TOYOTA

Application For Certification - Part 1
2027 Model Year

Durability Group : VTYXEEVNNLZZ

Evap/refueling Families : N/A

Test Group : VTYXT00.0D12

Test Group Description : Battery electric vehicle (BEV), LDT4

Applicable Standards : Federal State : Tier 4-Bin 0 – LDT4

: California : See Federal

Carlines Covered : TZ 450e (20 inch Wheels)

Engine Series : N/A

Vehicles Tested :

Vehicle I.D.	Config.	Test	Test Number
27-XH1E	00	MCT	VTYX10094692
27-XH2E	00	MCT	VTYX10094691

EPA Response Requested By : September 11, 2026

For Questions, Contact : Lisa Florida 734-695-2697

Note :

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1. Correspondence and Communications

Please refer to the FOI common file.

2. Confidential Information

2.1 Special Test Procedure

Please refer to the section 16 of CBI Common file

2.2 Projected sales in California

Please refer to the E-Cert

3. Facilities, Equipment and Test Procedures

The facilities and equipment comply with the related regulations, including 40CFR §1066.210

<Equipment> 48 inch, single roll electric dynamometer

<Regenerative Braking> Enabled

<Range Test Procedure>

Tested according to "California Exhaust Emission Standards and Test Procedures for 2026 and Subsequent Model Zero-Emission Vehicles, adopted March 22, 2012

<Test Procedure Used>

Tested using the Multi Cycle Test (MCT)sequence

3.1 Reserved

3.2 Battery and Vehicle Pre-Conditioning Procedures

The traction battery and vehicle does not require any pre-conditioning to enable the vehicle system.

3.3 Battery and Vehicle Break-in Period and Range

Break in Period of Vehicle	Break in mile of Vehicle
N/A	2,000 mile

4. Reserved

5. Reserved

6. Maintenance

6.1 Test Vehicle Scheduled Maintenance

N/A(same as “Recommended Customer Maintenance Schedule” found in next section).

6.2 Recommended Customer Maintenance Schedule

Please refer to recommended maintenance schedule in the owner’s manual.

6.3 Lubricants and heater fuels, if any

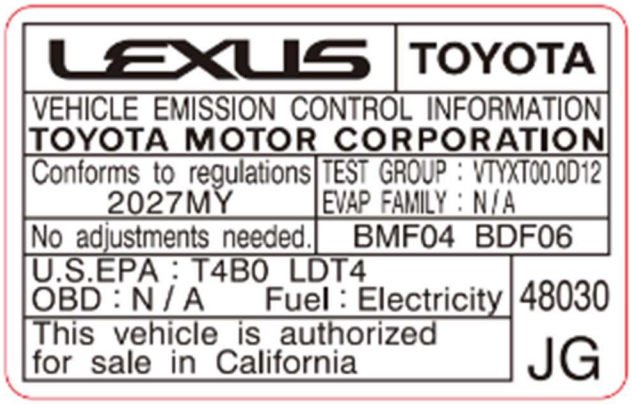
Please refer to recommended Fluid in the owner’s manual.

7. Labels

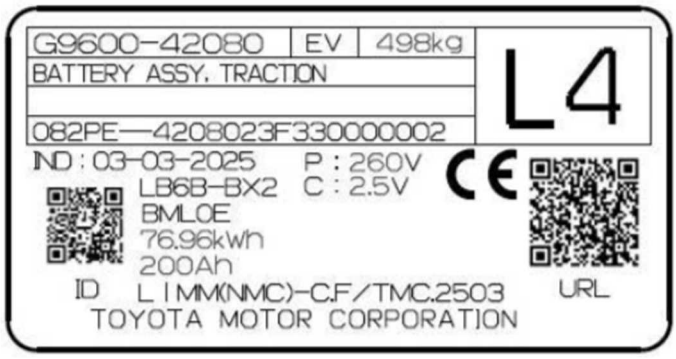
7.1 VECI Label locations : underside of the hood

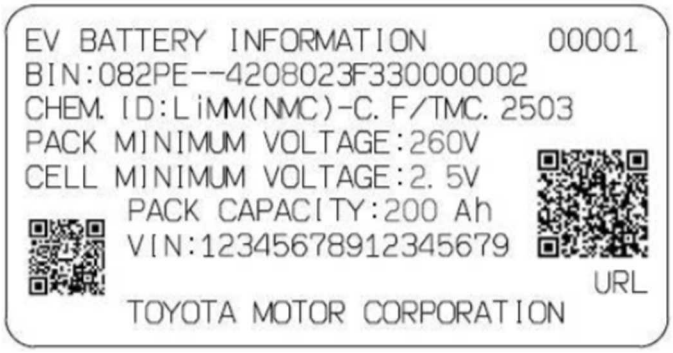
7.2 Information of the Labels

Sample of VECI label



Sample of Battery label





7.3 Reserved

8. General Technical Description

Please refer to the section of CBI Test Group file

9. Reserved

10. Reserved

11. Starting and Shifting Schedules

11.1 Starting Procedure

Please refer to Section 12 of the FOI common file

12. Description of Test Group

12. Test Group Description
12.1 Test group name : VTYXT00.0D12
12.2 Engine displacements covered : N/A
12.3 Arrangement and number of cylinders : N/A
12.4 Vehicle class (es) covered : LDT4
12.5 Federal emission standards class : Tier4 - Bin0- LDT4
12.6 California Emission standards class : See Federal
12.7 Applicable emission standards
Please refer to Certification Summary Information Report in Section 16 CBI common file.

13. Reserved

14. Request for Certificate

Test group : VTYXT00.0D12
Evap/refueling family : N/A

TOYOTA MOTOR CORPORATION requests that EPA/CARB issue a 2027 model year certificate of conformity and Executive Order for the above specified test group/evaporative family combination more fully described in this application. This combination complies with the following emission standards:

Federal: Tier 4- Bin 0

California: See Federal

Kevin Webber
General Manager
Regulatory Affairs & Environmental Sustainability
Toyota Motor North America, Inc.

15. Other Information

Fee filing form

Invoice No.:EPA2027MY007

US EPA Fee Form

Help and EPA Instructions

* Required Field

Tracking Information

Pay.gov Tracking ID: 281Q9RRB

Agency Tracking ID: 77370575259

General Information

Date: 04/28/2026

Process Code *
Submit New Fee Filing Form

Manufacturer Code *
TYX

Manufacturer Name *
Toyota Motor Corporation

Contact Name *
Keisha Anderson

Contact Email Address *
keisha.anderson@toyota.com

Contact Phone *
734-995-3552

Calendar Year complete application submitted to EPA *
2026

PLEASE NOTE: These fees apply to complete certification applications received by EPA from January 1, 2026, through December 31, 2026. The applicable fee is determined by the calendar year in which the complete certification application is received, not the model year.

Engine Family / Evaporative Family / Test Group *
VTYXT00.0D12

Certificate Request Type (Industry Sector Code)

Certificate Request Type *

- (●) On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V)
- ( ) On-Highway HDE Dyno Cert (Federal) (E, H)
- ( ) On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)
- ( ) On-Highway Motorcycle (C)
- ( ) On-Highway HDV Evap (F)
- ( ) On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V)
- ( ) On-Highway HDE Dyno Cert (California-Only) (E, H)
- ( ) Nonroad CI (L)
- ( ) Nonroad SI (B, S)
- ( ) Locomotive (G, K)
- ( ) All Nonroad Recreational, excluding Marine engines (X, Y)
- ( ) All Marine (Including IMO) (M, N, W)
- ( ) Component Certification for Evaporative Emissions (P)

IMO Name (Required for dual US/IMO Marine Only)

ICI VIN Number (Required for ICIs Only)

Do you qualify for a Reduced Fee? *
No

Payment Information

Amount Owed
$32,317.00

Payment Type *
Offline ACH

Comments

EPA Form Number 3520-29
OMB Control No. 2060-0545
Approval expires 7/31/2027
The public reporting and recordkeeping burden for this collection of information is estimated to average 12 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.

The content of this document may contain Sensitive But Unclassified (SBU) data and/or Controlled Unclassified Information (CUI).

16 Test Result

16.1 Test Vehicle Description

Vehicle Type	Vehicle ID	Config.	Tests Performed
Certification FEDV	27-XH1E	00	Multi-cycle
	27-XH2E	00	Multi-cycle

For the range values and energy consumption rate, please refer to the supplemental sheet and E-Cert.

Certification Summary Information Report

Manufacturer	Toyota Motor Corporation	**Manufacturer Code**	TYX
Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	07/01/2026 03:04:08 AM
Model Year	2027		

Test Group Information

CSI Type	New	**Running Change Reference Number**	--
GHG Exempt Status	Not Exempt		

Drive Sources and Fuel(s)

Drive Source #1: Electric Motor

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

Hybrid Indicator	No		
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
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	--
Federal Clean Fuel Vehicle ILEV	--	**California Partial Zero Emissions Vehicle Indicator**	--
Durability Group Name	VTYXEEVNNLZZ	**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	--	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	Not Applicable	**SFTP Tier 2 Composite CO Option**	--
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	This vehicle is exempted from OBD requirement because this vehicle is BEV.		
Mfr Test Group Comments	Durability Group Equivalency Factor is not available because this vehicle is BEV (1.0 is a dummy).		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Toyota Motor Corporation	2 - LEXUS	25 - TZ 450e AWD(20 inch Wheels)	Federal	All Wheel Drive	Automatic	1	No
Toyota Motor Corporation	2 - LEXUS	25 - TZ 450e AWD(20 inch Wheels)	California + CAA Section 177 states	All Wheel Drive	Automatic	1	No

Engine Description

Hybrid Type	--	**Hybrid Description**	--
Engine Type	--	**Mfr Engine Description**	--
Engine Block Arrangement	--	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	--	**Oil Viscosity/Classification**	
Number of Cylinders/Rotors	--	**Mechanically Variable Compression Ratio Indicator**	--

After Treatment Device(s) (ATD)

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	--
Mfr Emission Control Device 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
Electricity	--	--	--	--	--	--	--	--	--	--

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	385	**Battery Energy Capacity**	200
Battery Specific Energy	155	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Both	**Driver Controlled Regenerative Braking**	Yes
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	2		
Motor/Generator Type 1	AC Synchronous	**Rated Motor/Generator Power**	88
Motor/Generator Type 2	AC Synchronous	**Rated Motor/Generator Power**	167
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	--		

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	27-XH1E / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	VTYXT00.0D12	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2027		

Vehicle Model

Represented Test Vehicle Make	LEXUS	**Represented Test Vehicle Model**	TZ 450e (20 inch Wheels)

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity

Hybrid Indicator	No		
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
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**	182
Displacement (liters)	0.001		
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**	All Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5430	**Equivalent Test Weight (pounds)**	5500
GVWR (lbs)	6615	**N/V Ratio**	0
Axle Ratio	0		
Transmission Type	Automatic	**# of Transmission Gears**	1
Transmission Lockup	No	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	31.506	0.16393	0.02158	-11.708	0.26018	0.019194	12.5

Emission Control Device Comments --

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Manufacturer Test Vehicle Comments Drive mode is Normal. Front Motor Power - 64 kW; Rear Motor Power - 71.9 kW

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Test #	**VTYX10094692**	**Test Procedure**	**77 - Multi-Cycle Test (MCT)**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	06/24/2026	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4301	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	385	**Recharge Event Energy (kiloWatt-hours)**	782.627
Charge Depleting Range (Calculated miles)	386.547	**Charge Depleting Range (Actual miles)**	386.547
Charge Depleting Range Highway (Calculated miles)	330.806	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	386.547
Number of Charge Depleting Bags/Phases Conducted	8	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase #1

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4389001
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.22
Drive Trace Energy Economy Rating	-0.07
Drive Trace Inertia Work Ratio Rating	0.3
Integrated DC KW-HRS	1.5507343
Manufacturer Fuel Economy	20.8462846

Charge Depleting Bag/Phase #2

Certification Summary Information Report

Test Group	VTYXT00.0D12	Evaporative/Refueling Family	--

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.2526046
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	3.22
Drive Trace Energy Economy Rating	-0.13
Drive Trace Inertia Work Ratio Rating	4.26
Integrated DC KW-HRS	2.3007097
Manufacturer Fuel Economy	22.440246

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4497045
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.48
Drive Trace Energy Economy Rating	0.17
Drive Trace Inertia Work Ratio Rating	0.83
Integrated DC KW-HRS	1.4169715
Manufacturer Fuel Economy	19.0205068

Charge Depleting Bag/Phase #4

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	192.7531482
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0
Drive Trace Energy Economy Rating	0
Drive Trace Inertia Work Ratio Rating	0
Integrated DC KW-HRS	55.1284919
Manufacturer Fuel Economy	28.6005663

Charge Depleting Bag/Phase #5

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.444958
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.3
Drive Trace Energy Economy Rating	0.05
Drive Trace Inertia Work Ratio Rating	0.48
Integrated DC KW-HRS	1.381454
Manufacturer Fuel Economy	18.5555645

Charge Depleting Bag/Phase #6

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.2538541
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	1.22
Drive Trace Energy Economy Rating	0.2
Drive Trace Inertia Work Ratio Rating	1.63
Integrated DC KW-HRS	2.1930192
Manufacturer Fuel Economy	21.3872674

Charge Depleting Bag/Phase #7

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4514048
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.77
Drive Trace Energy Economy Rating	0.29
Drive Trace Inertia Work Ratio Rating	1.15
Integrated DC KW-HRS	1.382005
Manufacturer Fuel Economy	18.5469061

Charge Depleting Bag/Phase #8

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	24.7854128
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0
Drive Trace Energy Economy Rating	0
Drive Trace Inertia Work Ratio Rating	0
Integrated DC KW-HRS	7.1385933
Manufacturer Fuel Economy	28.8015914

Manufacturer Test Comments To avoid system rejection, we are substituting the value of EPA-Calculated UDDS Range (TI-76) into the Manufacturer-Calculated Charge Depleting Range (Calculated Miles) (TI-18.6.1). This will be corrected later.</ManufacturerCommentText>

Certification Summary Information Report

Test Group VTYXT00.0D12 **Evaporative/Refueling Family** --

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 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Emission Data Vehicle Information

Vehicle ID / Configuration	27-XH2E / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	VTYXT00.0D12	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2027		

Vehicle Model

Represented Test Vehicle Make	LEXUS	**Represented Test Vehicle Model**	TZ 450e (20 inch Wheels)

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Electric Motor	Electricity

Hybrid Indicator	No		
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
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**	182
Displacement (liters)	0.001		
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**	All Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5430	**Equivalent Test Weight (pounds)**	5500
GVWR (lbs)	6615	**N/V Ratio**	0
Axle Ratio	0		
Transmission Type	Automatic	**# of Transmission Gears**	1
Transmission Lockup	No	**Creeper Gear**	No

Dynamometer Coefficients:

	Target Coefficients			Set Coefficients			
Coefficient Category	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**A (lbf)**	**B (lbf/mph)**	**C (lbf/mph**2)**	**EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients**
City/Highway/Evap	31.506	0.16393	0.02158	-14.681	0.26777	0.019372	12.5

Emission Control Device Comments --

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Manufacturer Test Vehicle Comments Drive mode is Normal. Front Motor Power - 64 kW; Rear Motor Power - 71.9 kW

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Test #	**VTYX10094691**	**Test Procedure**	**77 - Multi-Cycle Test (MCT)**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	62 - Electricity
Test Date	04/02/2026	**Fuel**	Electricity
Fuel Batch ID	--	**Fuel Calibration Number**	--
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	Toyota Motor Corporation		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3200	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	385	**Recharge Event Energy (kiloWatt-hours)**	80.8
Charge Depleting Range (Calculated miles)	389.084	**Charge Depleting Range (Actual miles)**	389.084
Charge Depleting Range Highway (Calculated miles)	335.077	**Derived 5-Cycle Coefficient Model Year**	--
All Electric Range Unadjusted (miles)	--	**Equivalent All Electric Range (miles)**	389.084
Number of Charge Depleting Bags/Phases Conducted	8	**Transition Bag/Phase Number**	--

Charge Depleting Bag/Phase #1

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4528742
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.34
Drive Trace Energy Economy Rating	0.03
Drive Trace Inertia Work Ratio Rating	0.63
Integrated DC KW-HRS	1.533401
Manufacturer Fuel Economy	20.5746258

Charge Depleting Bag/Phase #2

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.2539742
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	1.01
Drive Trace Energy Economy Rating	-0.11
Drive Trace Inertia Work Ratio Rating	1.41
Integrated DC KW-HRS	2.2788005
Manufacturer Fuel Economy	22.2235829

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4532798
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.5
Drive Trace Energy Economy Rating	0.27
Drive Trace Inertia Work Ratio Rating	0.82
Integrated DC KW-HRS	1.4192977
Manufacturer Fuel Economy	19.0425927

Charge Depleting Bag/Phase #4

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	190.4061384
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0
Drive Trace Energy Economy Rating	0
Drive Trace Inertia Work Ratio Rating	0
Integrated DC KW-HRS	53.9215535
Manufacturer Fuel Economy	28.3192307

Charge Depleting Bag/Phase #5

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.462706
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.23
Drive Trace Energy Economy Rating	-0.13
Drive Trace Inertia Work Ratio Rating	0.52
Integrated DC KW-HRS	1.3733694
Manufacturer Fuel Economy	18.4031023

Charge Depleting Bag/Phase #6

Certification Summary Information Report

Test Group	VTYXT00.0D12	Evaporative/Refueling Family	--

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.2626504
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.99
Drive Trace Energy Economy Rating	0.21
Drive Trace Inertia Work Ratio Rating	1.45
Integrated DC KW-HRS	2.16606
Manufacturer Fuel Economy	21.1062442

Charge Depleting Bag/Phase #7

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.4495795
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0.09
Drive Trace Energy Economy Rating	-0.22
Drive Trace Inertia Work Ratio Rating	0.42
Integrated DC KW-HRS	1.3709661
Manufacturer Fuel Economy	18.4032687

Charge Depleting Bag/Phase #8

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	30.1976859
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	0
Drive Trace Energy Economy Rating	0
Drive Trace Inertia Work Ratio Rating	0
Integrated DC KW-HRS	8.5307059
Manufacturer Fuel Economy	28.2495353

Manufacturer Test Comments --

Certification Summary Information Report

Test Group VTYXT00.0D12 **Evaporative/Refueling Family** --

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 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 4 Bin 0	CREE	0	--	--	--	0	--	0	--	--

Fuel Properties

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

Consolidated List of Standards

Exhaust Standards

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	**Standard Level**	California ZEV
Fuel	Electricity	**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	--	--	--	--	--	--	--	0.0

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDT2 (LVW 3751-5750, GVW 0-6000)	**Standard Level**	California ZEV
Fuel	Electricity	**Test Procedure**	Multi-Cycle Test (MCT)

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	--	--	--	--	--	--	--	0.0
150,000 miles	MFR FE	--	--	--	--	--	--	--	999.9999

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 4 Bin 0
Fuel	Electricity	**Test Procedure**	Multi-Cycle Test (MCT)

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	0.0
150,000 miles	CREE	--	--	--	--	--	--	0	999.9999
150,000 miles	MFR FE	--	--	--	--	--	--	--	999.9999

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--
Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	**Standard Level**	Federal Tier 4 Bin 0
Fuel	Electricity	**Test Procedure**	Federal fuel 3-day exhaust

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	0.0

Certification Summary Information Report

Test Group	VTYXT00.0D12	**Evaporative/Refueling Family**	--

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	VTYXT00.0D12	**Evaporative/Refueling Family**	--
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	VTYXT00.0D12	**Evaporative/Refueling Family**	--
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	VTYXT00.0D12	**Evaporative/Refueling Family**	--
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