

Certification Summary Information Report

Manufacturer	Ford Motor Company	Manufacturer Code	FMX
Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Certificate Number	TFMXT03.51F1-057	CARB Executive Order #	--
Certificate Issue Date	10/23/2025	Certificate Revision Date	--
Certificate Effective Date	10/23/2025	Conditional Certificate	No
CSI Revision #	--	CSI Submission/Revision Date	12/10/2025 03:17:34 PM
Model Year	2026		

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
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		
	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
	Electricity	--	No
Drive Source #2:	Combustion Engine		
	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	LDT4
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	TFMXHHGVNE1A	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	02/02/2026	CAP2000 Conditional Certificate?	No
Independent Commercial Importer?	No	Alternative Fuel Converter Certificate?	No
SFTP Federal Composite Compliance Identifier	Tier 3	SFTP Tier 2 Composite CO Option	No
SFTP LEV-III Composite Compliance Indicator	Yes		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	TFMXT02.02JF
Test Group OBD Compliance Level	Partial - with deficiencies	Number of Test Group OBD Deficiencies	2
OBD Deficiencies Comments	--		
Mfr Test Group Comments	E10 City Litmus Value: 15.2, City Litmus Threshold: 14.7, Hwy Litmus Value 20.1, Hwy Litmus Threshold: 18.4		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	08/28/2025 12:49:32 PM				
Integrated ORVR?	No	Fuel(s)	Electricity, Gasoline				
Multiple Fuel Storage	Fuels Stored Separately						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	Plastic				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	Yes	Air Intake System Vapor Storage Device Description	AIS HC Trap in Air Induction System				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	1 X 4.5L HA 3-port Rect.				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	295	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	0				
Mfr Evaporative/Refueling Family Comments	F150 FHEV 3.5L GTPFDI						
Leak Family Details							
Leak Family Indicator	Yes						
Canister Bleed Test Indicator	No	Applicability of Evaporative Canister Bleed Test	--				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Leak Family Name	Applicability of Leak Family Requirements	Leak Family Standard (inches)	Leak Family Description				
TFMXR0295LDG-001	50 State	0.02	--				
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Ford Motor Company	1 - Ford	131 - F150 PICKUP 2WD HEV	Federal	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	131 - F150 PICKUP 2WD HEV	California + CAA Section 177 states	2-Wheel Drive, Rear	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	132 - F150 PICKUP 4WD HEV	Federal	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes
Ford Motor Company	1 - Ford	132 - F150 PICKUP 4WD HEV	California + CAA Section 177 states	Part-time 4-Wheel Drive	Semi-Automatic	10	Yes

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG	
Engine Description				
Hybrid Type	IC Engine/Electric Motor	Hybrid Description	-- Hybrid Electric w/4 stroke Atkinson, Gasoline Fueled, Turbocharged, Direct Injection, Sequential Fuel Injection, Catalyst Code E (Pt/Pd/Rh)	
Engine Type	4-Stroke Spark Ignition	Mfr Engine Description		
Engine Block Arrangement	V-shaped engine	Mfr Engine Block Arrangement Description	--	
Camless Valvetrain Indicator	No	Oil Viscosity/Classification	5W-30 / ILSAC GF-7	
Number of Cylinders/Rotors	6	Mechanically Variable Compression Ratio Indicator	N	
After Treatment Device(s) (ATD)				
ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic	Monolith
3	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
4	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic	Monolith
5	Three-way catalyst	Platinum + Rhodium	Ceramic	Monolith
6	Three-way catalyst	Platinum + Rhodium	Ceramic	Monolith
Mfr After Treatment Device (ATD) Comments	Three-way catalyst			
Direct Ozone Reduction (DOR) Device	Not Equipped			
Mfr Emission Control Device Comments	--			

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG							
Engine Configuration Number 1										
Engine Displacement (liters)	3.5	Engine Rated Horsepower	430							
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2							
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2							
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Air							
Air Aspiration Drive Method(s)	Mechanical									
Cylinder Deactivation	No									
Cylinder Deactivation Description	--									
Variable Valve Timing	Yes									
Variable Valve Timing System Description	TiVCT									
Variable Valve Lift?	No									
Variable Valve Lift System Description	--									
Number of Knock Sensors	4	Number of Air/Fuel Sensors	4							
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	--							
Air/Fuel Sensor # 3 Type	Heated oxygen	Air/Fuel Sensor # 3 Description	--							
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--							
Mfr Air/Fuel Sensor Comments	--									
Exhaust Gas Recirculation	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	3.5L F150 FHEV									
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	SFMX10086932	SFMX91005984	SFMX10086934	SFMX10086931	SFMX91005985	20	228.2	0	286.1	1
Electricity	--	--	--	--	--	--	--	--	--	--
SFTP LEV-III Official Test Numbers										
Test Group Fuel	FTP	US06	SC03							
Gasoline	SFMX10086932	SFMX91005984	SFMX10086934							
Electricity	--	--	--							

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Official Charge Depleting Test Numbers			
Test Group Fuel	UDDS	Highway	
Gasoline	--	--	
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	281	Battery Energy Capacity	5
Battery Specific Energy	36.8	Battery Charger Type	On-Board
Number of Capacitors	--	Capacitor Rating (In Farads)	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Both	Driver Controlled Regenerative Braking	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	1		
Motor/Generator Type 1	DC Permanent Magnet, brushless	Rated Motor/Generator Power	35
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	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG									
Emission Data Vehicle Information												
Vehicle ID / Configuration	MFD1-3.5-J-945 / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	MFMXT03.51F1	Original Evaporative/Refueling Family	MFMXR0295LDG									
Original Test Vehicle Model Year	2021											
Vehicle Model												
Represented Test Vehicle Make	Ford	Represented Test Vehicle Model	F150 FHEV									
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	0	Odometer Correction Factor	1.03									
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles											
Odometer Correction Units	Miles											
Engine Code	MTFDCNNB00	Rated Horsepower	400									
Displacement (liters)	3.5											
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'										
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel									
Charge Air Cooler Type	Air	Drive Mode While Testing	Part-time 4-Wheel Drive									
Shift Indicator Light Usage	Not equipped	Aged Emission Components	150,000 (mi)									
Curb Weight (lbs)	5604	Equivalent Test Weight (pounds)	6000									
GVWR (lbs)	7350	N/V Ratio	25.3									
Axle Ratio	3.73											
Transmission Type	Semi-Automatic	# of Transmission Gears	10									
Transmission Lockup	Yes	Creeper Gear	No									

Certification Summary Information Report

Test Group	TFMXT03.51F1			Evaporative/Refueling Family			TFMXR0295LDG
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	55.69	0.2272	0.03972	9.53	-0.11697	0.03797	22.2
Cold CO	55.69	0.2272	0.03972	9.53	-0.11697	0.03797	N/A
US06	55.69	0.2272	0.03972	9.53	-0.11697	0.03797	N/A
Emission Control Device Comments	T3B70/ULEV70 SFTP-0.080 PM3 CB4 T3e/L3e						
Manufacturer Test Vehicle Comments	F150 3.5L FHEV AWD						

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	MFMX10063823	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	02/06/2020	Fuel	N/A
Fuel Batch ID	373-B	Fuel Calibration Number	49
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4804	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)	527.31661	--
FE BAG 1 (Bag 1 Fuel Economy)	16.48995	16.48995
CO2 BAG 2 (Bag 2 Carbon Dioxide)	470.63506	--
FE BAG 2 (Bag 2 Fuel Economy)	18.46098	18.46098
METHANE (CH4 - Methane)	0.00495	--
CO (Carbon Monoxide)	0.34786	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.205247	--
DT-EER (Drive Trace Energy Economy Rating)	0.133732	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.224012	--
HCHO (Formaldehyde)	0.000182	--
MFR FE (Manufacturer Fuel Economy)	17.56144	17.56144
NOX (Nitrogen Oxide)	0.04493	--
N2O (Nitrous Oxide)	0.00166	--
HC-NM (Non-methane Hydrocarbon)	0.0128905	--
NMOG (Non-methane organic gases)	0.01414	--
PM (Particulate Matter)	0.0009	--
HC-TOTAL (Total Hydrocarbon)	0.0175	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	496	999
Optional Carbon-Related Exhaust Emissions	496	999

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
-------------------	--------------	-------------------------------------	--------------

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	495.00813	--

Manufacturer Test Comments FTP & HWY FUL NMOG = 1.04 * NMHC_r

Test #	MFMX10064216	Test Procedure	23 - 2-day evap
Exhaust Test # for this Evap Test	MFMX10063823	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/05/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5105	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.1644	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1644	--

Manufacturer Test Comments 2 Day EVAP THC x 1.08

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	0.1644	0.0028	0.167	0.5	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.1644	0.0028	0.167	0.5	Pass

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	MFMX10065306	Test Procedure	34 - Federal fuel 3-day evap
Exhaust Test # for this Evap Test	MFMX10063823	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/29/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5232	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.215	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.215	--

Manufacturer Test Comments Measured NMOG

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	0.215	0.0028	0.218	0.5	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.215	0.0028	0.218	0.5	Pass

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
-------------------	--------------	-------------------------------------	--------------

Test #	MFMX10064215	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	MFMX10063823	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	03/03/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Actual Total Hydrocarbon Equivalent Measurement (with speciation)		
Test Start Odometer Reading	5160	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 86 (+/- 2 mph, +/- 1 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0.00688	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.00688	--

Manufacturer Test Comments

ORVR TEST

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.007	0.003	0.01	0.2	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	OMHCE	0.007	0.003	0.01	0.2	Pass

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	MFMX10065305	Test Procedure	32 - Federal Fuel Running Loss
Exhaust Test # for this Evap Test	MFMX10063823	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	05/29/2020	Fuel	Gasoline
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5243	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	No		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
OMHCE (Organic material Hydrocarbon Equivalent)	0	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0	--

Manufacturer Test Comments Measured NMOG

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

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
-------------------	--------------	-------------------------------------	--------------

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	36.08	0.58	0.03296	-23.95	0.378	0.02999	19.7
Cold CO	36.08	0.58	0.03296	-23.95	0.378	0.02999	N/A
US06	36.08	0.58	0.03296	-23.95	0.378	0.02999	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments --

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	SFMX10086931	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	06/30/2024	Fuel	Gasoline
Fuel Batch ID	375-B	Fuel Calibration Number	54
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4011	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	760.22096	--
FE BAG 1 (Bag 1 Fuel Economy)	11.30785	11.30785
CO2 BAG 2 (Bag 2 Carbon Dioxide)	538.40592	--
FE BAG 2 (Bag 2 Fuel Economy)	16.09949	16.09949
CO2 BAG 3 (Bag 3 Carbon Dioxide)	512.91203	--
FE BAG 3 (Bag 3 Fuel Economy)	16.88469	16.88469
METHANE (CH4 - Methane)	0.01801	--
CO (Carbon Monoxide)	0.61134	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.2588	--
DT-EER (Drive Trace Energy Economy Rating)	-0.0183	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.8996	--
MFR FE (Manufacturer Fuel Economy)	15	15
NOX (Nitrogen Oxide)	0.038132	--
N2O (Nitrous Oxide)	0.01	--
HC-NM (Non-methane Hydrocarbon)	0.1049	--
NMOG (Non-methane organic gases)	0.109134	--
HC-TOTAL (Total Hydrocarbon)	0.12416	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	578	--

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
-------------------	--------------	-------------------------------------	--------------

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	577.30936	--

Manufacturer Test Comments --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	50,000 miles	Federal Tier 3 Bin 50	CO	0.61	--	--	--	--	--	0.6	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	HC-NM	0.1	--	--	--	--	--	0.1	0.4	Pass
CA	50,000 miles	California LEV-III ULEV50	CO	0.61	--	--	--	--	--	0.6	12.5	Pass

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	SFMX10086932	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	06/27/2024	Fuel	Gasoline
Fuel Batch ID	373-B	Fuel Calibration Number	88
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3945	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	481.03183	--
FE BAG 1 (Bag 1 Fuel Economy)	18.11638	18.11638
CO2 BAG 2 (Bag 2 Carbon Dioxide)	445.81934	--
FE BAG 2 (Bag 2 Fuel Economy)	19.55757	19.55757
METHANE (CH4 - Methane)	0.00555	--
CO (Carbon Monoxide)	0.13582	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.35	--
DT-EER (Drive Trace Energy Economy Rating)	-0.18	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.14	--
HCHO (Formaldehyde)	0.000239	--
MFR FE (Manufacturer Fuel Economy)	18.9	18.9
NOX (Nitrogen Oxide)	0.010249	--
N2O (Nitrous Oxide)	0.00016	--
HC-NM (Non-methane Hydrocarbon)	0.0071	--
NMOG (Non-methane organic gases)	0.007368	--
PM (Particulate Matter)	0.001039	--
HC-TOTAL (Total Hydrocarbon)	0.01228	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	461	999

Certification Summary Information Report

Test Group		TFMXT03.51F1			Evaporative/Refueling Family					TFMXR0295LDG		
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		460.96071			--					
Manufacturer Test Comments		--										
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.14	--	--	--	--	--	0.1	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO-COMP	0.09	--	--	--	--	--	0.1	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0002	--	--	--	--	--	0	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0056	--	--	--	--	--	0.006	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.0002	--	--	--	--	--	0	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0074	--	1.1	--	--	--	0.007	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0176	--	--	--	--	--	0.018	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX-COMP	0.0223	--	--	--	--	--	0.022	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0102	--	--	--	--	--	0.01	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	PM	0.001	--	--	--	--	--	0.001	0.003	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	0.14	--	--	--	--	--	0.1	1.7	Pass
CA	150,000 miles	California LEV-III ULEV50	CO-COMP	0.09	--	--	--	--	--	0.1	4.2	Pass
CA	150,000 miles	California LEV-III ULEV50	HCHO	0.0002	--	--	--	--	--	0	0.004	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0074	--	1.1	--	--	--	0.007	999.999	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0176	--	--	--	--	--	0.018	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX-COMP	0.0223	--	--	--	--	--	0.022	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0102	--	--	--	--	--	0.01	999.999	Pass
CA	150,000 miles	California LEV-III ULEV50	PM	0.001	--	--	--	--	--	0.001	0.003	Pass

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

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	SFMX91005985	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	07/31/2024	Fuel	Gasoline
Fuel Batch ID	28637	Fuel Calibration Number	1
Vehicle Class	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4117	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.001329	--
CO (Carbon Monoxide)	0.0092313	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	4.3275576	--
DT-EER (Drive Trace Energy Economy Rating)	0.0166088	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	6.3118238	--
MFR FE (Manufacturer Fuel Economy)	26.785244	--
NOX (Nitrogen Oxide)	0.0022687	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0000405	--
NMOG (Non-methane organic gases)	0.0000417	--
HC-TOTAL (Total Hydrocarbon)	0.0013509	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	323.725647	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		TFMXT03.51F1				Evaporative/Refueling Family				TFMXR0295LDG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CREE	999	--	--	--	0	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0	--	1.03	--	--	--	0	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0023	--	--	--	--	--	0.002	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0023	--	--	--	--	--	0.002	999.999	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0	--	1.03	--	--	--	0	999.999	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0023	--	--	--	--	--	0.002	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0023	--	--	--	--	--	0.002	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	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Test #	SFMX91005984	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	07/31/2024	Fuel	N/A
Fuel Batch ID	28637	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4142	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	737.4973755	--
FE BAG 1 (Bag 1 Fuel Economy)	999	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	402.1809082	--
FE BAG 2 (Bag 2 Fuel Economy)	999	--
METHANE (CH4 - Methane)	0.0094267	--
CO (Carbon Monoxide)	0.1116491	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.5176582	--
DT-EER (Drive Trace Energy Economy Rating)	-1.3996508	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.6785178	--
MFR FE (Manufacturer Fuel Economy)	999	--
NOX (Nitrogen Oxide)	0.033608	--
N2O (Nitrous Oxide)	0.0105971	--
HC-NM (Non-methane Hydrocarbon)	0.0158862	--
NMOG (Non-methane organic gases)	0.0163628	--
HC-TOTAL (Total Hydrocarbon)	0.0251809	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	477.2978516	--

Manufacturer Test Comments

None Unrounded Result for the following test results were modified by Verify: MFR FE, FE BAG 1, FE BAG 2

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG																																	
Test #	SFMX10086934	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	06/28/2024	Fuel	N/A																																	
Fuel Batch ID	373-B	Fuel Calibration Number	88																																	
Vehicle Class	N/A	DF Type	Mfr. Determined																																	
Verify Test Lab ID	APTL																																			
E10 Evaporative Test Measurement Method	--																																			
Test Start Odometer Reading	3996	Odometer Units	M																																	
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--																																	
State of Charge Delta	Yes																																			
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes																																	
Test Results																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Test Result Name</th> <th style="width: 30%;">Unrounded Test Result</th> <th style="width: 35%;">Verify Calculated FE Equivalent Value (miles per gallon)</th> </tr> </thead> <tbody> <tr> <td>METHANE (CH4 - Methane)</td> <td style="text-align: center;">0.00696</td> <td style="text-align: center;">--</td> </tr> <tr> <td>CO (Carbon Monoxide)</td> <td style="text-align: center;">0.03149</td> <td style="text-align: center;">--</td> </tr> <tr> <td>DT-ASCR (Drive Trace Absolute Speed Change Rating)</td> <td style="text-align: center;">-0.7037</td> <td style="text-align: center;">--</td> </tr> <tr> <td>DT-EER (Drive Trace Energy Economy Rating)</td> <td style="text-align: center;">-0.1713</td> <td style="text-align: center;">--</td> </tr> <tr> <td>DT-IWRR (Drive Trace Inertia Work Ratio Rating)</td> <td style="text-align: center;">-0.8558</td> <td style="text-align: center;">--</td> </tr> <tr> <td>MFR FE (Manufacturer Fuel Economy)</td> <td style="text-align: center;">19</td> <td style="text-align: center;">19</td> </tr> <tr> <td>NOX (Nitrogen Oxide)</td> <td style="text-align: center;">0.003672</td> <td style="text-align: center;">--</td> </tr> <tr> <td>HC-NM (Non-methane Hydrocarbon)</td> <td style="text-align: center;">0.0021</td> <td style="text-align: center;">--</td> </tr> <tr> <td>NMOG (Non-methane organic gases)</td> <td style="text-align: center;">0.002223</td> <td style="text-align: center;">--</td> </tr> <tr> <td>HC-TOTAL (Total Hydrocarbon)</td> <td style="text-align: center;">0.00958</td> <td style="text-align: center;">--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	METHANE (CH4 - Methane)	0.00696	--	CO (Carbon Monoxide)	0.03149	--	DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.7037	--	DT-EER (Drive Trace Energy Economy Rating)	-0.1713	--	DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.8558	--	MFR FE (Manufacturer Fuel Economy)	19	19	NOX (Nitrogen Oxide)	0.003672	--	HC-NM (Non-methane Hydrocarbon)	0.0021	--	NMOG (Non-methane organic gases)	0.002223	--	HC-TOTAL (Total Hydrocarbon)	0.00958	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)																																		
METHANE (CH4 - Methane)	0.00696	--																																		
CO (Carbon Monoxide)	0.03149	--																																		
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.7037	--																																		
DT-EER (Drive Trace Energy Economy Rating)	-0.1713	--																																		
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.8558	--																																		
MFR FE (Manufacturer Fuel Economy)	19	19																																		
NOX (Nitrogen Oxide)	0.003672	--																																		
HC-NM (Non-methane Hydrocarbon)	0.0021	--																																		
NMOG (Non-methane organic gases)	0.002223	--																																		
HC-TOTAL (Total Hydrocarbon)	0.00958	--																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Test Result Name</th> <th style="width: 30%;">Unrounded Test Result</th> <th style="width: 35%;">Verify Calculated CREE/OPT-CREE</th> </tr> </thead> <tbody> <tr> <td>Carbon-Related Exhaust Emissions</td> <td style="text-align: center;">458</td> <td style="text-align: center;">--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE	Carbon-Related Exhaust Emissions	458	--																											
Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE																																		
Carbon-Related Exhaust Emissions	458	--																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Test Result Name</th> <th style="width: 30%;">Unrounded Test Result</th> <th style="width: 35%;">Verify Calculated CO2</th> </tr> </thead> <tbody> <tr> <td>Carbon dioxide</td> <td style="text-align: center;">457.83177</td> <td style="text-align: center;">--</td> </tr> </tbody> </table>				Test Result Name	Unrounded Test Result	Verify Calculated CO2	Carbon dioxide	457.83177	--																											
Test Result Name	Unrounded Test Result	Verify Calculated CO2																																		
Carbon dioxide	457.83177	--																																		
Manufacturer Test Comments	--																																			

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFM XR0295LDG
Fuel Properties			
Fuel Batch ID	375-B	Fuel Calibration Number	54
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	06/28/2024
Fuel Batch Calibration Effective Date	06/28/2024	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17918
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.828	Weight Fraction CO2	--
Fuel Batch ID	28637	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	08/26/2021
Fuel Batch Calibration Effective Date	08/26/2021	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17894
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	373-B	Fuel Calibration Number	49
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	01/30/2020
Fuel Batch Calibration Effective Date	01/30/2020	Fuel Batch Calibration Ineffective Date	12/31/2100
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.751
Fuel Ethanol Volume Percent (%)	9.5	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17945
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.829	Weight Fraction CO2	--
Fuel Batch ID	373-B	Fuel Calibration Number	88
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	06/25/2024
Fuel Batch Calibration Effective Date	06/25/2024	Fuel Batch Calibration Ineffective Date	12/31/2100

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.752
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17872
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.828	Weight Fraction CO2	--

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
-------------------	--------------	-------------------------------------	--------------

Consolidated List of Standards

Exhaust Standards

Cert Region	Federal LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	Cert/In-Use Code	Both
Vehicle Class		Standard Level	Federal Tier 3 Bin 50
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	--	--	--	--	--	--	--	1.7
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	METHANE	--	--	--	--	--	--	--	0.030
150,000 miles	N2O	--	--	--	--	--	--	--	0.010
150,000 miles	NMOG	--	--	1.1	--	--	--	--	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	--	999.999
150,000 miles	OPT-CREE	--	--	--	--	--	--	0	999.999
150,000 miles	PM	--	--	--	--	--	--	--	0.003

Cert Region	California + CAA Section 177 states LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	Cert/In-Use Code	Both
Vehicle Class		Standard Level	California LEV-III ULEV50
Fuel	Gasoline	Test Procedure	HWFE

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	--	1.03	--	--	--	--	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	--	999.999

Certification Summary Information Report

Test Group		TFMXT03.51F1			Evaporative/Refueling Family			TFMXR0295LDG		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III ULEV50		
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	--	--	--	--	--	--	--	1.7	
150,000 miles	CO-COMP	--	--	--	--	--	--	--	4.2	
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004	
150,000 miles	NMOG	--	--	1.1	--	--	--	--	999.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050	
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	--	0.050	
150,000 miles	NOX	--	--	--	--	--	--	--	999.999	
150,000 miles	PM	--	--	--	--	--	--	--	0.003	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III ULEV50		
Fuel		Gasoline			Test Procedure			US06		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	PM	--	--	--	--	--	--	--	0.006	

Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 50		
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	--	--	--	--	--	--	--	12.5	
120,000 miles	HC-NM	--	--	--	--	--	--	--	0.4	

Certification Summary Information Report

Test Group		TFMXT03.51F1			Evaporative/Refueling Family			TFMXR0295LDG		
Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 50		
Fuel		Gasoline			Test Procedure			US06		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	PM	--	--	--	--	--	--	--	0.006	

Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 50		
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	999.999	
150,000 miles	NMOG	--	--	1.03	--	--	--	--	999.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050	
150,000 miles	NOX	--	--	--	--	--	--	--	999.999	
150,000 miles	OPT-CREE	--	--	--	--	--	--	0	999.999	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-III ULEV50		
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	--	--	--	--	--	--	--	12.5	

Evaporative/Refueling Standards

Evaporative/Refueling Family		TFMXR0295LDG			Cert Region			California + CAA Section 177 states		
Cert/In-Use Code		Both			Standard Level			California LEV-III Zero Evap (Option 2)		
Test Procedure		2-day evap								
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF					
Gasoline	150,000 miles	OMHCE	--	0.500	0.0028					

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG		
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	California + CAA Section 177 states		
Cert/In-Use Code	Both	Standard Level	California LEV-III Zero Evap (Option 2)		
Test Procedure	Federal Fuel Running Loss				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	OMHCE	--	0.05	0
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	Federal		
Cert/In-Use Code	Both	Standard Level	Federal Tier 3 Evap		
Test Procedure	Federal fuel refueling test (ORVR)				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.003
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	Federal		
Cert/In-Use Code	Both	Standard Level	Federal Tier 3 Evap		
Test Procedure	2-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0028
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	Federal		
Cert/In-Use Code	Both	Standard Level	Federal Tier 3 Evap		
Test Procedure	Federal fuel 3-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0.0028
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	California + CAA Section 177 states		
Cert/In-Use Code	Both	Standard Level	California LEV-III Zero Evap (Option 2)		
Test Procedure	Federal fuel refueling test (ORVR)				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	OMHCE	--	0.20	0.003

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG		
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	California + CAA Section 177 states California LEV-III Zero Evap (Option 2)		
Cert/In-Use Code	Both	Standard Level			
Test Procedure	Federal fuel 3-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	OMHCE	--	0.500	0.0028
Evaporative/Refueling Family	TFMXR0295LDG	Cert Region	Federal		
Cert/In-Use Code	Both	Standard Level	Federal Tier 3 Evap		
Test Procedure	Federal Fuel Running Loss				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
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	AS-VOLT	Average System Voltage
CO	Carbon Monoxide	CO2 BAG 1	Bag 1 Carbon Dioxide
CO2	Carbon dioxide	CO2 BAG 2	Bag 2 Carbon Dioxide
CREE	Carbon-Related Exhaust Emissions	CO2 BAG 3	Bag 3 Carbon Dioxide
OPT-CREE	Optional Carbon-Related Exhaust Emissions	CO2 BAG 4	Bag 4 Carbon Dioxide
NOX	Nitrogen Oxide	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
PM	Particulate Matter	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
PM-COMP	SFTP Composite Particulate Matter	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM	Non-methane Hydrocarbon	DT-ASCR	Drive Trace Absolute Speed Change Rating
OMHCE	Organic material Hydrocarbon Equivalent	DT-EER	Drive Trace Energy Economy Rating
OMNMHCE	Organic material non-methane HC equivalent	COMB-CREE	Combined Carbon-Related Exhaust Emissions
NMOG	Non-methane organic gases	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
HCHO	Formaldehyde	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
H3C2HO	Acetaldehyde	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	LEAK-DIA	Effective Leak Diameter (inches)
CO-COMP	SFTP Composite Carbon Monoxide	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
ETHANOL	C2H5OH - Ethanol	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
FE BAG 1	Bag 1 Fuel Economy	KW-HRS	Integrated DC KW-HRS
FE BAG 2	Bag 2 Fuel Economy	CH4 BAG 1	Bag 1 Methane
FE BAG 3	Bag 3 Fuel Economy	CH4 BAG 2	Bag 2 Methane
FE BAG 4	Bag 4 Fuel Economy	CH4 BAG 3	Bag 3 Methane
MFR FE	Manufacturer Fuel Economy	CH4 BAG 4	Bag 4 Methane
HC	Hydrocarbon for Running Loss and ORVR	CO BAG 1	Bag 1 Carbon Monoxide
METHANE	CH4 - Methane	CO BAG 2	Bag 2 Carbon Monoxide
METHANOL	CH3OH - Methanol	CO BAG 3	Bag 3 Carbon Monoxide
N2O	Nitrous Oxide	CO BAG 4	Bag 4 Carbon Monoxide
SPITBACK	Spitback Hydrocarbon in grams	NMOG BAG 1	Bag 1 Non-methane organic gases
AMP-HRS	Integrated Amp-hours	NMOG BAG 2	Bag 2 Non-methane organic gases
START-SOC	System Start State of Charge Watt-hours	NMOG BAG 3	Bag 3 Non-methane organic gases
END-SOC	System End State of Charge Watt-hours	NMOG BAG 4	Bag 4 Non-methane organic gases
ACT-DISTANCE	Actual Distance Driven (miles)		
Certification Region			

Certification Summary Information Report

Test Group	TFMXT03.51F1	Evaporative/Refueling Family		TFMXR0295LDG
CA	California + CAA Section 177 states	FA	Federal	
Exhaust Emission Standard Level				
B1	Federal Tier 2 Bin 1	T3B160	Federal Tier 3 Bin 160	
B2	Federal Tier 2 Bin 2	T3B125	Federal Tier 3 Bin 125	
B3	Federal Tier 2 Bin 3	T3B110	Federal Tier 3 Transitional Bin 110	
B4	Federal Tier 2 Bin 4	T3B85	Federal Tier 3 Transitional Bin 85	
B5	Federal Tier 2 Bin 5	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover	
B6	Federal Tier 2 Bin 6	T3B70	Federal Tier 3 Bin 70	
B7	Federal Tier 2 Bin 7	T3B50	Federal Tier 3 Bin 50	
B8	Federal Tier 2 Bin 8	T3B30	Federal Tier 3 Bin 30	
B9	Federal Tier 2 Bin 9	T3B20	Federal Tier 3 Bin 20	
B10	Federal Tier 2 Bin 10	T3B0	Federal Tier 3 Bin 0	
B11	Federal Tier 2 Bin 11	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
L2	California LEV-II LEV	HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
L2OP	California LEV-II LEV Optional	HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
U2	California LEV-II ULEV	HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
S2	California LEV-II SULEV	HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
ZEV	California ZEV	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
OT	Other	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
T1	Federal Tier 1	HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
PZEV	California PZEV	HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
L2LEV160	California LEV-II LEV160	HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
L2ULEV125	California LEV-II ULEV125	HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
L2SULEV30	California LEV-II SULEV30	HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2LEV395	California LEV-II LEV395	L4SULEV100	California LEV-IV SULEV100	
L2ULEV340	California LEV-II ULEV340	L4SULEV125	California LEV-IV SULEV125	
L2LEV630	California LEV-II LEV630	L4SULEV15	California LEV-IV SULEV15	
L2ULEV570	California LEV-II ULEV570	L4SULEV150	California LEV-IV SULEV150	
L3LEV160	California LEV-III LEV160	L4SULEV170	California LEV-IV SULEV170	
L3ULEV125	California LEV-III ULEV125	L4SULEV175	California LEV-IV SULEV175	
L3ULEV70	California LEV-III ULEV70	L4SULEV20	California LEV-IV SULEV20	
L3ULEV50	California LEV-III ULEV50	L4SULEV200	California LEV-IV SULEV200	
L3SULEV30	California LEV-III SULEV30	L4SULEV230	California LEV-IV SULEV230	
L3SULEV20	California LEV-III SULEV20	L4SULEV25	California LEV-IV SULEV25	
L3LEV395	California LEV-III LEV395	L4SULEV30	California LEV-IV SULEV30	
L3ULEV340	California LEV-III ULEV340	L4SULEV75	California LEV-IV SULEV75	
L3ULEV250	California LEV-III ULEV250	L4SULEV85	California LEV-IV SULEV85	
L3ULEV200	California LEV-III ULEV200	L4ULEV125	California LEV-IV ULEV125	

Certification Summary Information Report

Test Group		TFMXT03.51F1	Evaporative/Refueling Family	TFMXR0295LDG
L3SULEV170	California LEV-III SULEV170		L4ULEV200	California LEV-IV ULEV200
L3SULEV150	California LEV-III SULEV150		L4ULEV250	California LEV-IV ULEV250
L3LEV630	California LEV-III LEV630		L4ULEV270	California LEV-IV ULEV270
L3ULEV570	California LEV-III ULEV570		L4ULEV40	California LEV-IV ULEV40
L3ULEV400	California LEV-III ULEV400		L4ULEV400	California LEV-IV ULEV400
L3ULEV270	California LEV-III ULEV270		L4ULEV50	California LEV-IV ULEV50
L3SULEV230	California LEV-III SULEV230		L4ULEV60	California LEV-IV ULEV60
L3SULEV200	California LEV-III SULEV200		L4ULEV70	California LEV-IV ULEV70
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	
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	