

Certification Summary Information Report

Manufacturer	Toyota Motor Corporation	Manufacturer Code	TYX
Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Certificate Number	VTYXJ02.5VEA-039	CARB Executive Order #	--
Certificate Issue Date	09/14/2026	Certificate Revision Date	--
Certificate Effective Date	09/14/2026	Conditional Certificate	Yes
CSI Revision #	--	CSI Submission/Revision Date	08/19/2026 10:09:30 PM
Model Year	2027		

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42						
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:	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							
Drive Source #2:	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 & ported injection</td><td>No</td></tr> </table>	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator	Gasoline	Spark Ignition direct & ported injection	No		
Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator							
Gasoline	Spark Ignition direct & ported injection	No							
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, LDT2						
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	VTYXHHGNNB2K	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	10/01/2026	CAP2000 Conditional Certificate?	Yes						
Independent Commercial Importer?	No	Alternative Fuel Converter Certificate?	No						
SFTP Federal Composite Compliance Identifier	Not Applicable	SFTP Tier 2 Composite CO Option	No						
SFTP LEV-III Composite Compliance Indicator	No								
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VTYXT02.4H3A						
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0						
OBD Deficiencies Comments	--								
Mfr Test Group Comments	--								
Mfr Exhaust / Evap Standards Comments	--								

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Evaporative/Refueling Family Information			
Evaporative Summary Information Type	New	Submission/Correction Date	05/13/2026 09:57:24 PM
Integrated ORVR?	No	Fuel(s)	Electricity, Gasoline
Multiple Fuel Storage	Fuels Stored Together		
Bladder Fuel Tank?	No		
Fuel Tank Material	Plastic	Fuel Tank Material Description	EVOH
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)	165	Number of Primary Canisters	1
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--
Mfr Evaporative/Refueling Family Comments	--		
Leak Family Details			
Leak Family Indicator	No		
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	--		

Certification Summary Information Report

Test Group		VTYXJ02.5VEA		Evaporative/Refueling Family		VTYXR0165J42	
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Toyota Motor Corporation	1 - TOYOTA	162 - RAV4 AWD WOODLAND EDITION	California + CAA Section 177 states	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	166 - RAV4 AWD LTD/XSE	California + CAA Section 177 states	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	166 - RAV4 AWD LTD/XSE	California + CAA Section 177 states	All Wheel Drive	Continuously Variable	1	No
Toyota Motor Corporation	1 - TOYOTA	167 - RAV4 AWD XLE	Federal	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	160 - RAV4	California + CAA Section 177 states	2-Wheel Drive, Front	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	167 - RAV4 AWD XLE	California + CAA Section 177 states	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	165 - RAV4 AWD	California + CAA Section 177 states	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	165 - RAV4 AWD	Federal	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	166 - RAV4 AWD LTD/XSE	Federal	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	160 - RAV4	Federal	2-Wheel Drive, Front	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	162 - RAV4 AWD WOODLAND EDITION	Federal	All Wheel Drive	Selectable Continuously Variable (e.g. CVT with paddles)	6	No
Toyota Motor Corporation	1 - TOYOTA	166 - RAV4 AWD LTD/XSE	Federal	All Wheel Drive	Continuously Variable	1	No

Engine Description			
Hybrid Type	IC Engine/Electric Motor		
Engine Type	4-Stroke Spark Ignition		
Engine Block Arrangement	Inline		
Camless Valvetrain Indicator	No		
Number of Cylinders/Rotors	4		

Hybrid Description	
Hybrid Description	--
Mfr Engine Description	--
Mfr Engine Block Arrangement Description	--
Oil Viscosity/Classification	0W-8
Mechanically Variable Compression Ratio Indicator	N

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
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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	Platinum + Rhodium	Ceramic	Monolith

Mfr After Treatment Device (ATD) Comments	ATD #2 contains TWC and GPF.
Direct Ozone Reduction (DOR) Device	Not Equipped
Mfr Emission Control Device Comments	--

Engine Configuration Number 1			
Engine Displacement (liters)	2.5	Engine Rated Horsepower	178
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2
Air Aspiration Method	Naturally Aspirated	Number of Air Aspiration Devices	--
Air Aspiration Device Configuration	--	Charge Air Cooler Type	N/A
Air Aspiration Drive Method(s)	--		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Intake and exhaust		
Variable Valve Lift?	No		
Variable Valve Lift System Description	--		
Number of Knock Sensors	1	Number of Air/Fuel Sensors	2
Air/Fuel Sensor # 1 Type	Heated air fuel	Air/Fuel Sensor # 1 Description	--
Air/Fuel Sensor # 2 Type	Heated air fuel	Air/Fuel Sensor # 2 Description	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	Yes	Cooled Exhaust Gas Recirculation	Yes
EGR Type	Electronic/Electric	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	--		

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	VTYX10095044	VTYX10095044	VTYX10095045	VTYX10095046	VTYX10095040	VTYX10095047	179.4	30.5	130.9	29.7	--
Electricity	VTYX10095044	VTYX10095044	VTYX10095045	VTYX10095046	VTYX10095040	VTYX10095047	--	--	--	--	--

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
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	248	Battery Energy Capacity	4.2
Battery Specific Energy	41	Battery Charger Type	On-Board
Number of Capacitors	--	Capacitor Rating (In Farads)	--
Mfr Capacitor Comments	--		
Hydraulic System Description	Battery Energy Capacity: 4.1 and 4.3 available. Battery Specific Energy: 43 and 44 available		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Front Wheels	Driver Controlled Regenerative Braking	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	2		
Motor/Generator Type 1	AC SYNCHRONOUS	Rated Motor/Generator Power	40
Motor/Generator Type 2	AC SYNCHRONOUS	Rated Motor/Generator Power	100
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	Usable H2 Fill Capacity (kg)	--
Mfr Hybrid Electric/ Electric Vehicle Comments	"40kWatt" of Rated Motor/Generator Power is only for AWD. Regenerative Braking Source "Both" is for AWD..		

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42									
Emission Data Vehicle Information												
Vehicle ID / Configuration	20-AU1H / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	LTYXT02.5P34	Original Evaporative/Refueling Family	LTYXR0165J82									
Original Test Vehicle Model Year	2020											
Vehicle Model												
Represented Test Vehicle Make	TOYOTA	Represented Test Vehicle Model	HIGHLANDER HYBRID AWD LTD/PLAT									
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>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	No											
Odometer Correction -- Initial	29	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	01	Rated Horsepower	186									
Displacement (liters)	2.487											
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'										
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--									
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Front									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	4595	Equivalent Test Weight (pounds)	5000									
GVWR (lbs)	6065	N/V Ratio	22.4									
Axle Ratio	3.64											
Transmission Type	Continuously Variable	# of Transmission Gears	1									
Transmission Lockup	No	Creep Gear	No									

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
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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	40.829	0.21956	0.025369	25.284	0.08413	0.025532	15.4
Cold CO	44.912	0.24151	0.027906	21.298	0.01124	0.028196	N/A
US06	40.829	0.21956	0.025369	25.284	0.08413	0.025532	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments T/M MODE IS SPORT

Test #	LTYX10061147	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	LTYX10061109	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/22/2019	Fuel	Gasoline
Fuel Batch ID	1F9-04	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4394	Odometer Units	M
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 (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0027622	--

Manufacturer Test Comments --

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	0.003	0	0	0.2	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.003	0	0	0.2	Pass

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
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Emission Data Vehicle Information

Vehicle ID / Configuration	24-AS2H / 0	Manufacturer Vehicle Configuration Number	0
Original Test Group Name	RTYXT02.5P34	Original Evaporative/Refueling Family	RTYXR0165J82
Original Test Vehicle Model Year	2024		

Vehicle Model

Represented Test Vehicle Make	TOYOTA	Represented Test Vehicle Model	GRAND HIGHLANDER HYBRID
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Leak Family Details

Leak Family Identifier	--	Leak Family Name	--
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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	No		
Odometer Correction -- Initial	8	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	08	Rated Horsepower	187
Displacement (liters)	2.487		
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Front
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	4475	Equivalent Test Weight (pounds)	4750
GVWR (lbs)	6030	N/V Ratio	22.8
Axle Ratio	3.64		
Transmission Type	Continuously Variable	# of Transmission Gears	1
Transmission Lockup	No	Creep Gear	No

Emission Control Device Comments	--
Manufacturer Test Vehicle Comments	DRIVE MODE IS ECO.

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	RTYX10078420	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	RTYX10078383	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/30/2022	Fuel	Gasoline
Fuel Batch ID	2F2A12	Fuel Calibration Number	6
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3850	Odometer Units	M
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 (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	0	--
FE BAG 1 (Bag 1 Fuel Economy)	999	999
CO2 BAG 2 (Bag 2 Carbon Dioxide)	0	--
FE BAG 2 (Bag 2 Fuel Economy)	999	999
CO2 BAG 3 (Bag 3 Carbon Dioxide)	0	--
FE BAG 3 (Bag 3 Fuel Economy)	999	999
MFR FE (Manufacturer Fuel Economy)	999	999
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1922	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	0	--

Manufacturer Test Comments HSL=0.0181, 1ST DBL=0.1741, 2ND DBL=0.1354, 1ST DBL IS ADDED KEY OFF MONITOR LOSS(0.0002GRAM)

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	0.1922	0	0.192	0.3	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1922	0	0.192	0.3	Pass

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	RTYX10078421	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	RTYX10078382	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	12/07/2022	Fuel	Gasoline
Fuel Batch ID	2F2A12	Fuel Calibration Number	7
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3889	Odometer Units	M
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 (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	0	--
FE BAG 1 (Bag 1 Fuel Economy)	999	999
CO2 BAG 2 (Bag 2 Carbon Dioxide)	0	--
FE BAG 2 (Bag 2 Fuel Economy)	999	999
CO2 BAG 3 (Bag 3 Carbon Dioxide)	0	--
FE BAG 3 (Bag 3 Fuel Economy)	999	999
MFR FE (Manufacturer Fuel Economy)	999	999
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1858	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	0	--

Manufacturer Test Comments HSL=0.0335, 1ST DBL=0.1523, 2ND DBL=0.1225, 3RD DBL=0.1148, 1ST DBL IS ADDED KEY OFF MONITOR LOSS(0.0002GRAM)

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	0.1858	0	0.186	0.3	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1858	0	0.186	0.3	Pass

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	RTYX10078422	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	RTYX10078382	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	12/07/2022	Fuel	Gasoline
Fuel Batch ID	2F2A12	Fuel Calibration Number	7
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3889	Odometer Units	M
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 (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	0	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0	--
FE BAG 1 (Bag 1 Fuel Economy)	999	999
CH4 BAG 1 (Bag 1 Methane)	0	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	0	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0	--
FE BAG 2 (Bag 2 Fuel Economy)	999	999
CH4 BAG 2 (Bag 2 Methane)	0	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	0	--
CO BAG 3 (Bag 3 Carbon Monoxide)	0	--
FE BAG 3 (Bag 3 Fuel Economy)	999	999
CH4 BAG 3 (Bag 3 Methane)	0	--
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--
MFR FE (Manufacturer Fuel Economy)	999	999
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0000012	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	--

Certification Summary Information Report

Test Group		VTYXJ02.5VEA		Evaporative/Refueling Family		VTYXR0165J42		
		Test Result Name		Unrounded Test Result		Verify Calculated CO2		
		Carbon dioxide		0		--		
Manufacturer Test Comments		--						
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-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0	0	0	0.01	Pass

Certification Summary Information Report

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Emission Data Vehicle Information												
Vehicle ID / Configuration	27-AA1H / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	VTYXJ02.5VEA	Original Evaporative/Refueling Family	VTYXR0165J42									
Original Test Vehicle Model Year	2027											
Vehicle Model												
Represented Test Vehicle Make	TOYOTA	Represented Test Vehicle Model	RAV4 AWD WOODLAND EDITION									
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	0	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	01	Rated Horsepower	178									
Displacement (liters)	2.487											
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'										
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--									
Charge Air Cooler Type	N/A	Drive Mode While Testing	2-Wheel Drive, Front									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)									
Curb Weight (lbs)	3885	Equivalent Test Weight (pounds)	4250									
GVWR (lbs)	4920	N/V Ratio	24.2									
Axle Ratio	3.61											
Transmission Type	Continuously Variable	# of Transmission Gears	1									
Transmission Lockup	No	Creep Gear	No									

Certification Summary Information Report

Test Group		VTYXJ02.5VEA			Evaporative/Refueling Family		VTYXR0165J42	
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	30.621	0.15329	0.026358	16.114	-0.09582	0.027924	13.9	
Cold CO	33.683	0.16862	0.028994	18.287	-0.22829	0.031771	N/A	
US06	30.621	0.15329	0.026358	16.114	-0.09582	0.027924	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		DRIVE MODE IS SPORT						

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095040	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	05/23/2026	Fuel	Gasoline
Fuel Batch ID	2M3A01	Fuel Calibration Number	25
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000), LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4096	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	11.0319105	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.5874125	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	332.0426912	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	1.3319775	--	
FE BAG 1 (Bag 1 Fuel Economy)	999	999	
CH4 BAG 1 (Bag 1 Methane)	0.025282	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.1609398	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	0	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.8519037	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	235.9508502	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0286121	--	
FE BAG 2 (Bag 2 Fuel Economy)	999	999	
CH4 BAG 2 (Bag 2 Methane)	0.0008507	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0002387	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	0	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.5925943	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	242.8587921	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0926539	--	
FE BAG 3 (Bag 3 Fuel Economy)	999	999	
CH4 BAG 3 (Bag 3 Methane)	0.0016113	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0000186	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	0	--	
METHANE (CH4 - Methane)	0.0061259	--	
CO (Carbon Monoxide)	0.316489	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.03	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.06	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.03	--	
MFR FE (Manufacturer Fuel Economy)	999	999	
NOX (Nitrogen Oxide)	0.008111	--	
N2O (Nitrous Oxide)	0.0005613	--	
HC-NM (Non-methane Hydrocarbon)	0.0303539	--	

Certification Summary Information Report

Test Group	VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42																							
<table><tr><td colspan="2">NMOG (Non-methane organic gases)</td><td colspan="2">0.0335005</td><td colspan="2">--</td></tr><tr><td colspan="2">HC-TOTAL (Total Hydrocarbon)</td><td colspan="2">0.0358319</td><td colspan="2">--</td></tr><tr><td colspan="2">WATT-HRS (Watt Hours)</td><td colspan="2">0</td><td colspan="2">--</td></tr></table>													NMOG (Non-methane organic gases)		0.0335005		--		HC-TOTAL (Total Hydrocarbon)		0.0358319		--		WATT-HRS (Watt Hours)		0		--	
NMOG (Non-methane organic gases)		0.0335005		--																										
HC-TOTAL (Total Hydrocarbon)		0.0358319		--																										
WATT-HRS (Watt Hours)		0		--																										
<table><tr><td colspan="2">Test Result Name</td><td colspan="2">Unrounded Test Result</td><td colspan="2">Verify Calculated CREE/OPT-CREE</td></tr><tr><td colspan="2">Carbon-Related Exhaust Emissions</td><td colspan="2">0</td><td colspan="2">--</td></tr></table>													Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE		Carbon-Related Exhaust Emissions		0		--							
Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE																										
Carbon-Related Exhaust Emissions		0		--																										
<table><tr><td colspan="2">Test Result Name</td><td colspan="2">Unrounded Test Result</td><td colspan="2">Verify Calculated CO2</td></tr><tr><td colspan="2">Carbon dioxide</td><td colspan="2">257.7762638</td><td colspan="2">--</td></tr></table>													Test Result Name		Unrounded Test Result		Verify Calculated CO2		Carbon dioxide		257.7762638		--							
Test Result Name		Unrounded Test Result		Verify Calculated CO2																										
Carbon dioxide		257.7762638		--																										
Manufacturer Test Comments		Bag1:NMOG = HC-NM x 1.1036, Bag2:NMOG = HC-NM x 1.1235, Bag3:NMOG = HC-NM x 1.0505																												
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 4 Bin 20	CO	0.32	--	--	--	0.01	--	0.3	10.0	Pass																		
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG	0.0335	1	1.1	--	0.0007	--	0.034	999.999	Pass																		
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0416	1	1.1	--	--	--	0.043	0.200	Pass																		
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.0081	--	--	--	0.0003	--	0.008	999.999	Pass																		
CA	50,000 miles	California LEV-IV SULEV20	CO	0.32	--	--	--	0.01	--	0.3	10.0	Pass																		

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095044	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/29/2026	Fuel	Gasoline
Fuel Batch ID	2E5-03	Fuel Calibration Number	3
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4195	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	14.8981259	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.591392	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	233.1426693	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.2510845	--	
FE BAG 1 (Bag 1 Fuel Economy)	999	999	
CH4 BAG 1 (Bag 1 Methane)	0.0031378	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.023444	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	0	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.8575999	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	190.9236751	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0306201	--	
FE BAG 2 (Bag 2 Fuel Economy)	999	999	
CH4 BAG 2 (Bag 2 Methane)	0.0007807	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	0	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.5904006	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	216.1904376	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0712699	--	
FE BAG 3 (Bag 3 Fuel Economy)	999	999	
CH4 BAG 3 (Bag 3 Methane)	0.0015408	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0.0000226	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	0	--	
ACT-DISTANCE BAG 4 (Bag 4 Actual Distance)	3.8587335	--	
CO2 BAG 4 (Bag 4 Carbon Dioxide)	190.0629894	--	
CO BAG 4 (Bag 4 Carbon Monoxide)	0.0195758	--	
FE BAG 4 (Bag 4 Fuel Economy)	999	999	
CH4 BAG 4 (Bag 4 Methane)	0.000735	--	
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0	--	
WATT-HRS BAG 4 (Bag 4 Watt Hours)	0	--	
METHANE (CH4 - Methane)	0.0014647	--	
CO (Carbon Monoxide)	0.0842328	--	

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
	DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.41	--
	DT-EER (Drive Trace Energy Economy Rating)	0.2	--
	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.56	--
	MFR FE (Manufacturer Fuel Economy)	999	999
	NOX (Nitrogen Oxide)	0.0011808	--
	N2O (Nitrous Oxide)	0.0000124	--
	HC-NM (Non-methane Hydrocarbon)	0.00441	--
	NMOG (Non-methane organic gases)	0.0048563	--
	PM (Particulate Matter)	0.0000281	--
	HC-TOTAL (Total Hydrocarbon)	0.0057391	--
	WATT-HRS (Watt Hours)	0	--
Test Result Name		Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions		0	206
Test Result Name		Unrounded Test Result	Verify Calculated CO2
Carbon dioxide		206.3638674	--
Manufacturer Test Comments NMOG = HC-NM x 1.1012, Bag1:NMOG = HC-NM x 1.1036, Bag2 Bag4:NMOG = HC-NM x 1.1235, Bag3:NMOG = HC-NM x 1.0505			

Certification Summary Information Report

Test Group		VTYXJ02.5VEA				Evaporative/Refueling Family				VTYXR0165J42		
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 4 Bin 20	CO	0.08	--	--	--	0.01	--	0.1	1.7	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	CREE	206	--	--	0 UP	0.014	--	206	--	--
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG	0.0049	1	1.1	--	0.0007	--	0.006	999.999	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0061	1	1.1	--	--	--	0.007	0.020	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.0012	--	--	--	0.0003	--	0.002	999.999	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	PM	0.00003	--	--	--	0	--	0	0.0005	Pass
CA	150,000 miles	California LEV-IV SULEV20	CO	0.08	--	--	--	0.01	--	0.1	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV20	METHANE	0.0015	--	--	--	0.0029	--	0.004	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV20	N2O	0	--	--	--	0.0005	--	0	0.010	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG	0.0049	1	1.1	--	0.0007	--	0.006	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG+NOX	0.0061	1	1.1	--	--	--	0.007	0.020	Pass
CA	150,000 miles	California LEV-IV SULEV20	NOX	0.0012	--	--	--	0.0003	--	0.002	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095140	Test Procedure	58 - Partial Soak (PS) - 40 minute
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	06/19/2026	Fuel	Gasoline
Fuel Batch ID	2E5-03	Fuel Calibration Number	4
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4254	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	14.9154419	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	3.5924204	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	218.2034682	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.091034	--	
FE BAG 1 (Bag 1 Fuel Economy)	999	999	
CH4 BAG 1 (Bag 1 Methane)	0.0030398	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0074728	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	0	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	3.8645702	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	192.7155186	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.0262641	--	
FE BAG 2 (Bag 2 Fuel Economy)	999	999	
CH4 BAG 2 (Bag 2 Methane)	0.0008492	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	0	--	
ACT-DISTANCE BAG 3 (Bag 3 Actual Distance)	3.5928924	--	
CO2 BAG 3 (Bag 3 Carbon Dioxide)	218.5112537	--	
CO BAG 3 (Bag 3 Carbon Monoxide)	0.0588405	--	
FE BAG 3 (Bag 3 Fuel Economy)	999	999	
CH4 BAG 3 (Bag 3 Methane)	0.0015804	--	
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--	
WATT-HRS BAG 3 (Bag 3 Watt Hours)	0	--	
ACT-DISTANCE BAG 4 (Bag 4 Actual Distance)	3.8636923	--	
CO2 BAG 4 (Bag 4 Carbon Dioxide)	191.0444158	--	
CO BAG 4 (Bag 4 Carbon Monoxide)	0.0166961	--	
FE BAG 4 (Bag 4 Fuel Economy)	999	999	
CH4 BAG 4 (Bag 4 Methane)	0.0009172	--	
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0	--	
WATT-HRS BAG 4 (Bag 4 Watt Hours)	0	--	
METHANE (CH4 - Methane)	0.0015239	--	
CO (Carbon Monoxide)	0.0458026	--	

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42									
	DT-ASCR (Drive Trace Absolute Speed Change Rating)	-9999	--									
	DT-EER (Drive Trace Energy Economy Rating)	-9999	--									
	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-9999	--									
	MFR FE (Manufacturer Fuel Economy)	999	999									
	NOX (Nitrogen Oxide)	0.0010045	--									
	N2O (Nitrous Oxide)	0.000306	--									
	HC-NM (Non-methane Hydrocarbon)	0.0014027	--									
	NMOG (Non-methane organic gases)	0.0015446	--									
	HC-TOTAL (Total Hydrocarbon)	0.0026616	--									
	WATT-HRS (Watt Hours)	0	--									
Test Result Name		Unrounded Test Result	Verify Calculated CREE/OPT-CREE									
Carbon-Related Exhaust Emissions		0	--									
Test Result Name		Unrounded Test Result	Verify Calculated CO2									
Carbon dioxide		204.5866633	--									
Manufacturer Test Comments												
NMOG = HC-NM x 1.1012, Bag1:NMOG = HC-NM x 1.1036, Bag2 Bag4:NMOG = HC-NM x 1.1235, Bag3:NMOG = HC-NM x 1.0505												
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 4 Bin 20	NMOG	0.0015	1	1.1	--	0.0007	--	0.002	999.999	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0025	1	1.1	--	--	--	0.004	0.015	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.001	--	--	--	0.0003	--	0.001	999.999	Pass

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095047	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/28/2026	Fuel	Gasoline
Fuel Batch ID	2E5-03	Fuel Calibration Number	3
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4151	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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))	10.2548	--
METHANE (CH4 - Methane)	0.0003058	--
CO (Carbon Monoxide)	0.0596832	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.07	--
DT-EER (Drive Trace Energy Economy Rating)	0.1	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.38	--
MFR FE (Manufacturer Fuel Economy)	999	999
NOX (Nitrogen Oxide)	0.0007645	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0.0002085	--
WATT-HRS (Watt Hours)	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	0	194

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	194.1894853	--

Manufacturer Test Comments NMOG = HC-NM x 1.0300

Certification Summary Information Report

Test Group		VTYXJ02.5VEA				Evaporative/Refueling Family				VTYXR0165J42		
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 4 Bin 20	CREE	194	--	--	0 UP	0.014	--	194	--	--
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG	0	1	1.03	--	0.0007	--	0.001	999.999	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0008	1	1.03	--	--	--	0.002	0.020	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.0008	--	--	--	0.0003	--	0.001	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG	0	1	1.03	--	0.0007	--	0.001	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG+NOX	0.0008	1	1.03	--	--	--	0.002	0.020	Pass
CA	150,000 miles	California LEV-IV SULEV20	NOX	0.0008	--	--	--	0.0003	--	0.001	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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095045	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/28/2026	Fuel	Gasoline
Fuel Batch ID	2E5-03	Fuel Calibration Number	3
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4171	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	
ACT-DISTANCE (Actual Distance Driven (miles))	8.0045043	--	
ACT-DISTANCE BAG 1 (Bag 1 Actual Distance)	1.7703985	--	
CO2 BAG 1 (Bag 1 Carbon Dioxide)	365.6301642	--	
CO BAG 1 (Bag 1 Carbon Monoxide)	0.0793269	--	
FE BAG 1 (Bag 1 Fuel Economy)	999	999	
CH4 BAG 1 (Bag 1 Methane)	0.0016192	--	
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0027338	--	
WATT-HRS BAG 1 (Bag 1 Watt Hours)	0	--	
ACT-DISTANCE BAG 2 (Bag 2 Actual Distance)	6.2341058	--	
CO2 BAG 2 (Bag 2 Carbon Dioxide)	235.7457945	--	
CO BAG 2 (Bag 2 Carbon Monoxide)	0.1065607	--	
FE BAG 2 (Bag 2 Fuel Economy)	999	999	
CH4 BAG 2 (Bag 2 Methane)	0.0014898	--	
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.001042	--	
WATT-HRS BAG 2 (Bag 2 Watt Hours)	0	--	
METHANE (CH4 - Methane)	0.0015184	--	
CO (Carbon Monoxide)	0.1005372	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.3	--	
DT-EER (Drive Trace Energy Economy Rating)	0.29	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.46	--	
MFR FE (Manufacturer Fuel Economy)	999	999	
NOX (Nitrogen Oxide)	0.0087847	--	
N2O (Nitrous Oxide)	0.0003528	--	
HC-NM (Non-methane Hydrocarbon)	0.0013749	--	
NMOG (Non-methane organic gases)	0.0014161	--	
PM (Particulate Matter)	0.0000695	--	
HC-TOTAL (Total Hydrocarbon)	0.0027977	--	
WATT-HRS (Watt Hours)	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	0	--	

Certification Summary Information Report

Test Group	VTYXJ02.5VEA				Evaporative/Refueling Family				VTYXR0165J42																													
<table><tr><td colspan="2">Test Result Name</td><td colspan="3">Unrounded Test Result</td><td colspan="8">Verify Calculated CO2</td></tr><tr><td colspan="2">Carbon dioxide</td><td colspan="3">264.4730069</td><td colspan="8">--</td></tr></table>													Test Result Name		Unrounded Test Result			Verify Calculated CO2								Carbon dioxide		264.4730069			--							
Test Result Name		Unrounded Test Result			Verify Calculated CO2																																	
Carbon dioxide		264.4730069			--																																	
Manufacturer Test Comments		NMOG = HC-NM x 1.0300																																				
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 4 Bin 20	CO	0.1	--	--	--	0.01	--	0.1	9.6	Pass																										
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG	0.0014	1	1.03	--	0.0007	--	0.002	999.999	Pass																										
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0102	1	1.03	--	--	--	0.011	0.020	Pass																										
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.0088	--	--	--	0.0003	--	0.009	999.999	Pass																										
Fed	150,000 miles	Federal Tier 4 Bin 20	PM	0.00007	--	--	--	0	--	0.0001	0.0005	Pass																										
CA	150,000 miles	California LEV-IV SULEV20	CO	0.1	--	--	--	0.01	--	0.1	9.6	Pass																										
CA	150,000 miles	California LEV-IV SULEV20	NMOG	0.0014	1	1.03	--	0.0007	--	0.002	999.999	Pass																										
CA	150,000 miles	California LEV-IV SULEV20	NMOG+NOX	0.0102	1	1.03	--	--	--	0.011	0.030	Pass																										
CA	150,000 miles	California LEV-IV SULEV20	NOX	0.0088	--	--	--	0.0003	--	0.009	999.999	Pass																										
CA	150,000 miles	California LEV-IV SULEV20	PM	0.0001	--	--	--	0	--	0	0.003	Pass																										

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Test #	VTYX10095046	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/14/2026	Fuel	Gasoline
Fuel Batch ID	2E5-03	Fuel Calibration Number	3
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4051	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	U
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))	3.5784867	--	
METHANE (CH4 - Methane)	0.001743	--	
CO (Carbon Monoxide)	0.067645	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.41	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.31	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.49	--	
MFR FE (Manufacturer Fuel Economy)	999	999	
NOX (Nitrogen Oxide)	0.001908	--	
N2O (Nitrous Oxide)	0	--	
HC-NM (Non-methane Hydrocarbon)	0	--	
NMOG (Non-methane organic gases)	0	--	
HC-TOTAL (Total Hydrocarbon)	0.001569	--	
WATT-HRS (Watt Hours)	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	
Carbon-Related Exhaust Emissions	0	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	252.942855	--	
Manufacturer Test Comments	NMOG = HC-NM x 1.0300		

Certification Summary Information Report

Test Group		VTYXJ02.5VEA				Evaporative/Refueling Family				VTYXR0165J42		
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 4 Bin 20	CO	0.07	--	--	--	0.01	--	0.1	1.7	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG	0	1	1.03	--	0.0007	--	0.001	999.999	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NMOG+NOX	0.0019	1	1.03	--	--	--	0.003	0.020	Pass
Fed	150,000 miles	Federal Tier 4 Bin 20	NOX	0.0019	--	--	--	0.0003	--	0.002	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	CO	0.07	--	--	--	0.01	--	0.1	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG	0	1	1.03	--	0.0007	--	0.001	999.999	Pass
CA	150,000 miles	California LEV-IV SULEV20	NMOG+NOX	0.0019	1	1.03	--	--	--	0.003	0.020	Pass
CA	150,000 miles	California LEV-IV SULEV20	NOX	0.0019	--	--	--	0.0003	--	0.002	999.999	Pass

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Fuel Properties			
Fuel Batch ID	2E5-03	Fuel Calibration Number	3
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/27/2025
Fuel Batch Calibration Effective Date	05/13/2026	Fuel Batch Calibration Ineffective Date	05/31/2026
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.74
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.528	Fuel Carbon Mass Fraction (E10)	0.826
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	2F2A12	Fuel Calibration Number	7
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/09/2022
Fuel Batch Calibration Effective Date	12/01/2022	Fuel Batch Calibration Ineffective Date	12/31/2022
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.74
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17820
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	--
Fuel Batch ID	2E5-03	Fuel Calibration Number	4
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	05/27/2025
Fuel Batch Calibration Effective Date	06/01/2026	Fuel Batch Calibration Ineffective Date	06/30/2026
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.74
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.528	Fuel Carbon Mass Fraction (E10)	0.826
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--
Fuel Batch ID	1F9-04	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/05/2019

Certification Summary Information Report

Test Group	VTYXJ02.5VEA	Evaporative/Refueling Family	VTYXR0165J42
Fuel Batch Calibration Effective Date	07/25/2019	Fuel Batch Calibration Ineffective Date	07/31/2019
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.739
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17823
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	Weight Fraction CO2	--
Fuel Batch ID	2F2A12	Fuel Calibration Number	6
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/09/2022
Fuel Batch Calibration Effective Date	11/15/2022	Fuel Batch Calibration Ineffective Date	11/30/2022
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.74
Fuel Ethanol Volume Percent (%)	10	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17820
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	--
Fuel Batch ID	2M3A01	Fuel Calibration Number	25
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	12/22/2023
Fuel Batch Calibration Effective Date	05/01/2026	Fuel Batch Calibration Ineffective Date	05/31/2026
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	0.825
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.735
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.552	Fuel Carbon Mass Fraction (E10)	0.825
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42		
Consolidated List of Standards										
Exhaust Standards										
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 4 Bin 20		
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	CREE	--	--	--	0	--	--	0.014	999.9999	
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999	
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.020	
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV SULEV20		
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	
150,000 miles	CO	--	--	--	--	--	--	0.01	1.0	
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004	
150,000 miles	METHANE	--	--	--	--	--	--	0.0029	0.030	
150,000 miles	N2O	--	--	--	--	--	--	0.0005	0.010	
150,000 miles	NMOG	--	1	1.1	--	--	--	0.0007	999.999	
150,000 miles	NMOG+NOX	--	1	1.1	--	--	--	0.001	0.020	
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999	
150,000 miles	PM	--	--	--	--	--	--	0	0.001	

Certification Summary Information Report

Test Group		VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDT2 (LVW 3751-5750, GVW 0-6000)			Standard Level			Federal Tier 4 Bin 20	
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
150,000 miles	CO	--	--	--	--	--	--	0.01	10.0
150,000 miles	NMOG	--	1	1.1	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.1	--	--	--	0.001	0.200
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.0005
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV SULEV20	
Fuel		Gasoline			Test Procedure			HWFE	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.020
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV SULEV20	
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	--	--	--	--	--	--	--	1.0
4,000 miles	HCHO	--	--	--	--	--	--	--	0.008
4,000 miles	NMOG	--	1	1.1	--	--	--	--	999.999
4,000 miles	NMOG+NOX	--	1	1.1	--	--	1	--	0.040
4,000 miles	NOX	--	--	--	--	--	--	--	999.999

Certification Summary Information Report

Test Group		VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 4 Bin 20	
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	--	--	--	--	--	--	0.01	9.6
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.020
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.0005
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV SULEV20	
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	--	--	--	--	--	--	0.01	9.6
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 4 Bin 20	
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
150,000 miles	CO	--	--	--	--	--	--	0.01	1.7
150,000 miles	CREE	--	--	--	0	--	--	0.014	999.9999
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	1	1.1	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.1	--	--	--	0.001	0.020
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.0005

Certification Summary Information Report

Test Group		VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42	
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV SULEV20	
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	--	--	--	--	--	--	0.01	10.0
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 4 Bin 20	
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	--	--	--	--	--	--	0.01	1.7
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.020
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 4 Bin 20	
Fuel		Gasoline			Test Procedure			Partial Soak (PS) - 40 minute	
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	1	1.1	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.1	--	--	--	0.001	0.015
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999

Certification Summary Information Report

Test Group	VTYXJ02.5VEA			Evaporative/Refueling Family			VTYXR0165J42		
Cert Region	California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class	LDV/Passenger Car			Standard Level			California LEV-IV SULEV20		
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	--	--	--	--	--	--	0.01	1.0
150,000 miles	NMOG	--	1	1.03	--	--	--	0.0007	999.999
150,000 miles	NMOG+NOX	--	1	1.03	--	--	--	0.001	0.020
150,000 miles	NOX	--	--	--	--	--	--	0.0003	999.999

Evaporative/Refueling Standards

Evaporative/Refueling Family		VTYXR0165J42		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV 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	--	0.300	0		

Evaporative/Refueling Family		VTYXR0165J42		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Spitback					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	4,000 miles	SPITBACK	--	1.0	0		

Evaporative/Refueling Family		VTYXR0165J42		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal Fuel Running Loss					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0		

Evaporative/Refueling Family		VTYXR0165J42		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV 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	--	0.01	0		

Certification Summary Information Report

Test Group		VTYXJ02.5VEA		Evaporative/Refueling Family		VTYXR0165J42	
Evaporative/Refueling Family		VTYXR0165J42		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		2-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.300	0		
Evaporative/Refueling Family		VTYXR0165J42		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0		
Evaporative/Refueling Family		VTYXR0165J42		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel 3-day evap					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.300	0		
Evaporative/Refueling Family		VTYXR0165J42		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Federal fuel refueling test (ORVR)					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0		
Evaporative/Refueling Family		VTYXR0165J42		Cert Region		California + CAA Section 177 states	
Cert/In-Use Code		Cert		Standard Level		California LEV-IV 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	--	0.300	0		

Certification Summary Information Report

Test Group		VTYXJ02.5VEA	Evaporative/Refueling Family		VTYXR0165J42
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		VTYXJ02.5VEA	Evaporative/Refueling Family		VTYXR0165J42
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

Certification Summary Information Report

Test Group		VTYXJ02.5VEA	Evaporative/Refueling Family		VTYXR0165J42
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		VTYXJ02.5VEA	Evaporative/Refueling Family		VTYXR0165J42
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	