R22 AL2 BRI	21.8	5986/298	LWV	6000	19.1	36.46	0.6073	0.03066	&AXP&WNS-9C1/WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	TC10706	YUKON 2WD	A10/11	3.23	7400	275/50R22 AL2 BRI	21.8	5986/298	LWV	6000	20.1	36.46	0.6073	0.03342	&AXP&WNS&WUA-9C1	RD	--		
30	L84	5.3	VGMXR017350D	101	TC10706	YUKON 2WD	A10/11	3.23	7400	275/60R20 AL2	21.7	5986/298	LWV	6000	19.1	36.13	0.6167	0.03043	&AXP&WNS-9C1/WUA	RD	--		
30	L84	5.3	VGMXR017350D	101	TC10706	YUKON 2WD	A10/11	3.23	7400	275/60R20 AL2	21.7	5986/298	LWV	6000	20.0	36.13	0.6167	0.03318	&AXP&WNS&WUA-9C1	RD	--		
30	L84	5.3	VGMXR022450C	102	TC10906	YUKON XL 2WD	A10/11	3.23	7600	275/50R22 AL2 BRI	21.8	6157/301	LWV	6000	19.3	36.46	0.6073	0.03121	&AXP&WNS-WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	TC10906	YUKON XL 2WD	A10/11	3.23	7600	275/50R22 AL2 BRI	21.8	6157/301	LWV	6000	20.2	36.46	0.6073	0.03397	&AXP&WNS&WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	TC10906	YUKON XL 2WD	A10/11	3.23	7600	275/60R20 AL2	21.7	6157/301	LWV	6000	19.3	36.13	0.6167	0.03098	&AXP&WNS-WUA	RD	--		
30	L84	5.3	VGMXR022450C	102	TC10906	YUKON XL 2WD	A10/11	3.23	7600	275/60R20 AL2	21.7	6157/301	LWV	6000	20.2	36.13	0.6167	0.03373	&AXP&WNS&WUA	RD	--		
31	L84	5.3	VGMXR017350D	101	CC10706+9C1	TAHOE 2WD	A10/12	3.23	7400	275/55R20 AL3 FIR	22.5	5880/291	LWV	6000	21.7	42.06	0.7047	0.03417	&9C1&AXP&WNS&WUA	RD	--		
32	L84	5.3	VGMXR017350D	101	CK10706+5W4	TAHOE 4WD	A10/20	3.23	7600	265/65R18 AL2 MIC	22.7	6077/295	LWV	6000	20.6	37.05	0.7192	0.03270	&NP0&5W4&AXP&WNS&WUA-9C1	4D	--		
32	L84	5.3	VGMXR017350D	101	CK10706+5W4	TAHOE 4WD	A10/20	3.23	7600	265/65R18 AL2 MIC	22.7	6077/295	LWV	6000	20.6	37.05	0.7192	0.03270	&NP0&5W4&AXP&WNS&WUA-9C1	4D	--		
32	L84	5.3	VGMXR017350D	101	CK10706+5W4	TAHOE 4WD	A10/20	3.23	7600	275/60R20 AL2	21.7	6077/295	LWV	6000	21.6	41.27	0.7255	0.03368	&NP0&5W4&AXP&WNS&WUA-9C1	4D	--		
32	L84	5.3	VGMXR017350D	101	CK10706+5W4	TAHOE 4WD	A10/20	3.23	7600	275/60R20 AT GDY	21.6	6077/295	LWV	6000	21.8	42.37	0.7429	0.03346	&NP0&5W4&AXP&WNS&WUA-9C1	4D	--		
32	L84	5.3	VGMXR017350D	101	CK10706+5W4	TAHOE 4WD	A10/20	3.23	7600	275/60R20 AT GDY	21.6	6077/295	LWV	6000	21.8	42.37	0.7429	0.03346	&NP0&5W4&AXP&WNS&WUA-9C1	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	265/65R18 AL2 MIC	22.7	6231/306	LWV	6000	19.1	37.05	0.7192	0.02808	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	265/65R18 AL2 MIC	22.7	6231/306	LWV	6000	19.1	37.05	0.7192	0.02808	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	265/65R18 AL2 MIC	22.7	6231/306	LWV	6000	20.0	37.05	0.7192	0.03084	&NP0&AXP&WNS&WUA-5W4/9C1	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/50R22 AL2 BRI	21.8	6231/306	LWV	6000	20.1	41.60	0.7161	0.02933	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/50R22 AL2 BRI	21.8	6231/306	LWV	6000	20.1	41.60	0.7161	0.02933	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/50R22 AL2 BRI	21.8	6231/306	LWV	6000	21.0	41.60	0.7161	0.03208	&NP0&AXP&WNS&WUA-5W4/9C1	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/60R20 AL2	21.7	6231/306	LWV	6000	20.0	41.27	0.7255	0.02909	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/60R20 AL2	21.7	6231/306	LWV	6000	20.0	41.27	0.7255	0.02909	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/60R20 AL2	21.7	6231/306	LWV	6000	21.0	41.27	0.7255	0.03185	&NP0&AXP&WNS&WUA-5W4/9C1	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/60R20 AT GDY	21.6	6231/306	LWV	6000	20.2	42.37	0.7429	0.02887	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	275/60R20 AT GDY	21.6	6231/306	LWV	6000	21.1	42.37	0.7429	0.03162	&NP0&AXP&WNS&WUA-5W4/9C1	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	285/40R24 AL3 BRI	21.7	6231/306	LWV	6000	20.4	41.76	0.7270	0.03006	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR017350D	101	CK10706	TAHOE 4WD	A10/18	3.23	7600	285/40R24 AL3 BRI	21.7	6231/306	LWV	6000	20.4	41.76	0.7270	0.03006	&NP0&AXP&WNS-5W4/9C1/WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	265/65R18 AL2 MIC	22.7	6398/307	LWV	6500	19.8	39.44	0.7291	0.02918	&NP0&AXP&WNS-WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	265/65R18 AL2 MIC	22.7	6398/307	LWV	6500	19.8	39.44	0.7291	0.02918	&NP0&AXP&WNS-WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	265/65R18 AL2 MIC	22.7	6398/307	LWV	6500	20.8	39.44	0.7291	0.03196	&NP0&AXP&WNS&WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	275/50R22 AL2 BRI	21.8	6398/307	LWV	6500	20.9	44.59	0.7264	0.03041	&NP0&AXP&WNS-WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	275/50R22 AL2 BRI	21.8	6398/307	LWV	6500	20.9	44.59	0.7264	0.03041	&NP0&AXP&WNS-WUA	4D	--		
60	L84	5.3	VGMXR022450C	102	CK10906	SUBURBAN 4WD	A10/18	3.23	7700	275/50R22 AL2 BRI	21.8	6398/											

TRANSMISSION INFORMATION

Test Group ID	VGMXT05.3330	VGMXT05.3330	VGMXT05.3330
Transmission Code	11	12	18
Transmission RPO	MHS	MHU	MHS
Transmission Type	A10	A10	A10
Drive Gear Ratios	4.7,2.99,2.15,1.77,1.52,1.28,1,0.85,0.69,0.64	4.7,2.99,2.15,1.77,1.52,1.28,1,0.85,0.69,0.64	4.7,2.99,2.15,1.77,1.52,1.28,1,0.85,0.69,0.64
Chain Drive Ratio	N/A	N/A	N/A
Shift Calibrations	Computer Controlled	Computer Controlled	Computer Controlled
Torque Converter Diameter	260	260	260
Torque Converter Stall Torque Ratio	1.84	1.84	1.84
Torque Converter Lockup RPM'S	Computer Controlled	Computer Controlled	Computer Controlled
Torque Converter Stall Torque Speed	2748@345	2748@345	2748@345
Multimode Feature - # of Modes	5	3	6
Shift Indicator Light	No	No	No
Description	10spd SUV MHS 2WD (5-mode)	10spd SUV MHU 2WD (3-mode)	10spd SUV MHS 4WD (6-mode)
TapUp/TapDown	No	No	No

TRANSMISSION INFORMATION

Test Group ID	VGMXT05.3330	VGMXT05.3330
Transmission Code	19	20
Transmission RPO	MHU	MHU
Transmission Type	A10	A10
Drive Gear Ratios	4.7,2.99,2.15,1.77,1.52,1.28,1,0.85,0.69,0.64	4.7,2.99,2.15,1.77,1.52,1.28,1,0.85,0.69,0.64
Chain Drive Ratio	N/A	N/A
Shift Calibrations	Computer Controlled	Computer Controlled
Torque Converter Diameter	260	260
Torque Converter Stall Torque Ratio	1.84	1.84
Torque Converter Lockup RPM'S	Computer Controlled	Computer Controlled
Torque Converter Stall Torque Speed	2748@345	2748@345
Multimode Feature - # of Modes	4	5
Shift Indicator Light	No	No
Description	10spd SUV MHU 4WD (4-mode)	10spd SUV MHU 4WD (5-mode)
TapUp/TapDown	No	No

SPECIAL TEST INSTRUCTIONS

DRIVER SELECTABLE MODES

Tow/Haul Mode:

Some vehicles are equipped with a trailer tow switch. To select the trailer tow mode, depress the trailer tow switch. The trailer tow light on the instrument panel cluster will illuminate. To go back to the normal operation, press the switch again. The indicator light on the instrument cluster will go out. Upon an engine restart, the trailer tow switch must be reactivated to enter the trailer tow mode.

Tap Shift (Manual Shift) Mode:

To select Tap Shift mode on automatic transmission vehicles (if equipped), move the gear shift lever to the manual mode position. Some vehicles require the additional step of pressing either “+” or “-” on the shifter to engage Tap Shift mode. Please refer to the Owner’s Manual for vehicle specific instructions. To go back to normal automatic mode, move the gear shift lever to “D”.

Other Modes:

Some vehicles are equipped with additional driver selectable modes. These vehicles are equipped with either additional gear shifter positions or a mode selection switch to engage each mode. Please refer to the Owner’s Manual for specific instructions on how to engage each mode.

OTHER

Drive Trace Tolerances:

The driver must attempt to follow the target schedule as closely as possible. Instantaneous speeds must stay within the following tolerances. The upper limit is 2.0 mph higher than the highest point on the trace within 1.0 s of the given point in time. The lower limit is 2.0 mph lower than the lowest point on the trace within 1.0 s of the given time.

Emission Test Vehicle Cooling Requirements:

All testing for this test group must use a road speed fan on all regulated test cycles, as allowed by the regulations (Prime One fan at maximum height and center on front grille).

Canister Loading:

Most General Motors vehicles have a service port for the evaporative system. For vehicles that are not equipped with a service port, an evaporative service access port tool must be utilized. The evaporative service access port tool should be installed between the purge solenoid and the purge line from the evaporative canister. Purging and loading of the evaporative emissions canister must be done through this service port or service port tool. The service port and service port tool consist of a Schrader valve which is in series with the purge line. It can be identified by its green cap.

SPECIAL TEST INSTRUCTIONS (CONT.)

Fuel System Leak Test Procedure:

For evaporative emission families that are certified to Tier 3 and LEV 3 evaporative emission requirements, a fuel system leak test may need to be conducted. To conduct this testing, the outlet of the canister should be sealed. The fuel system is then pressurized by applying nitrogen through the service port. Service port details are outlined in the canister loading instructions.

Evaporative Emissions Testing:

For evaporative emissions testing conducted with test fuels that contain ethanol, General Motors utilizes a photo acoustic infrared analyzer to measure evaporative emissions.

Four-Wheel and All-Wheel Drive Vehicles:

Please contact General Motors Compliance and Certification organization for instructions on how to disable the four-wheel and all-wheel drive systems.

Traction Control and Anti-Lock Braking System (ABS):

Most General Motors vehicles come equipped with an electronic traction control system and an ABS system. During dynamometer testing, these systems will detect the difference in wheel speed between the front and rear wheels, and attempt to correct it by activating ABS and changing engine operation. Therefore, before emissions testing, the systems must be disabled. Some system can be disabled by removing the under-hood ABS fuse, other systems will require a service tool connected to the Diagnostic Link Connector. Please contact General Motors Compliance and Certification organization for instructions on which fuse(s) to remove or service tools required.

Vehicle Moving Procedures for Electronic Transmission Range Selection Equipped Vehicles:

Some General Motors vehicles are equipped with an Electronic Transmission Range Selection (ETRS) transmission. Please contact General Motors Compliance and Certification organization for instructions on how to move these vehicles in the test lab.

Automatic Headlight Systems:

Headlight must be turned off before each emissions or fuel economy test. Please refer to the owner's manual for the location of the switch that controls the headlights.

Parking Brake:

All front wheel drive vehicles must have the parking brake set prior to any dynamometer emission testing.

Tire Pressure and Ballast:

Some vehicles in this test group may require additional ballast and reduction of tire pressure to prevent wheel slip. Please add ballast and change the tire pressure prior to emissions testing, according to the list below. For engine codes not listed, testing should be conducted as specified in the vehicle parameters page.

Silverado/Sierra, All Engine Codes – Add 250 lbs ballast to rear axle and reduce tire pressure to 32 psi.
Suburban/Tahoe/Yukon/Yukon XL, All Engine Codes - Reduce tire pressure to 32 psi.

ENGINE STARTING INSTRUCTIONS

Warm or Cold Engine

For vehicles using a key, do not press down on the accelerator pedal. With your foot off the pedal, crank the engine by turning the ignition key to "Start". Release the key when the engine starts.

For vehicles using a push button start, the keyless access transmitter must be inside the vehicle for the ignition to work. To start the vehicle, do the following: With your foot on the brake pedal, press the START button located on the instrument panel. When the engine begins cranking, let go of the button and the engine cranks automatically until it starts.

Reference Owner's Manual for complete starting instructions.

SHIFT SCHEDULES - NA

Trans Code	Shift Schedule				Recommended Shift Speeds (mph)									
	FTP	Hwy	SC03	US06*1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	

NA – Not Applicable



July 29, 2026

VP054

Mr. D. Cullen
U.S. Environmental Protection Agency
Office of Transportation & Air Quality
Certification & Compliance Division
2000 Traverwood
Ann Arbor, MI 48105

Dear Mr. Cullen:

Subject: Request for Certificate of Conformity - General Motors 2027 Test Group/
Evaporative Families VGMXT05.3330/VGMXR017350D, VGMXR022450C

General Motors requests that the EPA issue certificates of conformity for the subject test group/evaporative families. GM requests the EPA review this application promptly to expedite final approval of the certificates of conformity for the subject test group. Attached to this request is the Part 1 Application.

GM requests that the EPA treat the information contained in this Part 1 Application, or information subsequently submitted for inclusion in this application, as confidential business information under 40 C.F.R. Part 2, Subpart B, and 5 U.S.C. § 552. The EPA's General Counsel made a class determination that information contained in applications for certification is entitled to confidential treatment (see Class Determination 1-13). As such, GM requests that the information described in each Table of the Class Determination be accorded confidential treatment in accordance with the time periods specified.

GM attests that the test group complies with all applicable regulations contained in 40 C.F.R. Parts 85 and 86, and the applicable California Amendments of the EPA regulations it has incorporated, and Title 13 of the California Code of Regulations.

Please review this information as soon as possible and call if you should have any questions regarding this request for certificates of conformity.

Sincerely,

C. S. Meadows

C. S. Meadows
Total Certification Engineer
Compliance & Certification

CSM/ks

general motors

GM Proving Ground / Compliance & Certification / M/C 483-331-500 / 3300 GM Rd. / Milford, MI 48380-3726



July 29, 2026

VP055

Ms. Robin U. Lang, Chief
Emissions Certification and Compliance Division
California Air Resources Board
4001 Iowa Avenue
Riverside, CA 92507

Dear Ms. Lang:

Subject: Request for Executive Order - General Motors 2027 Test Group/Evaporative Families
VGMXT05.3330/VGMXR017350D, VGMXR022450C

General Motors requests that CARB issue an executive order for the subject test group. GM requests that the CARB treat the information contained in this Part 1 Application, or information subsequently submitted for inclusion in this application, as confidential business information pursuant to the California Public Records Act and Sections 91000-91022 of Title 17 of the California Code of Regulations. The information is confidential and sensitive GM business information that constitutes trade secrets and commercial or financial information within the meaning of Section 6254.7 of the California Public Records Act, is entitled to confidential treatment, and will cause substantial competitive harm to GM if released. In the event that CARB does not agree with our position regarding confidential treatment of this information or is considering the public release of this confidential, trade secret, and commercial or financial information, or receives a request for disclosure of the information, we request that you first provide notice to me and we request the opportunity to discuss the material and the need to maintain the confidentiality of this information with you or the CARB General Counsel before any decision is made regarding its release. GM requests that the information be accorded confidential treatment indefinitely.

GM attests that the test group complies with all applicable regulations contained in 40 C.F.R. Parts 85 and 86, and the applicable California Amendments of the EPA regulations that CARB has incorporated and Title 13 of the California Code of Regulations.

GM recognizes that on June 12, 2025, a Congressional Review Act resolution came into effect disapproving the waiver that EPA had issued to CARB granting it authority to enforce the LEV IV regulation, which would have previously controlled for this executive order. In response to CARB's emergency request to temporarily reinstate the agency's LEV III regulations, EPA advised CARB that "...even if a preexisting regulation previously obtained a waiver, such waiver is no longer extant if the regulation became ineffective at any time, whether through the passage of time, repeal, or by any other means." On October 2, 2025, the California Office of Administrative Law approved CARB's emergency amendment intended to temporarily reinstate the agency's LEV III regulations. On March 26, 2026, OAL approved CARB's 90-day extension of its emergency amendment through July 1, 2026. In requesting an executive order consistent with the temporary emergency amendment, GM is not taking a position with respect to the validity or enforceability of any CARB requirements that may have been subject to Congressional Review Act resolutions or for which an EPA waiver of preemption has become ineffective.

general motors

GM Proving Ground / Compliance & Certification / M/C 483-331-500 / 3300 GM Rd. / Milford, MI 48380-3726

The EPA certificate of conformity for this test group will be forwarded to you when it becomes available.

Based upon our review prior to submitting the application for certification and to the best of our current information and belief, the GM vehicles described in this request for executive order do not employ defeat devices, and do not use alternative maps or AECDs that have not been declared, nor does our emission control system include strategies that link transmission controls (input or output) to these AECDs. In addition, we do not use control strategies that would trigger different transmission behavior when driven on an official emission test compared to when driven on the road under the same conditions. We are submitting this statement to you in good faith. If, in the future, we identify any new relevant information, we will notify CARB in a timely fashion.

Please review this information as soon as possible and call if you have any questions regarding this request for an executive order.

Sincerely,

C. S. Meadows

C. S. Meadows
Total Certification Engineer
Compliance & Certification

CSM/ks

EMISSION DATA RATIOS (GASOLINE)

	<u>Data Ratios</u>
NMHC (G/MI) *1	NA
NMOG (G/MI) *2	NA
HCHO (G/MI) *4	NA
NMOG:NMHC *2 (E0 TIER2)	1.04
NMOG:NMHC *3 (E10 LEV3)	1.10 (Cold Start Tests)
NMOG:NMHC *3 (E10 LEV3)	1.03 (Hot Start Tests)
NMOG:NMHC *5 (E10 TIER3)	See Below
NMOG:NMHC *6 (E10 TIER3)	1.03 (Hot Start Tests)
HCHO:NMHC *2	NA

*1 NMHC includes methane response factor.

*2 Effective with the 2004 model year, both EPA and CARB have, through regulatory change, established an industry 1.04 NMHC to NMOG factor which can be used for cert testing for all gasoline tests (does not apply to alcohol fuels).

*3 Effective with LEV3 regulations, 1.10 NMHC to NMOG factor (cold start tests) and 1.03 NMHC to NMOG factor (hot start tests) can be used for cert testing for all gasoline tests (does not apply to alcohol fuels).

*4 HCHO requirements will now be met by a compliance statement for both EPA and CARB (does not apply to alcohol fuels).

*5 Effective with TIER3 regulations, the NMHC to NMOG conversion ratio for cold start tests is a calculation based 1066.635 which is represented by the following:

$$e_{\text{NMOGcomp}} = e_{\text{NMHCcomp}} * (1.0302 + (0.0071 * VP_{\text{EtOH}})) \text{ \{Eq. 1066.635-3\}}$$

*6 Effective with TIER3 regulations, 1.03 NMHC to NMOG factor (hot start tests) can be used for certification testing for all gasoline tests (does not apply to alcohol fuels).



VEHICLE EMISSION CONTROL INFORMATION



GENERAL
MOTORS
LLC

Conforms to Regulations: 2027

U.S. EPA class / stds: LDT / BIN30

California class / stds: LDT / SULEV30

Group: VGMXT05.3330 5.3L

Evap: VGMXR017350D (SWB) 24 Gal; VGMXR022450C (LWB) 28 Gal

DFI/2WR-HO2S/2TWC/2HO2S, CA OBD: II

Fuel: Gasoline

1MY2027L84NLBWNS6

Date: 2605