

Certification Summary Information Report

Manufacturer	Volvo Car USA, LLC	Manufacturer Code	VVX
Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Certificate Number	VVVXT02.0P34-007	CARB Executive Order #	--
Certificate Issue Date	08/07/2026	Certificate Revision Date	--
Certificate Effective Date	08/07/2026	Conditional Certificate	No
CSI Revision #	--	CSI Submission/Revision Date	07/01/2026 04:00:33 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6						
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								
	<table border="1"> <tr> <th>Fuel</th><th>Basic Fuel Metering System</th><th>Lean Burn Strategy Indicator</th></tr> <tr> <td>Gasoline</td><td>Spark Ignition Direct fuel injection</td><td>No</td></tr> </table>	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator	Gasoline	Spark Ignition Direct fuel injection	No		
Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator							
Gasoline	Spark Ignition Direct fuel injection	No							
Drive Source #2:	Electric Motor								
	<table border="1"> <tr> <th>Fuel</th><th>Basic Fuel Metering System</th><th>Lean Burn Strategy Indicator</th></tr> <tr> <td>Electricity</td><td>--</td><td>No</td></tr> </table>	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator	Electricity	--	No		
Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator							
Electricity	--	No							
Hybrid Indicator	Yes								
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	Yes						
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	Yes						
Fuel Cell Indicator	No	EPA Vehicle Class	LDT4, LDT2						
Federal Clean Fuel Vehicle	No	Federal Clean Fuel Vehicle Standard	--						
Federal Clean Fuel Vehicle ILEV	No	California Partial Zero Emissions Vehicle Indicator	Yes						
Durability Group Name	VVVXHHGVNLV3	Durability Group Equivalency Factor	1.0						
Reduced Fee Test Group	No	Certification Region Code(s)	FA, CA						
Complies with HD GHG 2b/3 regulations?	No								
Introduction into Commerce Date	07/31/2026	CAP2000 Conditional Certificate?	No						
Independent Commercial Importer?	No	Alternative Fuel Converter Certificate?	No						
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	No						
SFTP LEV-III Composite Compliance Indicator	Yes								
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VVVXT02.0P34						
Test Group OBD Compliance Level	Partial - with deficiencies and penalty	Number of Test Group OBD Deficiencies	8						
OBD Deficiencies Comments	Pending OBD approval								
Mfr Test Group Comments	2.0 L direct injection gasoline and electric hybrid technology. New DDV, EDV, New Evaporative DDV, EDV. TZEV group meeting CARB LEV III SULEV 30 standards bleed emissions 0.020 grams standard, NIRCO systems exempt per section 1876(G) 1.b. Testgroup is certified with EPA Interim TIER 4 standard								
Mfr Exhaust / Evap Standards Comments	--								

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	03/20/2026 03:42:01 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	Coextruder 6 layer				
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)	142	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	0				
Mfr Evaporative/Refueling Family Comments	New evaporative durability and EDV test. Tier 3 ORVR and LEV 3 evap. LDT2. XC60 T8 AWD, XC90 T8 AWD hybrids. No testing or std for canister bleed emissions because PHEV vehicle is equipped with NIRCO system. Bleed integrated into canister.						
Leak Family Details							
Leak Family Indicator	Yes						
Canister Bleed Test Indicator	No	Applicability of Evaporative Canister Bleed Test	--				
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				
VVVXR0142EP6-001	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
Volvo Car USA, LLC	1 - Volvo Cars of North America, LLC	298 - XC90 T8 AWD	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
Volvo Car USA, LLC	1 - Volvo Cars of North America, LLC	298 - XC90 T8 AWD	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Volvo Car USA, LLC	1 - Volvo Cars of North America, LLC	299 - XC60 T8 AWD	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Volvo Car USA, LLC	1 - Volvo Cars of North America, LLC	299 - XC60 T8 AWD	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6	
Engine Description				
Hybrid Type	IC Engine/Electric Motor	Hybrid Description	--	
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description	gasoline direct injection/electric hybrid	
Engine Block Arrangement	Inline	Mfr Engine Block Arrangement Description	--	
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	0W-20 / C6 (API SP)	
Number of Cylinders/Rotors	4	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	Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Metal	Monolith
Mfr After Treatment Device (ATD) Comments				
There are 2 catalyst units but only 1 TWC part number. 3 oxygen sensors monitor unit.				
Direct Ozone Reduction (DOR) Device				
Not Equipped				
Mfr Emission Control Device Comments				
--				
Engine Configuration Number 1				
Engine Displacement (liters)	2.0	Engine Rated Horsepower	312	
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2	
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	1	
Air Aspiration Device Configuration	Single	Charge Air Cooler Type	Air	
Air Aspiration Drive Method(s)	Mechanical			
Cylinder Deactivation	No			
Cylinder Deactivation Description	--			
Variable Valve Timing	Yes			
Variable Valve Timing System Description	Timing on both intake and exhaust sides.			
Variable Valve Lift?	No			
Variable Valve Lift System Description	N/A			
Number of Knock Sensors	2	Number of Air/Fuel Sensors	3	
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	--	
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	No			
Air Injection Type	Not Applicable	Air Injection Type if 'Other'	--	
Mfr Engine Configuration Comments	All variants/models are AWD.			

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Test Group		VVVXT02.0P34				Evaporative/Refueling Family		VVVXR0142EP6		
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	VVVX10093500	VVVX10093472	VVVX10093502	VVVX10093503	VVVX10093501	--	19.2	--	23.6	1
Electricity	--	--	--	--	--	--	--	--	--	0
SFTP LEV-III Official Test Numbers										
Test Group Fuel	FTP		US06		SC03					
Gasoline	VVVX10093500		VVVX10093472		VVVX10093502					
Official Charge Depleting Test Numbers										
Test Group Fuel	UDDS			Highway						
Gasoline	--			--						
Electricity	VVVX10093423			VVVX10094672						
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	369				Battery Energy Capacity		51			
Battery Specific Energy	141.4				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	Rear Wheels				Driver Controlled Regenerative Braking		No			
Mfr Regenerative Braking Description	--									
Drive Motor(s)/Generator(s)	2									
Motor/Generator Type 1	PMSM				Rated Motor/Generator Power		115			
Motor/Generator Type 2	CDPM				Rated Motor/Generator Power		52			
Mfr Fuel Cell Description	--									
Fuel Cell On-Board H2 Storage Capacity (kg)	--				Usable H2 Fill Capacity (kg)		--			
Mfr Hybrid Electric/ Electric Vehicle Comments	Cranck ISG only support ICE = CDPM (CD Permanent Magnet brushed) Rear electric motor = PMSM (Permanent Magnet Synchronised motor)									

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6									
Emission Data Vehicle Information												
Vehicle ID / Configuration	202701 / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	VVVXT02.0P34	Original Evaporative/Refueling Family	VVVXR0142EP6									
Original Test Vehicle Model Year	2027											
Vehicle Model												
Represented Test Vehicle Make	Volvo	Represented Test Vehicle Model	XC90 T8 AWD									
Leak Family Details												
Leak Family Identifier	001	Leak Family Name	VVVXR0142EP6-001									
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	Yes											
Odometer Correction -- Initial	0	Odometer Correction Factor	1.0062									
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles											
Odometer Correction Units	Kilometers											
Engine Code	HD_1	Rated Horsepower	247									
Displacement (liters)	1.969											
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	All Wheel Drive									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	5147	Equivalent Test Weight (pounds)	5500									
GVWR (lbs)	6500	N/V Ratio	26.2									
Axle Ratio	3.33											
Transmission Type	Semi-Automatic	# of Transmission Gears	8									
Transmission Lockup	Yes	Creeper Gear	No									

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Test Group		VVVXT02.0P34			Evaporative/Refueling Family		VVVXR0142EP6	
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	44.65	0.3541	0.0261	7.597	0.28062	0.025183	17	
Cold CO	49.12	0.3895	0.02871	1.835	0.14016	0.028398	N/A	
US06	44.65	0.3541	0.0261	7.597	0.28062	0.025183	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		EDV- XC90 T8 AWD, Tested on worst case dyno setting TRLHP 17.0.						

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093500	Test Procedure	35 - California fuel 3-day exhaust
Exhaust Test # for this Evap Test	--	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	01/28/2026	Fuel	Gasoline
Fuel Batch ID	002893	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	6499	Odometer Units	K
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))	14.908	--	
METHANE (CH4 - Methane)	0.0013	--	
CO (Carbon Monoxide)	0.19	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.11	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.41	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.83	--	
MFR FE (Manufacturer Fuel Economy)	25.1581	25.1581	
NOX (Nitrogen Oxide)	0.004	--	
N2O (Nitrous Oxide)	0.0003	--	
HC-NM (Non-methane Hydrocarbon)	0.0048	--	
NMOG (Non-methane organic gases)	0.0053	--	
PM (Particulate Matter)	0.0003	--	
HC-TOTAL (Total Hydrocarbon)	0.006	--	
WATT-HRS (Watt Hours)	-97.8523	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	348.3167	348	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	348	--	

Certification Summary Information Report

Test Group		VVVXT02.0P34				Evaporative/Refueling Family				VVVXR0142EP6		
Manufacturer Test Comments		XC90 T8 AWD - EDV										
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	348	--	--	--	--	1.594	555	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0013	--	--	--	0.0026	--	0.004	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0003	--	--	--	0	--	0	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.19	--	--	--	0.11	--	0.3	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.38	--	--	--	0	--	0.4	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0053	--	1.099	--	0.0041	--	0.009	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0093	--	--	--	--	--	0.016	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0135	--	--	--	0	--	0.014	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.004	--	--	--	0.003	--	0.007	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0003	--	--	--	0	--	0	0.003	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.19	--	--	--	0.11	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-III SULEV30	CO-COMP	0.38	--	--	--	0	--	0.4	4.2	Pass
CA	150,000 miles	California LEV-III SULEV30	CO-COMP	0.38	--	--	--	0	--	0.4	4.2	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0053	--	1.099	--	0.0041	--	0.009	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0093	--	--	--	--	--	0.016	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX-COMP	0.0135	--	--	--	0	--	0.014	0.050	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX-COMP	0.0135	--	--	--	0	--	0.014	0.050	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.004	--	--	--	0.003	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0.0003	--	--	--	0	--	0	0.001	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	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093503	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)
Test Date	02/12/2026	Fuel	Gasoline
Fuel Batch ID	IFTW11	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7163	Odometer Units	K
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))	11.0786	--	
METHANE (CH4 - Methane)	0.0065	--	
CO (Carbon Monoxide)	0.46	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.33	--	
DT-EER (Drive Trace Energy Economy Rating)	0.1	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.51	--	
MFR FE (Manufacturer Fuel Economy)	19.7773	19.7773	
NOX (Nitrogen Oxide)	0.009	--	
N2O (Nitrous Oxide)	0.0003	--	
HC-NM (Non-methane Hydrocarbon)	0.0611	--	
NMOG (Non-methane organic gases)	0.0671	--	
HC-TOTAL (Total Hydrocarbon)	0.066	--	
WATT-HRS (Watt Hours)	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	441.9231	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	441	--	
Manufacturer Test Comments	XC90 T8 AWD - EDV 20F degrees		

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Test Group		VVVXT02.0P34				Evaporative/Refueling Family				VVVXR0142EP6		
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	0.46	--	--	--	0.04	--	0.5	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.061	--	--	--	0.002	--	0.06	0.30	Pass
CA	50,000 miles	California LEV-III SULEV30	CO	0.46	--	--	--	0.04	--	0.5	12.5	Pass

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093504	Test Procedure	51 - CA fuel 50 Deg(F) exhaust test
Exhaust Test # for this Evap Test	--	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	03/05/2026	Fuel	Gasoline
Fuel Batch ID	004975	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	8069	Odometer Units	K
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))	14.9022	--	
METHANE (CH4 - Methane)	0.0018	--	
CO (Carbon Monoxide)	0.26	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.51	--	
DT-EER (Drive Trace Energy Economy Rating)	-1.02	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.5	--	
MFR FE (Manufacturer Fuel Economy)	23.8161	23.8161	
NOX (Nitrogen Oxide)	0.003	--	
N2O (Nitrous Oxide)	0.0005	--	
HC-NM (Non-methane Hydrocarbon)	0.0058	--	
NMOG (Non-methane organic gases)	0.0064	--	
HC-TOTAL (Total Hydrocarbon)	0.007	--	
WATT-HRS (Watt Hours)	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	366.4297	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	366	--	
Manufacturer Test Comments	XC90 T8 AWD - EDV 50F degrees		

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Test Group		VVVXT02.0P34			Evaporative/Refueling Family					VVVXR0142EP6		
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	0.26	--	--	--	0	--	0.3	1.0	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG	0.0064	--	1.099	--	0	--	0.006	999.999	Pass
CA	4,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0094	--	--	--	--	--	0.009	0.060	Pass
CA	4,000 miles	California LEV-III SULEV30	NOX	0.003	--	--	--	0	--	0.003	999.999	Pass

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Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093501	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	01/28/2026	Fuel	Gasoline
Fuel Batch ID	002893	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	6522	Odometer Units	K
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))	10.254	--
METHANE (CH4 - Methane)	0.0001	--
CO (Carbon Monoxide)	0.28	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.8	--
DT-EER (Drive Trace Energy Economy Rating)	-0.05	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.18	--
MFR FE (Manufacturer Fuel Economy)	34.8513	34.8513
NOX (Nitrogen Oxide)	0.001	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0002	--
NMOG (Non-methane organic gases)	0.0002	--
PM (Particulate Matter)	0.0002	--
HC-TOTAL (Total Hydrocarbon)	0	--
WATT-HRS (Watt Hours)	17.0333	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	251.4399	251

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	251	--

Manufacturer Test Comments XC90 T8 AWD - EDV

Certification Summary Information Report

Test Group		VVVXT02.0P34				Evaporative/Refueling Family				VVVXR0142EP6		
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	251	--	--	--	--	1.164	292	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0002	--	1.03	--	0.0041	--	0.004	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0012	--	--	--	--	--	0.008	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.001	--	--	--	0.003	--	0.004	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0002	--	1.03	--	0.0041	--	0.004	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG+NOX	0.0012	--	--	--	--	--	0.008	0.030	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.001	--	--	--	0.003	--	0.004	999.999	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	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093472	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	01/28/2026	Fuel	Gasoline
Fuel Batch ID	002893	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	6567	Odometer Units	K
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))	8.016	--
METHANE (CH4 - Methane)	0.001	--
CO (Carbon Monoxide)	0.52	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-5.56	--
DT-EER (Drive Trace Energy Economy Rating)	-1.91	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-10.95	--
MFR FE (Manufacturer Fuel Economy)	26.0939	26.0939
NOX (Nitrogen Oxide)	0.003	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0024	--
NMOG (Non-methane organic gases)	0.0025	--
PM (Particulate Matter)	0.0026	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0054	--
HC-TOTAL (Total Hydrocarbon)	0.003	--
WATT-HRS (Watt Hours)	-19.0381	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	335.826	--

Certification Summary Information Report

Test Group		VVVXT02.0P34				Evaporative/Refueling Family				VVVXR0142EP6		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		335			--					
Manufacturer Test Comments		XC90 T8 AWD - EDV										
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	0.52	--	--	--	0.11	--	0.63	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0025	--	1.03	--	0.0041	--	0.007	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.003	--	--	--	0.003	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0026	--	--	--	0	--	0.003	0.006	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.52	--	--	--	0.11	--	0.63	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0025	--	1.03	--	0.0041	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.003	--	--	--	0.003	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	PM	0.0026	--	--	--	0	--	0.003	0.006	Pass

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093502	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	01/28/2026	Fuel	Gasoline
Fuel Batch ID	002893	Fuel Calibration Number	1
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	6603	Odometer Units	K
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))	3.581	--
METHANE (CH4 - Methane)	0.0014	--
CO (Carbon Monoxide)	0.15	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.57	--
DT-EER (Drive Trace Energy Economy Rating)	-1.14	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.48	--
MFR FE (Manufacturer Fuel Economy)	23.5414	23.5414
NOX (Nitrogen Oxide)	0.004	--
N2O (Nitrous Oxide)	0.0014	--
HC-NM (Non-methane Hydrocarbon)	0.0004	--
NMOG (Non-methane organic gases)	0.0004	--
PM (Particulate Matter)	0.0002	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0044	--
HC-TOTAL (Total Hydrocarbon)	0.001	--
WATT-HRS (Watt Hours)	-44.4793	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	372.2387	--

Certification Summary Information Report

Test Group		VVVXT02.0P34				Evaporative/Refueling Family				VVVXR0142EP6		
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		372		--						
Manufacturer Test Comments		XC90 T8 AWD - EDV										
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	0.15	--	--	--	0.11	--	0.26	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0004	--	1.03	--	0.0041	--	0.004	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0044	--	--	--	--	--	0.012	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.004	--	--	--	0.003	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	CO	0.15	--	--	--	0.11	--	0.26	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NMOG	0.0004	--	1.03	--	0.0041	--	0.004	999.999	Pass
CA	150,000 miles	California LEV-III SULEV30	NOX	0.004	--	--	--	0.003	--	0.007	999.999	Pass

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
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Emission Data Vehicle Information

Vehicle ID / Configuration	202701 / 1	Manufacturer Vehicle Configuration Number	1
Original Test Group Name	VVVXT02.0P34	Original Evaporative/Refueling Family	VVVXR0142EP6
Original Test Vehicle Model Year	2027		

Vehicle Model

Represented Test Vehicle Make	Volvo	Represented Test Vehicle Model	XC90 T8 AWD
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Leak Family Details

Leak Family Identifier	001	Leak Family Name	VVVXR0142EP6-001
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Drive Sources and Fuel System Details

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	Yes		
Odometer Correction -- Initial	0	Odometer Correction Factor	1.0062
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Kilometers		
Engine Code	HD_1	Rated Horsepower	247
Displacement (liters)	1.969		
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	All Wheel Drive
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	5147	Equivalent Test Weight (pounds)	5500
GVWR (lbs)	6500	N/V Ratio	26.2
Axle Ratio	3.33		
Transmission Type	Semi-Automatic	# of Transmission Gears	8
Transmission Lockup	Yes	Creeper Gear	No

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family		VVVXR0142EP6	
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	42.51	0.3541	0.0261	5.641	0.30479	0.024866	16.7	
Cold CO	46.76	0.3895	0.02871	1	0.1	0.01	N/A	
US06	42.51	0.3541	0.0261	5.641	0.30479	0.024866	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		FEDV- XC90 T8 AWD, Highest selling tire TRLHP 16.7.						

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093423	Test Procedure	81 - Charge Depleting UDDS
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	02/24/2026	Fuel	N/A
Fuel Batch ID	000811	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	7579	Odometer Units	K
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
PHEV/EV Charge Depleting Test Information			
Recharge Event Voltage	235	Recharge Event Energy (kiloWatt-hours)	17.2995
Charge Depleting Range (Calculated miles)	48.228	Charge Depleting Range (Actual miles)	47.543
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017
All Electric Range Unadjusted (miles)	47.543	Equivalent All Electric Range (miles)	48.228
Number of Charge Depleting Bags/Phases Conducted	8	Transition Bag/Phase Number	7
Charge Depleting Bag/Phase #1			
Test Result/Emission Name		Unrounded Test Result	
Actual Distance Driven (miles)		7.455	
Average System Voltage		410.65	
Carbon Monoxide		0	
Carbon dioxide		0	
Carbon-Related Exhaust Emissions		0	
Drive Trace Absolute Speed Change Rating		-0.34	
Drive Trace Energy Economy Rating		-0.84	
Drive Trace Inertia Work Ratio Rating		-0.41	
Integrated Amp-hours		5.633	
Manufacturer Fuel Economy		0	
Total Hydrocarbon		0	
Charge Depleting Bag/Phase #2			

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.441	
	Average System Voltage	400.3	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	-0.65	
	Drive Trace Energy Economy Rating	-2	
	Drive Trace Inertia Work Ratio Rating	-1.22	
	Integrated Amp-hours	11.12	
	Manufacturer Fuel Economy	0	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.438
Average System Voltage	390.33
Carbon Monoxide	0
Carbon dioxide	0
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	-0.22
Drive Trace Energy Economy Rating	-0.84
Drive Trace Inertia Work Ratio Rating	-0.32
Integrated Amp-hours	16.762
Manufacturer Fuel Economy	0
Total Hydrocarbon	0

Charge Depleting Bag/Phase #4

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.436	
	Average System Voltage	379.07	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	-0.67	
	Drive Trace Energy Economy Rating	-1.5	
	Drive Trace Inertia Work Ratio Rating	-0.91	
	Integrated Amp-hours	22.545	
	Manufacturer Fuel Economy	0	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #5

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.469
Average System Voltage	369.87
Carbon Monoxide	0
Carbon dioxide	0
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	-0.36
Drive Trace Energy Economy Rating	-1.25
Drive Trace Inertia Work Ratio Rating	-0.7
Integrated Amp-hours	28.492
Manufacturer Fuel Economy	0
Total Hydrocarbon	0

Charge Depleting Bag/Phase #6

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6																								
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>7.467</td></tr><tr><td>Average System Voltage</td><td>362.91</td></tr><tr><td>Carbon Monoxide</td><td>0</td></tr><tr><td>Carbon dioxide</td><td>0</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>0</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>-0.37</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>-1.42</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>-0.89</td></tr><tr><td>Integrated Amp-hours</td><td>34.532</td></tr><tr><td>Manufacturer Fuel Economy</td><td>0</td></tr><tr><td>Total Hydrocarbon</td><td>0</td></tr></table>	Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.467	Average System Voltage	362.91	Carbon Monoxide	0	Carbon dioxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-0.37	Drive Trace Energy Economy Rating	-1.42	Drive Trace Inertia Work Ratio Rating	-0.89	Integrated Amp-hours	34.532	Manufacturer Fuel Economy	0	Total Hydrocarbon	0		
	Test Result/Emission Name	Unrounded Test Result																									
	Actual Distance Driven (miles)	7.467																									
	Average System Voltage	362.91																									
	Carbon Monoxide	0																									
	Carbon dioxide	0																									
	Carbon-Related Exhaust Emissions	0																									
	Drive Trace Absolute Speed Change Rating	-0.37																									
	Drive Trace Energy Economy Rating	-1.42																									
	Drive Trace Inertia Work Ratio Rating	-0.89																									
	Integrated Amp-hours	34.532																									
	Manufacturer Fuel Economy	0																									
	Total Hydrocarbon	0																									

Charge Depleting Bag/Phase #7

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.431
Average System Voltage	358.28
Carbon Monoxide	0.12
Carbon dioxide	176
Carbon-Related Exhaust Emissions	176
Drive Trace Absolute Speed Change Rating	0.32
Drive Trace Energy Economy Rating	-0.58
Drive Trace Inertia Work Ratio Rating	0.14
Integrated Amp-hours	37.396
Manufacturer Fuel Economy	50.7
Total Hydrocarbon	0.018

Charge Depleting Bag/Phase #8

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6																							
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>7.444</td></tr><tr><td>Average System Voltage</td><td>359.84</td></tr><tr><td>Carbon Monoxide</td><td>0.16</td></tr><tr><td>Carbon dioxide</td><td>246</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>246</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>0.27</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>-0.4</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>0.45</td></tr><tr><td>Integrated Amp-hours</td><td>37.248</td></tr><tr><td>Manufacturer Fuel Economy</td><td>36.4</td></tr><tr><td>Total Hydrocarbon</td><td>0.002</td></tr></table>	Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.444	Average System Voltage	359.84	Carbon Monoxide	0.16	Carbon dioxide	246	Carbon-Related Exhaust Emissions	246	Drive Trace Absolute Speed Change Rating	0.27	Drive Trace Energy Economy Rating	-0.4	Drive Trace Inertia Work Ratio Rating	0.45	Integrated Amp-hours	37.248	Manufacturer Fuel Economy	36.4	Total Hydrocarbon	0.002	
	Test Result/Emission Name	Unrounded Test Result																								
	Actual Distance Driven (miles)	7.444																								
	Average System Voltage	359.84																								
	Carbon Monoxide	0.16																								
	Carbon dioxide	246																								
	Carbon-Related Exhaust Emissions	246																								
	Drive Trace Absolute Speed Change Rating	0.27																								
	Drive Trace Energy Economy Rating	-0.4																								
	Drive Trace Inertia Work Ratio Rating	0.45																								
	Integrated Amp-hours	37.248																								
	Manufacturer Fuel Economy	36.4																								
	Total Hydrocarbon	0.002																								
Manufacturer Test Comments		XC90 T8 AWD - FEDV CD UDDS																								

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10094672	Test Procedure	84 - Charge Depleting Highway
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	06/12/2026	Fuel	N/A
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	National Vehicle and Fuel Emissions Laboratory (U.S. EPA)		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	9319	Odometer Units	K
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
PHEV/EV Charge Depleting Test Information			
Recharge Event Voltage	249	Recharge Event Energy (kiloWatt-hours)	17.2103
Charge Depleting Range (Calculated miles)	45.053	Charge Depleting Range (Actual miles)	45.389
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017
All Electric Range Unadjusted (miles)	45.389	Equivalent All Electric Range (miles)	45.053
Number of Charge Depleting Bags/Phases Conducted	9	Transition Bag/Phase Number	5
Charge Depleting Bag/Phase #1			
Test Result/Emission Name		Unrounded Test Result	
Actual Distance Driven (miles)		10.266	
Average System Voltage		403.9	
Carbon Monoxide		0	
Carbon dioxide		0	
Carbon-Related Exhaust Emissions		0	
Drive Trace Absolute Speed Change Rating		-1.59	
Drive Trace Energy Economy Rating		-0.68	
Drive Trace Inertia Work Ratio Rating		-1.46	
Integrated Amp-hours		8.487	
Manufacturer Fuel Economy		0	
Total Hydrocarbon		0	
Charge Depleting Bag/Phase #2			

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.265	
	Average System Voltage	388.95	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	0.08	
	Drive Trace Energy Economy Rating	-0.64	
	Drive Trace Inertia Work Ratio Rating	0.44	
	Integrated Amp-hours	16.904	
	Manufacturer Fuel Economy	0	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.275
Average System Voltage	373.38
Carbon Monoxide	0
Carbon dioxide	0
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	1.52
Drive Trace Energy Economy Rating	-0.41
Drive Trace Inertia Work Ratio Rating	2.05
Integrated Amp-hours	25.634
Manufacturer Fuel Economy	0
Total Hydrocarbon	0

Charge Depleting Bag/Phase #4

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.284	
	Average System Voltage	359.93	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	0.02	
	Drive Trace Energy Economy Rating	-0.21	
	Drive Trace Inertia Work Ratio Rating	0.5	
	Integrated Amp-hours	34.758	
	Manufacturer Fuel Economy	0	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #5

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.267
Average System Voltage	355.28
Carbon Monoxide	0.2
Carbon dioxide	174
Carbon-Related Exhaust Emissions	174
Drive Trace Absolute Speed Change Rating	0.84
Drive Trace Energy Economy Rating	-0.46
Drive Trace Inertia Work Ratio Rating	1.22
Integrated Amp-hours	38.276
Manufacturer Fuel Economy	51.1
Total Hydrocarbon	0.01

Charge Depleting Bag/Phase #6

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.275	
	Average System Voltage	359.62	
	Carbon Monoxide	0.22	
	Carbon dioxide	239	
	Carbon-Related Exhaust Emissions	239	
	Drive Trace Absolute Speed Change Rating	1.05	
	Drive Trace Energy Economy Rating	-0.14	
	Drive Trace Inertia Work Ratio Rating	1.56	
	Integrated Amp-hours	38.001	
	Manufacturer Fuel Economy	37.2	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #7

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.264
Average System Voltage	360.26
Carbon Monoxide	0.23
Carbon dioxide	235
Carbon-Related Exhaust Emissions	235
Drive Trace Absolute Speed Change Rating	1.85
Drive Trace Energy Economy Rating	-0.21
Drive Trace Inertia Work Ratio Rating	2.16
Integrated Amp-hours	37.736
Manufacturer Fuel Economy	37.9
Total Hydrocarbon	0

Charge Depleting Bag/Phase #8

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.26	
	Average System Voltage	360.6	
	Carbon Monoxide	0.24	
	Carbon dioxide	233	
	Carbon-Related Exhaust Emissions	233	
	Drive Trace Absolute Speed Change Rating	2.72	
	Drive Trace Energy Economy Rating	-0.16	
	Drive Trace Inertia Work Ratio Rating	3.43	
	Integrated Amp-hours	37.629	
	Manufacturer Fuel Economy	38.2	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #9

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.27
Average System Voltage	360.91
Carbon Monoxide	0.24
Carbon dioxide	240
Carbon-Related Exhaust Emissions	240
Drive Trace Absolute Speed Change Rating	1.29
Drive Trace Energy Economy Rating	-0.04
Drive Trace Inertia Work Ratio Rating	1.89
Integrated Amp-hours	37.479
Manufacturer Fuel Economy	37.1
Total Hydrocarbon	0

Manufacturer Test Comments

XC90 T8 AWD - FEDV CD HFEDS Confirmatory test at EPA NVFEL

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6									
Emission Data Vehicle Information												
Vehicle ID / Configuration	202712 / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	VVVXT02.0P34	Original Evaporative/Refueling Family	VVVXR0142EP6									
Original Test Vehicle Model Year	2027											
Vehicle Model												
Represented Test Vehicle Make	Volvo	Represented Test Vehicle Model	XC90 T8 AWD									
Leak Family Details												
Leak Family Identifier	001	Leak Family Name	VVVXR0142EP6-001									
Drive Sources and Fuel System Details												
<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th><th>Drive Source</th><th>Fuel</th></tr> </thead> <tbody> <tr> <td>1</td><td>Combustion Engine</td><td>Gasoline</td></tr> <tr> <td>2</td><td>Electric Motor</td><td>Electricity</td></tr> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	2	Electric Motor	Electricity
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	Yes									
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Other'	--									
Off-board charge Capable Indicator	Yes											
Odometer Correction -- Initial	0	Odometer Correction Factor	1.002									
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles											
Odometer Correction Units	Kilometers											
Engine Code	HD_1	Rated Horsepower	247									
Displacement (liters)	1.969											
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	All Wheel Drive									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	5147	Equivalent Test Weight (pounds)	5500									
GVWR (lbs)	6500	N/V Ratio	26.2									
Axle Ratio	3.33											
Transmission Type	Semi-Automatic	# of Transmission Gears	8									
Transmission Lockup	Yes	Creeper Gear	No									

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
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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	44.65	0.3541	0.0261	8.27	0.38885	0.023831	17
Cold CO	49.12	0.3895	0.02871	1	0.1	0.01	N/A
US06	44.65	0.3541	0.0261	8.27	0.38885	0.023831	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments EVAP EDV- XC90 T8 AWD, Tested on worst case dyno setting TRLHP 17.0.

Test #	VVVX10093554	Test Procedure	27 - California fuel 2-day evap
Exhaust Test # for this Evap Test	VVVX10093553	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline
Test Date	02/12/2026	Fuel	Gasoline
Fuel Batch ID	004975	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6432	Odometer Units	K
4WD Test Dyno	No	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
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1863	--

Manufacturer Test Comments 2-Day CARB Evaporative 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	0.1863	0	0.186	0.4	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1863	0	0.186	0.4	Pass

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Test #	VVVX10093555	Test Procedure	38 - CA fuel 3-day evap.
Exhaust Test # for this Evap Test	VVVX10093552	Test Fuel Type	52 - CARB LEV4 E10 Premium
Test Date	03/07/2026	Fuel	Gasoline
Fuel Batch ID	004975	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Volvo Car Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	6519	Odometer Units	K
4WD Test Dyno	No	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
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.2287	--

Manufacturer Test Comments3-Day CARB Evaporative 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	0.2287	0.0259	0.255	0.4	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2287	0.0259	0.255	0.4	Pass

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6						
Test #	VVVX10093557	Test Procedure	24 - Federal fuel refueling test (ORVR)						
Exhaust Test # for this Evap Test	VVVX10093556	Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)						
Test Date	01/28/2026	Fuel	Gasoline						
Fuel Batch ID	005730	Fuel Calibration Number	1						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	Volvo Car Corporation								
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)								
Test Start Odometer Reading	6408	Odometer Units	K						
4WD Test Dyno	No	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									
<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>0.004</td> <td>--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC (Hydrocarbon for Running Loss and ORVR)	0.004	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
HC (Hydrocarbon for Running Loss and ORVR)	0.004	--							
Manufacturer Test Comments									
ORVR EPA 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	0.004	0.002	0.006	0.2	Pass	
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC	0.004	0.002	0.006	0.2	Pass	

Certification Summary Information Report

Test Group	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6																											
Test #	VVVX10093558	Test Procedure	37 - California Fuel Running Loss																											
Exhaust Test # for this Evap Test	VVVX10093552	Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline																											
Test Date	03/07/2026	Fuel	Gasoline																											
Fuel Batch ID	004975	Fuel Calibration Number	1																											
Vehicle Class	N/A	DF Type	Mfr. Determined																											
Verify Test Lab ID	Volvo Car Corporation																													
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)																													
Test Start Odometer Reading	6519	Odometer Units	K																											
4WD Test Dyno	No	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																														
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:35%;">Test Result Name</th> <th style="width:35%;">Unrounded Test Result</th> <th style="width:30%;">Verify Calculated FE Equivalent Value</th> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0	--																					
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value																												
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0	--																												
Manufacturer Test Comments																														
Running Loss (R/L)																														
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">Certification Region</th> <th style="width:10%;">Useful Life</th> <th style="width:10%;">Standard Level</th> <th style="width:10%;">Emission Name</th> <th style="width:10%;">Rounded Result</th> <th style="width:10%;">Add DF</th> <th style="width:10%;">Certification Level</th> <th style="width:10%;">Standard</th> <th style="width:10%;">Pass/Fail</th> </tr> <tr> <td>Fed</td> <td>150,000 miles</td> <td>Federal Tier 3 Evap</td> <td>HC-TOTAL-EQUIV</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0.05</td> <td style="text-align: center;">Pass</td> </tr> <tr> <td>CA</td> <td>150,000 miles</td> <td>California LEV-III Zero Evap (Option 2)</td> <td>HC-TOTAL-EQUIV</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0.05</td> <td style="text-align: center;">Pass</td> </tr> </table>				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 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	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Fuel Properties			
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	005730	Fuel Calibration Number	1
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/19/2025
Fuel Batch Calibration Effective Date	12/20/2025	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)	17975
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.81	Fuel Carbon Mass Fraction (E10)	0.826
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	002893	Fuel Calibration Number	1
Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline	Fuel Batch Calibration Date	03/11/2025
Fuel Batch Calibration Effective Date	10/10/2025	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	0.753
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17809
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.423	Fuel Carbon Mass Fraction (E10)	0.83
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	004975	Fuel Calibration Number	1
Test Fuel Type	52 - CARB LEV4 E10 Premium Gasoline	Fuel Batch Calibration Date	06/18/2025
Fuel Batch Calibration Effective Date	10/10/2025	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	VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.751
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17828
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.466	Fuel Carbon Mass Fraction (E10)	0.828
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	000811	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	07/10/2025
Fuel Batch Calibration Effective Date	10/10/2025	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	0.741
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18405
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.868	Weight Fraction CO2	--
Fuel Batch ID	IFTW11	Fuel Calibration Number	1
Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)	Fuel Batch Calibration Date	10/12/2020
Fuel Batch Calibration Effective Date	01/07/2025	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	0.75
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17803
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.412	Fuel Carbon Mass Fraction (E10)	0.829
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family			VVVXR0142EP6		
Consolidated List of Standards										
Exhaust Standards										
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.11	999.999	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0041	999.999	
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999	
150,000 miles	PM	--	--	--	--	--	--	0	0.006	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			Standard Level			California LEV-III SULEV30		
Fuel		Gasoline			Test Procedure			California fuel 3-day exhaust		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CO	--	--	--	--	--	--	0.11	1.0	
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2	
150,000 miles	NMOG	--	--	1.099	--	--	--	0.0041	999.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	0.030	
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.050	
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999	
150,000 miles	PM	--	--	--	--	--	--	0	0.001	

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family			VVVXR0142EP6	
Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			Standard Level			Federal Tier 3 Bin 30	
Fuel		Gasoline			Test Procedure			California 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	--	--	--	--	--	1.594	--	999.999
120,000 miles	METHANE	--	--	--	--	--	--	0.0026	0.030
120,000 miles	N2O	--	--	--	--	--	--	0	0.010
150,000 miles	CO	--	--	--	--	--	--	0.11	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	NMOG	--	--	1.099	--	--	--	0.0041	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			In-Use	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			California fuel 3-day exhaust	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.11	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	NMOG	--	--	1.099	--	--	--	0.0041	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.002

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family			VVVXR0142EP6	
Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.11	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0041	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.11	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0041	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			Standard Level			California LEV-III SULEV30	
Fuel		Gasoline			Test Procedure			CA fuel 50 Deg(F) exhaust test	
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	--	--	--	--	--	--	0	1.0
4,000 miles	NMOG	--	--	1.099	--	--	--	0	999.999
4,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.060
4,000 miles	NOX	--	--	--	--	--	--	0	999.999

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family			VVVXR0142EP6	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.04	12.5
120,000 miles	HC-NM	--	--	--	--	--	--	0.002	0.30

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	1.03	--	--	--	0.0041	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999

Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	1.164	--	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0041	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0.0071	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999

Certification Summary Information Report

Test Group		VVVXT02.0P34			Evaporative/Refueling Family			VVVXR0142EP6	
Cert Region		Federal			Cert/In-Use Code			Both	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.11	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0041	999.999
150,000 miles	NOX	--	--	--	--	--	--	0.003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.006

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			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	--	--	--	--	--	--	0.04	12.5

Evaporative/Refueling Standards

Evaporative/Refueling Family		VVVXR0142EP6		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		VVVXR0142EP6		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		California 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		VVVXT02.0P34		Evaporative/Refueling Family		VVVXR0142EP6	
Evaporative/Refueling Family		VVVXR0142EP6		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		California fuel 2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0		
Evaporative/Refueling Family		VVVXR0142EP6		Cert Region		Federal	
Cert/In-Use Code		Both		Standard Level		Federal Tier 3 Evap	
Test Procedure		California Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.050	0		
Evaporative/Refueling Family		VVVXR0142EP6		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	HC	--	0.200	0.002		
Evaporative/Refueling Family		VVVXR0142EP6		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Both		Standard Level		California LEV-III Zero Evap (Option 2)	
Test Procedure		CA fuel 3-day evap.					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0259		
Evaporative/Refueling Family		VVVXR0142EP6		Cert Region		Federal	
Cert/In-Use Code		Both		Standard Level		Federal Tier 3 Evap	
Test Procedure		CA fuel 3-day evap.					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0259		

Certification Summary Information Report

Test Group		VVVXT02.0P34		Evaporative/Refueling Family		VVVXR0142EP6	
Evaporative/Refueling Family		VVVXR0142EP6		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		HC		--	
						0.200	
						0.002	
Evaporative/Refueling Family		VVVXR0142EP6		Cert Region		Federal	
Cert/In-Use Code		Both		Standard Level		Federal Tier 3 Evap	
Test Procedure		California fuel 2-day evap					
Fuel		Useful Life		Emission Name		Rounded Result	
Std		Add DF					
Gasoline		150,000 miles		HC-TOTAL-EQUIV		--	
						0.400	
						0	

Certification Summary Information Report

Test Group		VVVXT02.0P34	Evaporative/Refueling Family	VVVXR0142EP6
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		VVVXT02.0P34	Evaporative/Refueling Family		VVVXR0142EP6
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		VVVXT02.0P34	Evaporative/Refueling Family		VVVXR0142EP6
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		

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Test Group		VVVXT02.0P34	Evaporative/Refueling Family		VVVXR0142EP6
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	