

Certification Summary Information Report

Manufacturer	Mercedes Benz	Manufacturer Code	MBX
Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Certificate Number	VMBXV03.0HY2-018	CARB Executive Order #	--
Certificate Issue Date	07/15/2026	Certificate Revision Date	--
Certificate Effective Date	07/15/2026	Conditional Certificate	No
CSI Revision #	--	CSI Submission/Revision Date	07/15/2026 02:05:07 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
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Test Group Information

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

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

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

Drive Source #2: Electric Motor

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Electricity	--	--

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	Yes
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	No
Fuel Cell Indicator	No	EPA Vehicle Class	LDV
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	VMBXHHGNNBI2	Durability Group Equivalency Factor	0.7
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	07/17/2026	CAP2000 Conditional Certificate?	No
Independent Commercial Importer?	No	Alternative Fuel Converter Certificate?	No
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	No
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VMBXV03.0HY2
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	1
OBD Deficiencies Comments	E-26-080		
Mfr Test Group Comments	Sales: Federal = Nationwide (50 states), CA = CA + 177 states / Test Group qualifies for Derived 5-Cycle Approach: City Litmus Threshold: 19.6, City FE 20.1 -- Pass / HWY Litmus Threshold: 27.5 , HWY FE: 28.3 -- Pass		
Mfr Exhaust / Evap Standards Comments	--		

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	03/18/2026 06:04:18 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	Plastic				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	No	Air Intake System Vapor Storage Device Description	--				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	163	Number of Primary Canisters	1				
Number of Bleed Canisters	1	Bleed Canister Total Working Capacity (grams)	4				
Mfr Evaporative/Refueling Family Comments	Evap family 170LNS for three 223 S-class models w/ ICE except Maybach S 680 4MATIC and S 580e 4MATIC PHEV (NIRCOS)						
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	Bleed canister integrated in primary canister; cert result: 0.008 g/test; MMBX10068170						
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				
VMBXR0170LNS-LNS	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
Mercedes Benz	1 - Mercedes-Benz	521 - S 500 4MATIC	California + CAA Section 177 states	All Wheel Drive	Automatic	9	Yes
Mercedes Benz	1 - Mercedes-Benz	521 - S 500 4MATIC	Federal	All Wheel Drive	Automatic	9	Yes
Engine Description							
Hybrid Type	IC Engine/Electric Motor			Hybrid Description	--		
Engine Type	4-Stroke Spark Ignition			Mfr Engine Description	--		
Engine Block Arrangement	Inline			Mfr Engine Block Arrangement Description	--		
Camless Valvetrain Indicator	No			Oil Viscosity/Classification	0W20 (229.71 / 229.72)		
Number of Cylinders/Rotors	6			Mechanically Variable Compression Ratio Indicator	N		

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Test Group		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS					
After Treatment Device(s) (ATD)											
ATD Number		ATD Type		ATD Precious Metal		Substrate Material		Substrate Construction			
1		Three-way catalyst		Palladium + Rhodium		Ceramic		Monolith			
2		Three-way catalyst		Palladium + Rhodium		Ceramic		Monolith			
3		Other		no coating		Ceramic		Monolith			
Mfr After Treatment Device (ATD) Comments		ATD #3 = GPF (Gasoline particulate filter)									
Direct Ozone Reduction (DOR) Device		Not Equipped									
Mfr Emission Control Device Comments		--									
Engine Configuration Number 1											
Engine Displacement (liters)		3.0		Engine Rated Horsepower		443					
Number of Inlet Valves Per Cylinder		2		Number of Exhaust Valves Per Cylinder		2					
Air Aspiration Method		Turbocharged+Supercharged		Number of Air Aspiration Devices		2					
Air Aspiration Device Configuration		Series		Charge Air Cooler Type		Liquid					
Air Aspiration Drive Method(s)		Electric, Mechanical									
Cylinder Deactivation		No									
Cylinder Deactivation Description		--									
Variable Valve Timing		Yes									
Variable Valve Timing System Description		Allows timing of the intake/exhaust valves to be changed while the engine is in operation									
Variable Valve Lift?		No									
Variable Valve Lift System Description		--									
Number of Knock Sensors		3		Number of Air/Fuel Sensors		2					
Air/Fuel Sensor # 1 Type		Heated oxygen		Air/Fuel Sensor # 1 Description		--					
Air/Fuel Sensor # 2 Type		Heated oxygen		Air/Fuel Sensor # 2 Description		--					
Mfr Air/Fuel Sensor Comments		--									
Exhaust Gas Recirculation		Yes		Cooled Exhaust Gas Recirculation		No					
EGR Type		Variable Valve Timing Control		Exhaust Gas Recirculation Description if 'Other'		--					
Closed Loop Air Injection System		No									
Air Injection Type		Not Applicable		Air Injection Type if 'Other'		--					
Mfr Engine Configuration Comments		Engine M256M Evo in S500 4MATIC (MOPF)									
Official Test Numbers											
Test Group	Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Gasoline	VMBX10093670	VMBX10093672	VMBX10093703	VMBX10093706	VMBX10093706	VMBX10093671	19.6	19.6	29.1	27.5	--
Electricity	VMBX10093670	VMBX10093672	VMBX10093703	VMBX10093706	VMBX10093706	VMBX10093671	--	--	--	--	--

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Test Group		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS	
SFTP LEV-III Official Test Numbers							
Test Group Fuel		FTP		US06		SC03	
Electricity		VMBX10093670		VMBX10093672		VMBX10093703	
Gasoline		VMBX10093670		VMBX10093672		VMBX10093703	
Hybrid Electric Vehicle And Fuel Cell Information							
Rechargeable Energy Storage System		Battery(s)		Rechargeable Energy Storage System, if Other		--	
Battery Type		Lithium Ion		Number of Battery Packs		1	
Total Voltage of Battery Packs		44		Battery Energy Capacity		17.5	
Battery Specific Energy		57.2		Battery Charger Type		On-Board	
Number of Capacitors		--		Capacitor Rating (In Farads)		--	
Mfr Capacitor Comments		--					
Hydraulic System Description		--					
Regenerative Braking Type		Electrical Regen Brake					
Regenerative Braking Source		Both		Driver Controlled Regenerative Braking		No	
Mfr Regenerative Braking Description		--					
Drive Motor(s)/Generator(s)		1					
Motor/Generator Type 1		permanent magnet synchronous		Rated Motor/Generator Power		17	
Mfr Fuel Cell Description		--					
Fuel Cell On-Board H2 Storage Capacity (kg)		--		Usable H2 Fill Capacity (kg)		--	
Mfr Hybrid Electric/ Electric Vehicle Comments		ISG2 Engine 48V technology					

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS									
Emission Data Vehicle Information												
Vehicle ID / Configuration	V223E30DETC-Z2766 / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	VMBXV03.0HY2	Original Evaporative/Refueling Family	VMBXR0170LNS									
Original Test Vehicle Model Year	2027											
Vehicle Model												
Represented Test Vehicle Make	Mercedes-Benz	Represented Test Vehicle Model	S 500 4MATIC									
Leak Family Details												
Leak Family Identifier	--	Leak Family Name	--									
Drive Sources and Fuel System Details												
	<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> </thead> <tbody> <tr> <td>1</td><td>Electric Motor</td><td>Electricity</td></tr> <tr> <td>2</td><td>Combustion Engine</td><td>Gasoline</td></tr> </tbody> </table>	Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity	2	Combustion Engine	Gasoline		
Drive Source and Fuel#	Drive Source	Fuel										
1	Electric Motor	Electricity										
2	Combustion Engine	Gasoline										
Hybrid Indicator	Yes											
Multiple Fuel Storage	--	Multiple Fuel Combustion	--									
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indicator	Yes									
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Other'	--									
Off-board charge Capable Indicator	No											
Odometer Correction -- Initial	14	Odometer Correction Factor	1									
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor											
Odometer Correction Units	Miles											
Engine Code	M256-30EVO-S2	Rated Horsepower	443									
Displacement (liters)	2.998											
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'										
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Series									
Charge Air Cooler Type	Liquid	Drive Mode While Testing	All Wheel Drive									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	4952	Equivalent Test Weight (pounds)	5250									
GVWR (lbs)	6294	N/V Ratio	21.1									
Axle Ratio	2.82											
Transmission Type	Automatic	# of Transmission Gears	9									
Transmission Lockup	Yes	Creeper Gear	No									

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Test Group		VMBXV03.0HY2			Evaporative/Refueling Family		VMBXR0170LNS	
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	53.5	0.0362	0.02102	1.78	0.01487	0.018721	14.4	
Cold CO	58.85	0.0398	0.02312	-0.083	-0.2066	0.021782	N/A	
US06	53.5	0.0362	0.02102	1.78	0.01487	0.018721	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		285/35 R20; EDV+FEDV configuration; M256M Evo incl. GPF						

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093505	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	02/24/2026	Fuel	Gasoline
Fuel Batch ID	U26I04	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3910	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	14.891	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.579	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	370.2194305	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.7249186	--	
FE BAG 1 (Bag 1 Fuel Economy)	23.6030799	23.6030799	
CH4 BAG 1 (Bag 1 Methane)	0.0087972	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0391	--	
HC-TOTAL BAG 1 (Bag 1 Total Hydrocarbon)	0.0457	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	-15.2666	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.861	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	379.0631865	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0	--	
FE BAG 2 (Bag 2 Fuel Economy)	23.1322315	23.1322315	
CH4 BAG 2 (Bag 2 Methane)	0.0002571	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--	
HC-TOTAL BAG 2 (Bag 2 Total Hydrocarbon)	0.0002	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	-9.4067	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.587	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	314.2042821	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0982303	--	
FE BAG 3 (Bag 3 Fuel Economy)	27.8933678	27.8933678	
CH4 BAG 3 (Bag 3 Methane)	0.0008398	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0001	--	
HC-TOTAL BAG 3 (Bag 3 Total Hydrocarbon)	0.0008	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	-5.8616	--	
ACT-DISTANCE BAG 4 (Bag 4 Actual Distance)	3.864	--	
CO2 BAG 4 (Bag 4 Carbon Dioxide)	370.5613929	--	
CO BAG 4 (Bag 4 Carbon Monoxide)	0.0299786	--	
FE BAG 4 (Bag 4 Fuel Economy)	23.659925	23.659925	
CH4 BAG 4 (Bag 4 Methane)	0.0002417	--	
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0.0001	--	

Manufacturer Test Comments	285/35 R20; Tier 2 E0 for GHG incl. fuel economy data for labeling purposes
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Test Group		VMBXV03.0HY2			Evaporative/Refueling Family					VMBXR0170LNS		
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	355	--	--	--	0.1705	--	355	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0022	--	--	--	0.0018	--	0.004	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0002	--	--	--	0.0001	--	0	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.19	--	--	--	0.13	--	0.3	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0081	--	1.1	--	0.004	--	0.012	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0111	--	--	--	--	--	0.02	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.003	--	--	--	0.0047	--	0.008	99.999	Pass
CA	120,000 miles	California LEV-III SULEV30	CREE	355	--	--	--	0.1705	--	355	--	--
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0022	--	--	--	0.0018	--	0.004	0.030	Pass
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0002	--	--	--	0.0001	--	0	0.010	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.19	--	--	--	0.13	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0081	--	1.1	--	0.004	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0111	--	--	--	--	--	0.02	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.003	--	--	--	0.0047	--	0.008	99.999	Pass

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

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093670	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	03/18/2026	Fuel	Gasoline
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4331	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Certification Summary Information Report

Test Group	VMBOXV03.0HY2	Evaporative/Refueling Family	VMBOXR0170LNS
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	14.892	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.587	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	362.203671	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.4775762	--	
FE BAG 1 (Bag 1 Fuel Economy)	24.0351755	24.0351755	
CH4 BAG 1 (Bag 1 Methane)	0.0097051	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0302	--	
HC-TOTAL BAG 1 (Bag 1 Total Hydrocarbon)	0.0363	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	-24.7589	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.854	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	355.9892792	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0089906	--	
FE BAG 2 (Bag 2 Fuel Economy)	24.5115405	24.5115405	
CH4 BAG 2 (Bag 2 Methane)	0.0004188	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0015	--	
HC-TOTAL BAG 2 (Bag 2 Total Hydrocarbon)	0.0017	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	2.1603	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.589	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	299.3181662	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0944253	--	
FE BAG 3 (Bag 3 Fuel Economy)	29.1388061	29.1388061	
CH4 BAG 3 (Bag 3 Methane)	0.0022117	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0005	--	
HC-TOTAL BAG 3 (Bag 3 Total Hydrocarbon)	0.0025	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	-10.1504	--	
ACT-DISTANCE BAG 4 (Bag 4 Actual Distance)	3.862	--	
CO2 BAG 4 (Bag 4 Carbon Dioxide)	348.4165571	--	
CO BAG 4 (Bag 4 Carbon Monoxide)	0.0020219	--	
FE BAG 4 (Bag 4 Fuel Economy)	25.0450252	25.0450252	
CH4 BAG 4 (Bag 4 Methane)	0.0003857	--	
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0.0016	--	

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Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS																																													
<table><tr><td>HC-TOTAL BAG 4 (Bag 4 Total Hydrocarbon)</td><td>0.0018</td><td>--</td></tr><tr><td>WATT-HRS BAG 4 (Bag 4 Watt Hours)</td><td>-6.9811</td><td>--</td></tr><tr><td>METHANE (CH4 - Methane)</td><td>0.0028263</td><td>--</td></tr><tr><td>CO (Carbon Monoxide)</td><td>0.1275251</td><td>--</td></tr><tr><td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td><td>0.2567</td><td>--</td></tr><tr><td>DT-EER (Drive Trace Energy Economy Rating)</td><td>-0.9667</td><td>--</td></tr><tr><td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td><td>0.1198</td><td>--</td></tr><tr><td>MFR FE (Manufacturer Fuel Economy)</td><td>25.6876228</td><td>25.6876228</td></tr><tr><td>NOX (Nitrogen Oxide)</td><td>0.0030633</td><td>--</td></tr><tr><td>N2O (Nitrous Oxide)</td><td>0.000184</td><td>--</td></tr><tr><td>HC-NM (Non-methane Hydrocarbon)</td><td>0.0065213</td><td>--</td></tr><tr><td>NMOG (Non-methane organic gases)</td><td>0.0071687</td><td>--</td></tr><tr><td>PM (Particulate Matter)</td><td>0.0000386</td><td>--</td></tr><tr><td>HC-TOTAL (Total Hydrocarbon)</td><td>0.0091066</td><td>--</td></tr><tr><td>WATT-HRS (Watt Hours)</td><td>-39.7301</td><td>--</td></tr></table>				HC-TOTAL BAG 4 (Bag 4 Total Hydrocarbon)	0.0018	--	WATT-HRS BAG 4 (Bag 4 Watt Hours)	-6.9811	--	METHANE (CH4 - Methane)	0.0028263	--	CO (Carbon Monoxide)	0.1275251	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.2567	--	DT-EER (Drive Trace Energy Economy Rating)	-0.9667	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.1198	--	MFR FE (Manufacturer Fuel Economy)	25.6876228	25.6876228	NOX (Nitrogen Oxide)	0.0030633	--	N2O (Nitrous Oxide)	0.000184	--	HC-NM (Non-methane Hydrocarbon)	0.0065213	--	NMOG (Non-methane organic gases)	0.0071687	--	PM (Particulate Matter)	0.0000386	--	HC-TOTAL (Total Hydrocarbon)	0.0091066	--	WATT-HRS (Watt Hours)	-39.7301	--
HC-TOTAL BAG 4 (Bag 4 Total Hydrocarbon)	0.0018	--																																														
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WATT-HRS (Watt Hours)	-39.7301	--																																														
<table><tr><td>Test Result Name</td><td>Unrounded Test Result</td><td>Verify Calculated CREE/OPT-CREE</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>340</td><td>339</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	Carbon-Related Exhaust Emissions	340	339																																							
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE																																														
Carbon-Related Exhaust Emissions	340	339																																														
<table><tr><td>Test Result Name</td><td>Unrounded Test Result</td><td>Verify Calculated CO2</td></tr><tr><td>Carbon dioxide</td><td>339.4809512</td><td>--</td></tr></table>				Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	339.4809512	--																																							
Test Result Name	Unrounded Test Result	Verify Calculated CO2																																														
Carbon dioxide	339.4809512	--																																														
Manufacturer Test Comments	285/35 R20; Tier 3 E10 fuel																																															

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family					VMBXR0170LNS		
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	339	--	--	--	0.1705	--	339	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0028	--	--	--	0.0018	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0002	--	--	--	0.0001	--	0	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.13	--	--	--	0.13	--	0.3	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.39	--	--	--	--	--	0.4	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0072	--	1.1	--	0.004	--	0.011	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0103	--	--	--	--	--	0.019	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0186	--	--	--	--	--	0.019	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0031	--	--	--	0.0047	--	0.008	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0	--	--	--	0	--	0	0.003	Pass
CA	120,000 miles	California LEV-III SULEV30	CREE	339	--	--	--	0.1705	--	339	--	--
CA	120,000 miles	California LEV-III SULEV30	METHANE	0.0028	--	--	--	0.0018	--	0.005	0.030	Pass
CA	120,000 miles	California LEV-III SULEV30	N2O	0.0002	--	--	--	0.0001	--	0	0.010	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.13	--	--	--	0.13	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	CO-COMP	0.39	--	--	--	--	--	0.4	4.2	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0072	--	1.1	--	0.004	--	0.011	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0103	--	--	--	--	--	0.019	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX-COMP	0.0186	--	--	--	--	--	0.019	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0031	--	--	--	0.0047	--	0.008	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0	--	--	--	0	--	0	0.001	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	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093705	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	03/13/2026	Fuel	Gasoline
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4285	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	11.025	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.589	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	416.6928	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.3989	--	
FE BAG 1 (Bag 1 Fuel Economy)	20.9029	20.9029	
CH4 BAG 1 (Bag 1 Methane)	0.0113	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.043	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	-98.0884	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.845	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	361.8063	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.041	--	
FE BAG 2 (Bag 2 Fuel Economy)	24.1143	24.1143	
CH4 BAG 2 (Bag 2 Methane)	0.0006	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0003	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	76.6948	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.591	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	316.2064	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0971	--	
FE BAG 3 (Bag 3 Fuel Economy)	27.5829	27.5829	
CH4 BAG 3 (Bag 3 Methane)	0.0026	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0001	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	-18.1923	--	
METHANE (CH4 - Methane)	0.0034	--	
CO (Carbon Monoxide)	0.1307	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	2.845	--	
DT-EER (Drive Trace Energy Economy Rating)	1.314	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	4.535	--	
MFR FE (Manufacturer Fuel Economy)	24.1802	24.1802	
NOX (Nitrogen Oxide)	0.0053	--	
N2O (Nitrous Oxide)	0.0003	--	
HC-NM (Non-methane Hydrocarbon)	0.0082	--	

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family				VMBXR0170LNS			
		NMOG (Non-methane organic gases)		0.0091		--						
		HC-TOTAL (Total Hydrocarbon)		0.0114		--						
		WATT-HRS (Watt Hours)		-39.5859		--						

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093706	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)
Test Date	03/06/2026	Fuel	Gasoline
Fuel Batch ID	U25C06	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4215	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	11.066	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.596	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	522.2343	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.4822	--	
FE BAG 1 (Bag 1 Fuel Economy)	16.6201	16.6201	
CH4 BAG 1 (Bag 1 Methane)	0.0195	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.1025	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	-34.9006	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.871	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	444.1134	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0316	--	
FE BAG 2 (Bag 2 Fuel Economy)	19.5822	19.5822	
CH4 BAG 2 (Bag 2 Methane)	0.0007	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	11.5302	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.599	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	348.2205	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0601	--	
FE BAG 3 (Bag 3 Fuel Economy)	24.9705	24.9705	
CH4 BAG 3 (Bag 3 Methane)	0.0023	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	-16.9222	--	
METHANE (CH4 - Methane)	0.005	--	
CO (Carbon Monoxide)	0.1328	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.114	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.56	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.236	--	
MFR FE (Manufacturer Fuel Economy)	20.0299	20.0299	
NOX (Nitrogen Oxide)	0.0106	--	
N2O (Nitrous Oxide)	0.0005	--	
HC-NM (Non-methane Hydrocarbon)	0.0193	--	

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family				VMBXR0170LNS			
		NMOG (Non-methane organic gases)		0.0212		--						
		HC-TOTAL (Total Hydrocarbon)		0.0239		--						
		WATT-HRS (Watt Hours)		-40.2926		--						
		Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE						
		Carbon-Related Exhaust Emissions		435		--						
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		433.9563		--						
Manufacturer Test Comments		285/35 R20; Cold CO Tier 3 fuel										
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	0.13	--	--	--	0.04	--	0.2	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.0193	--	--	--	0.0028	--	0.022	0.100	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	0.13	--	--	--	0.04	--	0.2	10.0	Pass

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093506	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	02/24/2026	Fuel	Gasoline
Fuel Batch ID	U26I04	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3925	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes
Test Results			
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	10.24	--	
METHANE (CH4 - Methane)	0.0001984	--	
CO (Carbon Monoxide)	0.0052702	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.4585	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.8222	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.5694	--	
MFR FE (Manufacturer Fuel Economy)	40.2334478	40.2334478	
NOX (Nitrogen Oxide)	0.0022404	--	
N2O (Nitrous Oxide)	0	--	
HC-NM (Non-methane Hydrocarbon)	0	--	
NMOG (Non-methane organic gases)	0	--	
HC-TOTAL (Total Hydrocarbon)	0.0001778	--	
WATT-HRS (Watt Hours)	-16.3883	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	217.9428861	217	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	217.9340484	--	
Manufacturer Test Comments	285/35 R20; Tier 2 E0 for GHG incl. fuel economy data for labeling purposes		

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family					VMBXR0170LNS		
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	217	--	--	--	0.1705	--	217	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0	--	1.03	--	0.004	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0022	--	--	--	--	--	0.011	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0022	--	--	--	0.0047	--	0.007	99.999	Pass
CA	120,000 miles	California LEV-III SULEV30	CREE	217	--	--	--	0.1705	--	217	--	--
CA	150,000 miles	California LEV-III SULEV30	NMOG	0	--	1.03	--	0.004	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0022	--	--	--	--	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0022	--	--	--	0.0047	--	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	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093671	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	02/25/2026	Fuel	Gasoline
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4008	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
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)
ACT-DISTANCE (Actual Distance Driven (miles))	10.247	--
METHANE (CH4 - Methane)	0.0001509	--
CO (Carbon Monoxide)	0.0096152	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.0344	--
DT-EER (Drive Trace Energy Economy Rating)	-0.9257	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.6486	--
MFR FE (Manufacturer Fuel Economy)	41.0706157	41.0706157
NOX (Nitrogen Oxide)	0.0020888	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0001535	--
NMOG (Non-methane organic gases)	0.0001581	--
PM (Particulate Matter)	0.0000351	--
HC-TOTAL (Total Hydrocarbon)	0.0002915	--
WATT-HRS (Watt Hours)	-12.6303	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	213	212

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	212.4550637	--

Manufacturer Test Comments 285/35 R20; Tier 3 E10 fuel

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family					VMBXR0170LNS		
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	212	--	--	--	0.1705	--	212	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0002	--	1.03	--	0.004	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0023	--	--	--	--	--	0.011	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0021	--	--	--	0.0047	--	0.007	99.999	Pass
CA	120,000 miles	California LEV-III SULEV30	CREE	212	--	--	--	0.1705	--	212	--	--
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0002	--	1.03	--	0.004	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0023	--	--	--	--	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.0021	--	--	--	0.0047	--	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	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093672	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	02/25/2026	Fuel	Gasoline
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4031	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes
Test Results			

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	8.025	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	1.789	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	539.70957	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.6831861	--	
FE BAG 1 (Bag 1 Fuel Economy)	16.1341027	16.1341027	
CH4 BAG 1 (Bag 1 Methane)	0.0059119	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.021	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	-110.5327	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	6.236	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	275.3293269	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.3858499	--	
FE BAG 2 (Bag 2 Fuel Economy)	31.6205385	31.6205385	
CH4 BAG 2 (Bag 2 Methane)	0.0025353	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0092	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	93.1814	--	
METHANE (CH4 - Methane)	0.003288	--	
CO (Carbon Monoxide)	0.4521265	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.2623	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.0077	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.8434	--	
MFR FE (Manufacturer Fuel Economy)	26.0475778	26.0475778	
NOX (Nitrogen Oxide)	0.0042384	--	
N2O (Nitrous Oxide)	0.0002119	--	
HC-NM (Non-methane Hydrocarbon)	0.011508	--	
NMOG (Non-methane organic gases)	0.0118532	--	
PM (Particulate Matter)	0.001321	--	
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0157464	--	
HC-TOTAL (Total Hydrocarbon)	0.0145154	--	
WATT-HRS (Watt Hours)	-13.4053	--	

Certification Summary Information Report

Test Group		VMBXV03.0HY2				Evaporative/Refueling Family				VMBXR0170LNS			
		Test Result Name		Unrounded Test Result			Verify Calculated CO2						
		Carbon dioxide		334.2599426			--						
Manufacturer Test Comments		285/35 R20; Tier 3 E10 fuel											
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	PM	0.0013	--	--	--	0	--	0.001	0.006	Pass	
CA	150,000 miles	California LEV-III SULEV30	PM	0.0013	--	--	--	0	--	0.001	0.006	Pass	

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	VMBX10093703	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	02/25/2026	Fuel	N/A
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4047	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
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)
ACT-DISTANCE (Actual Distance Driven (miles))	3.582	--
METHANE (CH4 - Methane)	0.0022523	--
CO (Carbon Monoxide)	0.2263354	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.2483	--
DT-EER (Drive Trace Energy Economy Rating)	-0.3051	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.2242	--
MFR FE (Manufacturer Fuel Economy)	20.2139087	20.2139087
NOX (Nitrogen Oxide)	0.0025815	--
N2O (Nitrous Oxide)	7E-7	--
HC-NM (Non-methane Hydrocarbon)	0.0021732	--
NMOG (Non-methane organic gases)	0.0022384	--
PM (Particulate Matter)	0.0000528	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0047547	--
HC-TOTAL (Total Hydrocarbon)	0.0042333	--
WATT-HRS (Watt Hours)	-18.5426	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	431.3301203	--

Manufacturer Test Comments

285/35 R20; Tier 3 E10 fuel

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
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Emission Data Vehicle Information

Vehicle ID / Configuration	V223E40DETC-Z2148 / 0	Manufacturer Vehicle Configuration Number	2
Original Test Group Name	MMBXV04.0HY1	Original Evaporative/Refueling Family	MMBXR0170LND
Original Test Vehicle Model Year	2021		

Vehicle Model

Represented Test Vehicle Make	Mercedes-Benz	Represented Test Vehicle Model	S 580 4MATIC
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Leak Family Details

Leak Family Identifier	LND	Leak Family Name	MMBXR0170LND-LND
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Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline
2	Electric Motor	Electricity

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	Multiple Fuel Combustion	--
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indicator	No
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Other'	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	95	Odometer Correction Factor	0.9886
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	M176-40DETC	Rated Horsepower	496
Displacement (liters)	3.982		
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel
Charge Air Cooler Type	Liquid	Drive Mode While Testing	4-Wheel Drive
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	4942	Equivalent Test Weight (pounds)	5250
GVWR (lbs)	6210	N/V Ratio	19.7
Axle Ratio	2.65		
Transmission Type	Automatic	# of Transmission Gears	9
Transmission Lockup	Yes	Creep Gear	No

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
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Dynamometer Coefficients:

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	62.72	0.0362	0.01903	3.759	0.08354	0.016303	14.9
US06	62.72	0.0362	0.01903	3.759	0.08354	0.016303	N/A

Emission Control Device Comments Engine: 496 HP combustion and 20 HP electric

Manufacturer Test Vehicle Comments 285/40 R19 ; EVAP testing configuration

Test #	MMBX10068338	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	MMBX10068336	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	01/26/2021	Fuel	Gasoline
Fuel Batch ID	U21R14	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4170	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	--	Road Speed Fan Usage	--

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL (Total Hydrocarbon)	0.286	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3092	--

Manufacturer Test Comments MY2021 (V223) 3Day EVAP Test Result. Hot Soak: 0.1102 g HC-Total-EQUIV. MFR Conducted Confirmatory Testing

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	0.3092	0	0.309	0.325	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3092	0	0.309	0.325	Pass

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	MMBX91004730	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	MMBX91004726	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	03/16/2021	Fuel	Gasoline
Fuel Batch ID	27626	Fuel Calibration Number	2
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4331	Odometer Units	M
4WD Test Dyno	No	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	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.285436	--

Manufacturer Test Comments

Hot_Soak_HC_(g) = 0.061215, Diurnal (gHC) = 0.224221

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	0.2854	0	0.285	0.325	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2854	0	0.285	0.325	Pass

Certification Summary Information Report

Test Group	VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS												
Test #	MMBX10068172		Test Procedure		24 - Federal fuel refueling test (ORVR)												
Exhaust Test # for this Evap Test	MMBX10068171		Test Fuel Type		49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)												
Test Date	12/17/2020		Fuel		Gasoline												
Fuel Batch ID	U21R13		Fuel Calibration Number		1												
Vehicle Class	N/A		DF Type		Mfr. Determined												
Verify Test Lab ID	3953 Research Park Drive																
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																
Test Start Odometer Reading	3998		Odometer Units		M												
4WD Test Dyno	No		Diesel Adjustment Factor Usage		--												
State of Charge Delta	--																
Drive Cycle Speed Tolerance Criteria	--		Road Speed Fan Usage		--												
Test Results																	
<table border="1"> <thead> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value</th> </tr> </thead> <tbody> <tr> <td>HC (Hydrocarbon for Running Loss and ORVR)</td> <td>0.0005</td> <td>--</td> </tr> <tr> <td>OMHCE (Organic material Hydrocarbon Equivalent)</td> <td>0.00054</td> <td>--</td> </tr> </tbody> </table>			Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC (Hydrocarbon for Running Loss and ORVR)	0.0005	--	OMHCE (Organic material Hydrocarbon Equivalent)	0.00054	--						
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value															
HC (Hydrocarbon for Running Loss and ORVR)	0.0005	--															
OMHCE (Organic material Hydrocarbon Equivalent)	0.00054	--															
Manufacturer Test Comments																	
MY2021 (V223) ORVR EVAP Test Result																	
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	OMHCE	0.001	0.016	0.02	0.2	Pass									
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.001	0.016	0.02	0.2	Pass									

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Test #	MMBX10068337	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	MMBX10068336	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	01/26/2021	Fuel	Gasoline
Fuel Batch ID	U21R14	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	3953 Research Park Drive		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4153	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	--	Road Speed Fan Usage	--

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00035	--

Manufacturer Test CommentsMY2021 (V223) Running Loss Test. Tier 3 E10 fuel. 0.000322 g/mi HC. MFR Conducted Confirmatory Testing

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0	0	0	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0	0	0	0.05	Pass

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS						
Test #	MMBX10068170	Test Procedure	65 - Evap Canister Bleed Test						
Exhaust Test # for this Evap Test	--	Test Fuel Type	47 - CARB LEV3 E10 Premium Gasoline						
Test Date	01/14/2019	Fuel	Gasoline						
Fuel Batch ID	--	Fuel Calibration Number	--						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	3953 Research Park Drive								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	3900	Odometer Units	M						
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--						
State of Charge Delta	--								
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 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</th> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td>0.008</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC-TOTAL (Total Hydrocarbon)	0.008	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
HC-TOTAL (Total Hydrocarbon)	0.008	--							
Manufacturer Test Comments									
BETP conducted at the EVAP canister supplier Kayser in Einbeck, Germany. Therefore vehicle and test lab values are Dummy values only. Three different samples have been tested with test results ranging btw. 6 - 8 mg HC									
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	0.008	0	0.008	0.02	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL	0.008	0	0.008	0.02	Pass	

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Fuel Properties			
Fuel Batch ID	U26R13	Fuel Calibration Number	1
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	01/07/2026
Fuel Batch Calibration Effective Date	03/10/2026	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	0.754
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.72	Fuel Carbon Mass Fraction (E10)	0.83
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	U26I04	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	08/20/2025
Fuel Batch Calibration Effective Date	01/23/2026	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	0.735
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18455
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.857	Weight Fraction CO2	--
Fuel Batch ID	U21R14	Fuel Calibration Number	1
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/24/2020
Fuel Batch Calibration Effective Date	01/20/2021	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	0.743
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17587
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.823	Weight Fraction CO2	--
Fuel Batch ID	U25C06	Fuel Calibration Number	1
Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)	Fuel Batch Calibration Date	04/11/2024
Fuel Batch Calibration Effective Date	05/17/2024	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--

Certification Summary Information Report

Test Group	VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.745
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.39	Fuel Carbon Mass Fraction (E10)	0.827
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	U21R13	Fuel Calibration Number	1
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/24/2020
Fuel Batch Calibration Effective Date	12/15/2020	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	0.743
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17587
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.823	Weight Fraction CO2	--
Fuel Batch ID	27626	Fuel Calibration Number	2
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	12/11/2018
Fuel Batch Calibration Effective Date	12/11/2018	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 (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18001
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.825	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family			VMBXR0170LNS		
Consolidated List of Standards										
Exhaust Standards										
Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			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	PM	--	--	--	--	--	--	0	0.006	
Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.04	10.0	
120,000 miles	HC-NM	--	--	--	--	--	--	0.0028	0.100	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			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	CREE	--	--	--	--	--	--	0.1705	999	
120,000 miles	METHANE	--	--	--	--	--	--	0.0018	0.030	
120,000 miles	N2O	--	--	--	--	--	--	0.0001	0.010	
150,000 miles	CO	--	--	--	--	--	--	0.13	1.0	
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2	
150,000 miles	NMOG	--	--	1.1	--	--	--	0.004	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.030	
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.030	
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.999	
150,000 miles	PM	--	--	--	--	--	--	0	0.001	

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family			VMBXR0170LNS	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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
120,000 miles	CREE	--	--	--	--	--	--	0.1705	999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.004	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.999
Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.1705	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0018	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0001	0.010
150,000 miles	CO	--	--	--	--	--	--	0.13	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	NMOG	--	--	1.1	--	--	--	0.004	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.04	10.0

Certification Summary Information Report

Test Group		VMBXV03.0HY2			Evaporative/Refueling Family			VMBXR0170LNS	
Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.1705	999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.004	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	--	1.0
4,000 miles	NMOG	--	--	1.1	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.060
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDV/Passenger Car			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	PM	--	--	--	--	--	--	0	0.006

Evaporative/Refueling Standards

Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		Federal	
Cert/In-Use Code		Both		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	--		0.325	0	

Certification Summary Information Report

Test Group		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS	
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		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	--	0.325	0		
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		Federal	
Cert/In-Use Code		Both		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	--	0.325	0		
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		Federal	
Cert/In-Use Code		Both		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	OMHCE	--	0.20	0.016		
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		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	--	0.325	0		
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		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	OMHCE	--	0.20	0.016		

Certification Summary Information Report

Test Group		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS					
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		Federal					
Cert/In-Use Code		Both		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	
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		California + CAA Section 177 states					
Cert/In-Use Code		Both		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	
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		Federal					
Cert/In-Use Code		Both		Standard Level		Federal Tier 3 Evap					
Test Procedure		Federal Fuel Running Loss									
Fuel		Useful Life		Emission Name		Rounded Result		Std		Add DF	
Gasoline		150,000 miles		HC-TOTAL-EQUIV		--		0.05		0	
Evaporative/Refueling Family		VMBXR0170LNS		Cert Region		California + CAA Section 177 states					
Cert/In-Use Code		Both		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	

Certification Summary Information Report

Test Group		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS	
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		VMBXV03.0HY2	Evaporative/Refueling Family		VMBXR0170LNS
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

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Test Group		VMBXV03.0HY2	Evaporative/Refueling Family	VMBXR0170LNS
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		VMBXV03.0HY2		Evaporative/Refueling Family		VMBXR0170LNS	
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		