

Certification Summary Information Report

Manufacturer	Kia Corporation	Manufacturer Code	KMX
Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Certificate Number	VKMXT03.5KU3-006	CARB Executive Order #	--
Certificate Issue Date	03/04/2026	Certificate Revision Date	--
Certificate Effective Date	03/04/2026	Conditional Certificate	No
CSI Revision #	--	CSI Submission/Revision Date	01/22/2026 11:11:28 PM
Model Year	2027		

Test Group Information			
CSI Type	Update for Correction	Running Change Reference Number	--
GHG Exempt Status	Not Exempt		
Drive Sources and Fuel(s)			
Drive Source #1:	Combustion Engine		
	Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
	Gasoline	Spark Ignition direct & ported injection	No

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	LDT3
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	VKMXGPGNNKU3	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	05/01/2026	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	No		
OBD Compliance Type	CARB	OBD Demonstration Vehicle Test Group	VHYXV03.5HT5
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	The fuel for Litmus test is E10. Litmus result(Value/Threshold): City(17.8/17.3) HWY(23.2/24.6)-3MODE FTP(TKMX10088085),US06(TKMX10088043),SC03(TKMX10088044),Cold(TKMX10088045),HWY(TKMX10088042)		
Mfr Exhaust / Evap Standards Comments	--		

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	01/13/2026 12:27:36 AM				
Integrated ORVR?	Yes	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	plastic				
Fill Pipe Seal Type	Liquid seal						
Air Intake System Vapor Storage Device?	No	Air Intake System Vapor Storage Device Description	--				
Fuel System Vapor Storage Canister?	Yes	Other Vapor Storage	--				
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	155	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	Yes						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
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				
VKMXR0155KUG-KA4	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
Kia Corporation	1 - KIA	621 - Carnival	California + CAA Section 177 states	2-Wheel Drive, Front	Semi-Automatic	8	Yes
Kia Corporation	1 - KIA	621 - Carnival	Federal	2-Wheel Drive, Front	Semi-Automatic	8	Yes
Engine Description							
Hybrid Type	--	Hybrid Description	--				
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	0W20				
Number of Cylinders/Rotors	6	Mechanically Variable Compression Ratio Indicator	N				

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG	
After Treatment Device(s) (ATD)				
ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic	Monolith
3	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic	Monolith
Mfr After Treatment Device (ATD) Comments				--
Direct Ozone Reduction (DOR) Device				Not Equipped
Mfr Emission Control Device Comments				--
Engine Configuration Number 1				
Engine Displacement (liters)	3.5	Engine Rated Horsepower	287	
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	--	
Air Aspiration Drive Method(s)	Mechanical			
Cylinder Deactivation	No			
Cylinder Deactivation Description	--			
Variable Valve Timing	Yes			
Variable Valve Timing System Description	Fixed3(More than two or continuous)			
Variable Valve Lift?	No			
Variable Valve Lift System Description	--			
Number of Knock Sensors	2	Number of Air/Fuel Sensors	4	
Air/Fuel Sensor # 1 Type	Other	Air/Fuel Sensor # 1 Description	WR-HO2S	
Air/Fuel Sensor # 2 Type	Other	Air/Fuel Sensor # 2 Description	WR-HO2S	
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	--			

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family			VKMXR0155KUG		
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	TKMX10088085	TKMX10088043	TKMX10088044	TKMX10088045	TKMX10088042	21.1	228.2	29.7	286.1	--	
SFTP LEV-III Official Test Numbers											
Test Group Fuel	FTP		US06			SC03					
Gasoline	TKMX10088085		TKMX10088043			TKMX10088044					

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG						
Emission Data Vehicle Information									
Vehicle ID / Configuration	KA4-U6L5GA204F / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	TKMXT03.5KU3	Original Evaporative/Refueling Family	TKMXR0155KUG						
Original Test Vehicle Model Year	2026								
Vehicle Model									
Represented Test Vehicle Make	KIA	Represented Test Vehicle Model	CARNIVAL						
Leak Family Details									
Leak Family Identifier	KA4	Leak Family Name	TKMXR0155KUG-KA4						
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> </tbody> </table>			Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
Hybrid Indicator	No								
Multiple Fuel Storage	--	Multiple Fuel Combustion	--						
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--						
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--						
Off-board charge Capable Indicator	--								
Odometer Correction -- Initial	15	Odometer Correction Factor	0.9982						
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles								
Odometer Correction Units	Miles								
Engine Code	G6DT-AC	Rated Horsepower	287						
Displacement (liters)	3.5								
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--						
Charge Air Cooler Type	--	Drive Mode While Testing	2-Wheel Drive, Front						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	4810	Equivalent Test Weight (pounds)	5000						
GVWR (lbs)	6283	N/V Ratio	27						
Axle Ratio	3.51								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creeper Gear	No						

Certification Summary Information Report

Test Group		VKMXT03.5KU3			Evaporative/Refueling Family			VKMXR0155KUG
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	36.507	0.13028	0.027417	11.04	0.16997	0.026336	14.9	
Cold CO	40.158	0.14331	0.030159	13	0.05763	0.029851	N/A	
US06	36.507	0.13028	0.027417	11.04	0.16997	0.026336	N/A	
Emission Control Device Comments	--							
Manufacturer Test Vehicle Comments	KA4 PE 3.5 8AT 19" EDV							

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088045	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/08/2024	Fuel	Gasoline
Fuel Batch ID	22D-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4042	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	478.7513	--
FE BAG 1 (Bag 1 Fuel Economy)	17.9777	17.9777
CO2 BAG 2 (Bag 2 Carbon Dioxide)	448.2686	--
FE BAG 2 (Bag 2 Fuel Economy)	19.3101	19.3101
CO2 BAG 3 (Bag 3 Carbon Dioxide)	375.6724	--
FE BAG 3 (Bag 3 Fuel Economy)	22.9969	22.9969
CO (Carbon Monoxide)	0.4298	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.81	--
DT-EER (Drive Trace Energy Economy Rating)	-0.29	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.55	--
MFR FE (Manufacturer Fuel Economy)	19.8643	19.8643
NOX (Nitrogen Oxide)	0.002	--
HC-NM (Non-methane Hydrocarbon)	0.0288	--
HC-TOTAL (Total Hydrocarbon)	0.0333	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	434.685	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E10-20F This vehicle followed the manual climate control procedure in cold FTP mode.

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	50,000 miles	Federal Tier 3 Bin 30	CO	0.43	--	--	--	0	--	0.4	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.03	--	--	--	0.0039	--	0	0.5	Pass
CA	50,000 miles	California LEV-IV SULEV30	CO	0.43	--	--	--	0	--	0.4	12.5	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088046	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/13/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4115	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.2409	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.88	--
DT-EER (Drive Trace Energy Economy Rating)	-0.15	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.76	--
MFR FE (Manufacturer Fuel Economy)	22.0199	22.0199
NOX (Nitrogen Oxide)	0.0006	--
HC-NM (Non-methane Hydrocarbon)	0.0125	--
NMOG (Non-methane organic gases)	0.0137	--
HC-TOTAL (Total Hydrocarbon)	0.0149	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	391.8942	--

Manufacturer Test Comments

26MY KA4 PE 3.5 19"(ETW:5000) E10-50F

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	4,000 miles	California LEV-IV SULEV30	CO	0.24	--	--	--	--	--	0.2	1.0	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG	0.0137	--	1.1	--	--	--	0.014	99.999	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0143	--	--	--	--	--	0.014	0.060	Pass
CA	4,000 miles	California LEV-IV SULEV30	NOX	0.0006	--	--	--	--	--	0.001	99.999	Pass

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088047	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	09/11/2024	Fuel	Gasoline
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4246	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	402.3604	--
FE BAG 1 (Bag 1 Fuel Economy)	22.135	22.135
CO2 BAG 2 (Bag 2 Carbon Dioxide)	399.5817	--
FE BAG 2 (Bag 2 Fuel Economy)	22.2809	22.2809
CO2 BAG 3 (Bag 3 Carbon Dioxide)	356.5287	--
FE BAG 3 (Bag 3 Fuel Economy)	24.9669	24.9669
METHANE (CH4 - Methane)	0.0029	--
CO (Carbon Monoxide)	0.2287	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.47	--
DT-EER (Drive Trace Energy Economy Rating)	-0.71	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.13	--
MFR FE (Manufacturer Fuel Economy)	22.9626	22.9626
NOX (Nitrogen Oxide)	0.0023	--
N2O (Nitrous Oxide)	0.0006	--
HC-NM (Non-methane Hydrocarbon)	0.0058	--
NMOG (Non-methane organic gases)	0.006	--
HC-TOTAL (Total Hydrocarbon)	0.0087	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	388.3899	388

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	388.3519	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E0-FTP

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 30	CREE	388	--	--	--	0.213927	--	388	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0029	--	--	--	0.0036	--	0.006	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0006	--	--	--	0.0003	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.23	--	--	--	0	--	0.2	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.006	--	1.1	--	0.0054	--	0.011	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0083	--	--	--	--	--	0.014	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0023	--	--	--	0.0007	--	0.003	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.23	--	--	--	0	--	0.2	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.006	--	1.1	--	0.0054	--	0.011	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0083	--	--	--	--	--	0.014	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0023	--	--	--	0.0007	--	0.003	99.999	Pass

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

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088085	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	08/14/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4154	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	395.0341	--
FE BAG 1 (Bag 1 Fuel Economy)	21.8441	21.8441
CO2 BAG 2 (Bag 2 Carbon Dioxide)	398.6987	--
FE BAG 2 (Bag 2 Fuel Economy)	21.6487	21.6487
CO2 BAG 3 (Bag 3 Carbon Dioxide)	344.2863	--
FE BAG 3 (Bag 3 Fuel Economy)	25.1037	25.1037
METHANE (CH4 - Methane)	0.003	--
CO (Carbon Monoxide)	0.1445	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.6	--
DT-EER (Drive Trace Energy Economy Rating)	-0.46	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.64	--
MFR FE (Manufacturer Fuel Economy)	22.5469	22.5469
NOX (Nitrogen Oxide)	0.0012	--
HC-NM (Non-methane Hydrocarbon)	0.0067	--
NMOG (Non-methane organic gases)	0.0074	--
PM (Particulate Matter)	0.0004	--
HC-TOTAL (Total Hydrocarbon)	0.0098	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	383.2501	999

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	383.0911	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E10-FTP

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 30	CREE	999	--	--	--	0.213927	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.003	--	--	--	0.0036	--	0.007	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.14	--	--	--	0	--	0.1	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.31	--	--	--	0	--	0.3	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0074	--	1.1	--	0.0054	--	0.013	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0086	--	--	--	--	--	0.015	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0142	--	--	--	0	--	0.014	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0012	--	--	--	0.0007	--	0.002	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0004	--	--	--	0	--	0	0.003	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.14	--	--	--	0	--	0.1	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0074	--	1.1	--	0.0054	--	0.013	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0086	--	--	--	--	--	0.015	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0012	--	--	--	0.0007	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0004	--	--	--	0	--	0	0.003	Pass

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

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088227	Test Procedure	49 - Quick-Driveway (QD)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	10/15/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4482	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0	--
DT-EER (Drive Trace Energy Economy Rating)	-0.7	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.1	--
NOX (Nitrogen Oxide)	0.0026	--
HC-NM (Non-methane Hydrocarbon)	0.0106	--
NMOG (Non-methane organic gases)	0.0117	--

Manufacturer Test Comments

26MY KA4 PE 3.5 19"(ETW:5000) E10-Quick Drive-Away, FTP for Quick Drive-Away NO.is TKMX10088225

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0117	--	1.1	--	0.006	--	0.018	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0143	--	--	--	--	--	0.027	0.042	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0026	--	--	--	0.0069	--	0.01	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088042	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	08/14/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4165	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.0085	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	2.3	--
DT-EER (Drive Trace Energy Economy Rating)	0.16	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	3.04	--
MFR FE (Manufacturer Fuel Economy)	36.6119	36.6119
NOX (Nitrogen Oxide)	0.001	--
HC-NM (Non-methane Hydrocarbon)	0.0004	--
NMOG (Non-methane organic gases)	0.0004	--
HC-TOTAL (Total Hydrocarbon)	0.0007	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	236.0187	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	236.0127	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E10-HWY

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 30	CREE	999	--	--	--	0.213927	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0004	--	1.03	--	0.0054	--	0.006	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0014	--	--	--	--	--	0.008	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.001	--	--	--	0.0007	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0004	--	1.03	--	0.0054	--	0.006	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0014	--	--	--	--	--	0.008	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.001	--	--	--	0.0007	--	0.002	99.999	Pass

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

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088048	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	09/11/2024	Fuel	Gasoline
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4267	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.0057	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	2.93	--
DT-EER (Drive Trace Energy Economy Rating)	-0.55	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	3.63	--
MFR FE (Manufacturer Fuel Economy)	37.1578	37.1578
NOX (Nitrogen Oxide)	0.0045	--
HC-NM (Non-methane Hydrocarbon)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	240.0157	240

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	239.9869	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E0-HWY

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 30	CREE	240	--	--	--	0.213927	--	240	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0	--	1.03	--	0.0054	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0045	--	--	--	--	--	0.011	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0045	--	--	--	0.0007	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0	--	1.03	--	0.0054	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0045	--	--	--	--	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0045	--	--	--	0.0007	--	0.005	99.999	Pass

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

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088043	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	08/14/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4186	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	627.9995	--
FE BAG 1 (Bag 1 Fuel Economy)	13.7498	13.7498
CO2 BAG 2 (Bag 2 Carbon Dioxide)	351.9952	--
FE BAG 2 (Bag 2 Fuel Economy)	24.5025	24.5025
CO (Carbon Monoxide)	0.3773	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.87	--
DT-EER (Drive Trace Energy Economy Rating)	-1.09	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.41	--
MFR FE (Manufacturer Fuel Economy)	20.8915	20.8915
NOX (Nitrogen Oxide)	0.0067	--
HC-NM (Non-methane Hydrocarbon)	0.0056	--
NMOG (Non-methane organic gases)	0.0058	--
PM (Particulate Matter)	0.0033	--
HC-TOTAL (Total Hydrocarbon)	0.0069	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	413.3129	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E10-US06

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.3773	--	--	--	0	--	0.377	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0058	--	1.03	--	0.0054	--	0.011	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0125	--	--	--	--	--	0.019	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0067	--	--	--	0.0007	--	0.007	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0033	--	--	--	0	--	0.003	0.006	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.38	--	--	--	0	--	0.4	9.6	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0058	--	1.03	--	0.0054	--	0.011	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0125	--	--	--	--	--	0.019	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0067	--	--	--	0.0007	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0033	--	--	--	0	--	0.003	0.006	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	TKMX10088044	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	08/12/2024	Fuel	Gasoline
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4102	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.422	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.16	--
DT-EER (Drive Trace Energy Economy Rating)	-0.27	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.19	--
MFR FE (Manufacturer Fuel Economy)	18.0521	18.0521
NOX (Nitrogen Oxide)	0.0022	--
HC-NM (Non-methane Hydrocarbon)	0.002	--
NMOG (Non-methane organic gases)	0.002	--
HC-TOTAL (Total Hydrocarbon)	0.005	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	478.1787	--

Manufacturer Test Comments 26MY KA4 PE 3.5 19"(ETW:5000) E10-SC03

Certification Summary Information Report

Test Group		VKMXT03.5KU3				Evaporative/Refueling Family				VKMXR0155KUG		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.422	--	--	--	0	--	0.422	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.002	--	1.03	--	0.0054	--	0.007	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0042	--	--	--	--	--	0.01	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0022	--	--	--	0.0007	--	0.003	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.42	--	--	--	0	--	0.4	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.002	--	1.03	--	0.0054	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0042	--	--	--	--	--	0.01	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0022	--	--	--	0.0007	--	0.003	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG						
Emission Data Vehicle Information									
Vehicle ID / Configuration	KA4U2L5GA069F / 0	Manufacturer Vehicle Configuration Number	0						
Original Test Group Name	NKMXT03.5KU5	Original Evaporative/Refueling Family	NKMXR0155KUG						
Original Test Vehicle Model Year	2022								
Vehicle Model									
Represented Test Vehicle Make	KIA	Represented Test Vehicle Model	CARNIVAL						
Leak Family Details									
Leak Family Identifier	KA4	Leak Family Name	NKMXR0155KUG-KA4						
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> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel							
1	Combustion Engine	Gasoline							
Hybrid Indicator	No								
Multiple Fuel Storage	--	Multiple Fuel Combustion	--						
Fuel Cell Indicator	--	Rechargeable Energy Storage System Indicator	--						
Rechargeable Energy Storage System	--	Rechargeable Energy Storage System, if 'Other'	--						
Off-board charge Capable Indicator	--								
Odometer Correction -- Initial	0	Odometer Correction Factor	1.0003						
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor								
Odometer Correction Units	Miles								
Engine Code	G6DT-AC	Rated Horsepower	290						
Displacement (liters)	3.5								
Air Aspiration Method	Naturally Aspirated	Air Aspiration Method, if 'Other'							
Number of Air Aspiration Devices	--	Air Aspiration Device Configuration	--						
Charge Air Cooler Type	--	Drive Mode While Testing	2-Wheel Drive, Front						
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)						
Curb Weight (lbs)	4535	Equivalent Test Weight (pounds)	4750						
GVWR (lbs)	6041	N/V Ratio	27						
Axle Ratio	3.51								
Transmission Type	Semi-Automatic	# of Transmission Gears	8						
Transmission Lockup	Yes	Creeper Gear	No						
Dynamometer Coefficients:									
Target Coefficients			Set Coefficients						
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)						
City/Highway/Evap	26.773	0.39493	0.027419						
			A (lbf)						
			B (lbf/mph)						
			C (lbf/mph**2)						
			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients						
			15.3						
Emission Control Device Comments	--								

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Manufacturer Test Vehicle Comments KA4 3.5 8AT 19" EVAP

Test #	NKMX10066867	Test Procedure	38 - CA fuel 3-day evap.
Exhaust Test # for this Evap Test	NKMX10066851	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	07/24/2020	Fuel	Gasoline
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4225	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.2745	--

Manufacturer Test Comments 22MY KA4 3.5 19"(ETW:4750)-3DBL

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	0.2745	0	0.274	0.5	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2745	0	0.274	0.5	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	NKMX91004661	Test Procedure	27 - California fuel 2-day evap
Exhaust Test # for this Evap Test	NKMX91004658	Test Fuel Type	46 - CARB LEV3 E10 Regular
Test Date	11/04/2020	Fuel	Gasoline
Fuel Batch ID	26757	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4363	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.215781	--

Manufacturer Test Comments Hot_Soak_HC_(g) = 0.024241, Diurnal (gHC) = 0.191540

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	0.2158	0	0.216	0.5	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2158	0	0.216	0.5	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Test #	NKMX10066866	Test Procedure	37 - California Fuel Running Loss
Exhaust Test # for this Evap Test	NKMX10066851	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	07/24/2020	Fuel	Gasoline
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4225	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0001	--

Manufacturer Test Comments 22MY KA4 3.5 19"(ETW:4750) CA E10-RL

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	0.05	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	NKMX10066868	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	NKMX10066859	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/21/2020	Fuel	Gasoline
Fuel Batch ID	19T-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4157	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0011	--

Manufacturer Test Comments

22MY KA4 3.5 19"(ETW:4750) CA E10-ORVR

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	0.001	0	0	0.2	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.001	0	0	0.2	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Test #	NKMX10066870	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	07/09/2020	Fuel	Gasoline
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4112	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.0061	--

Manufacturer Test Comments 22MY KA4 3.5 19"(ETW:4750) CA E10-Bleed

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL	0.0061	0	0.006	0.02	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL	0.0061	0	0.006	0.02	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Test #	NKMX10066871	Test Procedure	68 - Leak Test - Port Near Fuel Pipe
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/28/2020	Fuel	Gasoline
Fuel Batch ID	19T-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4253	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
LEAK-DIA (Effective Leak Diameter (inches))	0	--

Manufacturer Test Comments 22MY KA4 3.5 19"(ETW:4750) CA E10-Leak Test Port Near Fuel Pipe-Correct Odometer

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	LEAK-DIA	0	0	0	0.02	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	LEAK-DIA	0	0	0	0.02	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Test #	NKMX10066872	Test Procedure	67 - Leak Test - Port Near Canister
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	07/28/2020	Fuel	Gasoline
Fuel Batch ID	19T-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4253	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
LEAK-DIA (Effective Leak Diameter (inches))	0	--

Manufacturer Test Comments 22MY KA4 3.5 19"(ETW:4750) CA E10-Leak Test Port Near Canister-CORRECT ODORMETER

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	LEAK-DIA	0	0	0	0.02	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	LEAK-DIA	0	0	0	0.02	Pass

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Fuel Properties			
Fuel Batch ID	24T-01	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/29/2022
Fuel Batch Calibration Effective Date	06/25/2024	Fuel Batch Calibration Ineffective Date	06/25/2027
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 (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17799
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.824	Weight Fraction CO2	--
Fuel Batch ID	26757	Fuel Calibration Number	1
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	07/27/2017
Fuel Batch Calibration Effective Date	07/27/2017	Fuel Batch Calibration Ineffective Date	07/27/2032
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17958
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
Fuel Batch ID	22D-01	Fuel Calibration Number	1
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/29/2021
Fuel Batch Calibration Effective Date	05/10/2022	Fuel Batch Calibration Ineffective Date	05/10/2025
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17925
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	19E-03	Fuel Calibration Number	1
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	08/08/2019
Fuel Batch Calibration Effective Date	10/29/2019	Fuel Batch Calibration Ineffective Date	10/29/2022
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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)	17917
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	06/03/2021
Fuel Batch Calibration Effective Date	02/14/2022	Fuel Batch Calibration Ineffective Date	02/14/2025
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 (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18435
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	Weight Fraction CO2	--
Fuel Batch ID	19T-03	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	08/22/2019
Fuel Batch Calibration Effective Date	04/13/2020	Fuel Batch Calibration Ineffective Date	04/13/2023
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17949
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	--

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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Consolidated List of Standards

Exhaust Standards

Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	Federal Tier 3 Bin 30
Fuel	Gasoline	Test Procedure	Federal fuel 2-day exhaust (w/can load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	--	--	--	--	--	0.213927	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0036	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0003	0.010
150,000 miles	CO	--	--	--	--	--	--	0	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0054	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	California LEV-IV SULEV30
Fuel	Gasoline	Test Procedure	Federal fuel 2-day exhaust (w/can load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	1.0
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0054	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	California LEV-IV SULEV30
Fuel	Gasoline	Test Procedure	US06

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	9.6
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999
150,000 miles	PM	--	--	--	--	--	--	0	0.006

Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	Federal Tier 3 Bin 30
Fuel	Gasoline	Test Procedure	SC03

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	California LEV-IV SULEV30
Fuel	Gasoline	Test Procedure	Quick-Driveway (QD)

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	--	--	--	0.006	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.042
150,000 miles	NOX	--	--	--	--	--	--	0.0069	99.999

Certification Summary Information Report

Test Group		VKMXT03.5KU3			Evaporative/Refueling Family			VKMXR0155KUG		
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30		
Fuel		Gasoline			Test Procedure			US06		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CO	--	--	--	--	--	--	0	99.999	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999	
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999	
150,000 miles	PM	--	--	--	--	--	--	0	0.006	

Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			Federal Tier 3 Bin 30		
Fuel		Gasoline			Test Procedure			Cold CO		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
50,000 miles	CO	--	--	--	--	--	--	0	12.5	
120,000 miles	HC-NM	--	--	--	--	--	--	0.0039	0.5	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-IV SULEV30		
Fuel		Gasoline			Test Procedure			Fed. fuel 50 F exh.		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
4,000 miles	CO	--	--	--	--	--	--	--	1.0	
4,000 miles	HCHO	--	--	--	--	--	--	--	0.008	
4,000 miles	NMOG	--	--	1.1	--	--	--	--	99.999	
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.060	
4,000 miles	NOX	--	--	--	--	--	--	--	99.999	

Certification Summary Information Report

Test Group		VKMXT03.5KU3			Evaporative/Refueling Family			VKMXR0155KUG		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-IV SULEV30		
Fuel		Gasoline			Test Procedure			HWFE		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030	
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-IV SULEV30		
Fuel		Gasoline			Test Procedure			SC03		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CO	--	--	--	--	--	--	0	1.0	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030	
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)			Standard Level			California LEV-IV SULEV30		
Fuel		Gasoline			Test Procedure			Cold CO		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
50,000 miles	CO	--	--	--	--	--	--	0	12.5	

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	Standard Level	Federal Tier 3 Bin 30
Fuel	Gasoline	Test Procedure	HWFE

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	--	--	--	--	--	0.213927	999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0054	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0007	99.999

Evaporative/Refueling Standards

Evaporative/Refueling Family	VKMXR0155KUG	Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)
Cert/In-Use Code	Cert	Standard Level	
Test Procedure	Leak Test - Port Near Canister		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0

Evaporative/Refueling Family	VKMXR0155KUG	Cert Region	Federal
Cert/In-Use Code	Cert	Standard Level	Federal Tier 3 Evap
Test Procedure	California Fuel Running Loss		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0

Evaporative/Refueling Family	VKMXR0155KUG	Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)
Cert/In-Use Code	Cert	Standard Level	
Test Procedure	CA fuel 3-day evap.		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0

Certification Summary Information Report

Test Group	VKMXT03.5KU3		Evaporative/Refueling Family	VKMXR0155KUG	
Evaporative/Refueling Family	VKMXR0155KUG		Cert Region	Federal	
Cert/In-Use Code	Cert		Standard Level	Federal Tier 3 Evap	
Test Procedure	Leak Test - Port Near Canister				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	LEAK-DIA	--	0.020	0
Evaporative/Refueling Family	VKMXR0155KUG		Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
Test Procedure	Evap Canister Bleed Test				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL	--	0.020	0
Evaporative/Refueling Family	VKMXR0155KUG		Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
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	VKMXR0155KUG		Cert Region	Federal	
Cert/In-Use Code	Cert		Standard Level	Federal Tier 3 Evap	
Test Procedure	Evap Canister Bleed Test				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL	--	0.020	0
Evaporative/Refueling Family	VKMXR0155KUG		Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)	
Cert/In-Use Code	Cert		Standard Level		
Test Procedure	California Fuel Running Loss				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0

Certification Summary Information Report

Test Group		VKMXT03.5KU3		Evaporative/Refueling Family		VKMXR0155KUG					
Evaporative/Refueling Family		VKMXR0155KUG		Cert Region		Federal					
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap					
Test Procedure		Leak Test - Port Near Fuel Pipe									
Fuel		Useful Life		Emission Name		Rounded Result		Std		Add DF	
Gasoline		150,000 miles		LEAK-DIA		--		0.020		0	
Evaporative/Refueling Family		VKMXR0155KUG		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		VKMXR0155KUG		Cert Region		California + CAA Section 177 states					
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)					
Test Procedure		Leak Test - Port Near Fuel Pipe									
Fuel		Useful Life		Emission Name		Rounded Result		Std		Add DF	
Gasoline		150,000 miles		LEAK-DIA		--		0.02		0	
Evaporative/Refueling Family		VKMXR0155KUG		Cert Region		Federal					
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap					
Test Procedure		CA fuel 3-day evap.									
Fuel		Useful Life		Emission Name		Rounded Result		Std		Add DF	
Gasoline		150,000 miles		HC-TOTAL-EQUIV		--		0.500		0	
Evaporative/Refueling Family		VKMXR0155KUG		Cert Region		California + CAA Section 177 states					
Cert/In-Use Code		Cert		Standard Level		California LEV-IV Zero Evap (Option 2)					
Test Procedure		California fuel 2-day evap									
Fuel		Useful Life		Emission Name		Rounded Result		Std		Add DF	
Gasoline		150,000 miles		HC-TOTAL-EQUIV		--		0.500		0	

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG		
Evaporative/Refueling Family	VKMXR0155KUG	Cert Region	Federal		
Cert/In-Use Code	Cert	Standard Level	Federal Tier 3 Evap		
Test Procedure	California fuel 2-day evap				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.500	0

Certification Summary Information Report

Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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

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Test Group		VKMXT03.5KU3	Evaporative/Refueling Family		VKMXR0155KUG
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

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L2ULEV340	California LEV-II ULEV340		L4SULEV85	California LEV-IV SULEV85
L2LEV630	California LEV-II LEV630		L4ULEV125	California LEV-IV ULEV125
L2ULEV570	California LEV-II ULEV570		L4ULEV200	California LEV-IV ULEV200
L3LEV160	California LEV-III LEV160		L4ULEV250	California LEV-IV ULEV250
L3ULEV125	California LEV-III ULEV125		L4ULEV270	California LEV-IV ULEV270
L3ULEV70	California LEV-III ULEV70		L4ULEV40	California LEV-IV ULEV40
L3ULEV50	California LEV-III ULEV50		L4ULEV400	California LEV-IV ULEV400
L3SULEV30	California LEV-III SULEV30		L4ULEV50	California LEV-IV ULEV50
L3SULEV20	California LEV-III SULEV20		L4ULEV60	California LEV-IV ULEV60
L3LEV395	California LEV-III LEV395		L4ULEV70	California LEV-IV ULEV70
L3ULEV340	California LEV-III ULEV340		T4B170	Federal Tier 4 MDV Bin 170
L3ULEV250	California LEV-III ULEV250		T4B150	Federal Tier 4 MDV Bin 150
L3ULEV200	California LEV-III ULEV200		T4B125	Federal Tier 4 MDV Bin 125
L3SULEV170	California LEV-III SULEV170		T4B100	Federal Tier 4 MDV Bin 100
L3SULEV150	California LEV-III SULEV150		T4B85	Federal Tier 4 MDV Bin 85
L3LEV630	California LEV-III LEV630		T4B75	Federal Tier 4 MDV Bin 75
L3ULEV570	California LEV-III ULEV570		T4B70	Federal Tier 4 Bin 70
L3ULEV400	California LEV-III ULEV400		T4B65	Federal Tier 4 Bin 65
L3ULEV270	California LEV-III ULEV270		T4B60	Federal Tier 4 Bin 60
L3SULEV230	California LEV-III SULEV230		T4B55	Federal Tier 4 Bin 55
L3SULEV200	California LEV-III SULEV200		T4B50	Federal Tier 4 Bin 50
T3B160	Federal Tier 3 Bin 160		T4B45	Federal Tier 4 Bin 45
T3B125	Federal Tier 3 Bin 125		T4B40	Federal Tier 4 Bin 40
T3B110	Federal Tier 3 Transitional Bin 110		T4B35	Federal Tier 4 Bin 35
T3B85	Federal Tier 3 Transitional Bin 85		T4B30	Federal Tier 4 Bin 30
T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover		T4B25	Federal Tier 4 Bin 25
T3B70	Federal Tier 3 Bin 70		T4B20	Federal Tier 4 Bin 20
T3B50	Federal Tier 3 Bin 50		T4B15	Federal Tier 4 Bin 15
T3B30	Federal Tier 3 Bin 30		T4B10	Federal Tier 4 Bin 10
T3B20	Federal Tier 3 Bin 20		T4B5	Federal Tier 4 Bin 5
T3B0	Federal Tier 3 Bin 0		T4B0	Federal Tier 4 Bin 0
HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395			
Transmission Type Code				
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual	
A	Automatic	OT	Other	
AM	Automated Manual	SA	Semi-Automatic	
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code				
4	4-Wheel Drive	P	Part-time 4-Wheel Drive	

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Test Group	VKMXT03.5KU3	Evaporative/Refueling Family	VKMXR0155KUG
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