Application for Certification - Part 1

Test Group (CBI)

• **Model Year:**	2027
• **Manufacturer Name:**	Kia Corporation
• **Test Group:**	VKMXT01.6K13
• **Test Group Description:**	1.6 Liter / I4 Turbocharged GDI / Otto-cycle
• **Durability Group:**	VKMXHHGNNK13
• **Durability Group Description:**	Monolith, WU-TWC + TWC
• **Vehicle Class:**	LDT3 / LDT4
• **Applicable Standards:**	FED: Interim Tier-4 Bin30 / Tier-4 Evap CAL: LEV-IV SULEV 30 / LEV-IV Evap
• **Vehicles Tested:**	EDV-KA4U4G6HA309F/0 (Exh./Evap.) FEDV- KA4U4G6HA309F/0, KA4U4G6HA309F/1
• **Carlines Covered by Certificate**:	Carnival Hybrid
• **EPA Response Requested by:**	Feb. 27, 2026
• **For Questions, Contact**:	Stephanie Wright 734-273-1904 E-mail: swright@hatci.com

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01.00 Correspondence and Communications

Please refer to Common Section 01.00.

For questions, call Stephanie Wright (734-273-1904).

02.00 Durability Group Description

1. Durability Group Name	:	VKMXHHGNNK13
2. Combustion Cycle	:	Otto cycle / four stroke
3. Engine Type	:	Piston / water cooled
4. Fuel Used	:	Gasoline
5. Basic Fuel Metering System	:	Direct Injection
6. Catalyst Construction and location	:	See Section 02.02
7. Precious Metals in Catalyst	:	See Section 02.02
8. Precious Metal Loading for all Catalysts in the Durability Group	:	See Section 02.02
9. Range of Catalyst Grouping Statistics	:	See Section 02.02
10. Type of particulate filter	:	None
11. Battery Capacity(s)	:	5.5Ah
12. Battery Chemistry(s)	:	NCM(Nickel Cobalt Manganese, Li(NiCoMn)O2)
13. Battery Duty Cycle Usage(s)	:	20 years / 300,000km
14. Battery Manufacturer	:	Hyundai Mobis (LGES)
15. Battery Construction	:	9 modules with 8 cells each (72 cells in total)
16. Battery Self-Discharge Information	:	< 3.0% @SOC60%, RT for 6 months

17. Description of the Thermal Management System
    The thermal management system for the battery is an air-cooling system, in which cabin air is blower through an inlet duct by cooling fan mounted in battery pack and expelled to outside through an outlet duct.

18. Battery Disposal Plan : Please refer to Common Section 02.00

02.01 List of Vehicles in Durability Groups

Please refer to Common Section 02.01.

03.00 Evaporative/Refueling Family Description

03.00.01 Evaporative/Refueling Family Name: VKMXR0148K1G (C/O 2025MY Carnival HEV)

03.00.01.01 Evaporative/Refueling Family Parameters

1. Type of vapor storage device: Canister (1EA), Air cleaner (1EA)

2. Basic canister design

Evap. code	Absorption flow rate (g/hr)	Nominal working capacity (g)	Size (cc)	Material	Medium	Nominal fuel tank capacity (gal)
148K1G	15	148	2550	Plastic	Activated Carbon	19.0

3. Fuel system: Returnless fuel system

4. Type of refueling emission control system: Integrated type

5. Fill pipe seal mechanism: Liquid seal type

6. Vapor control system or method of vapor line to the canister:
   a. Fill Limit Vent valve
   b. Overfill Limiter (2way valve)
   c. Canister close valve

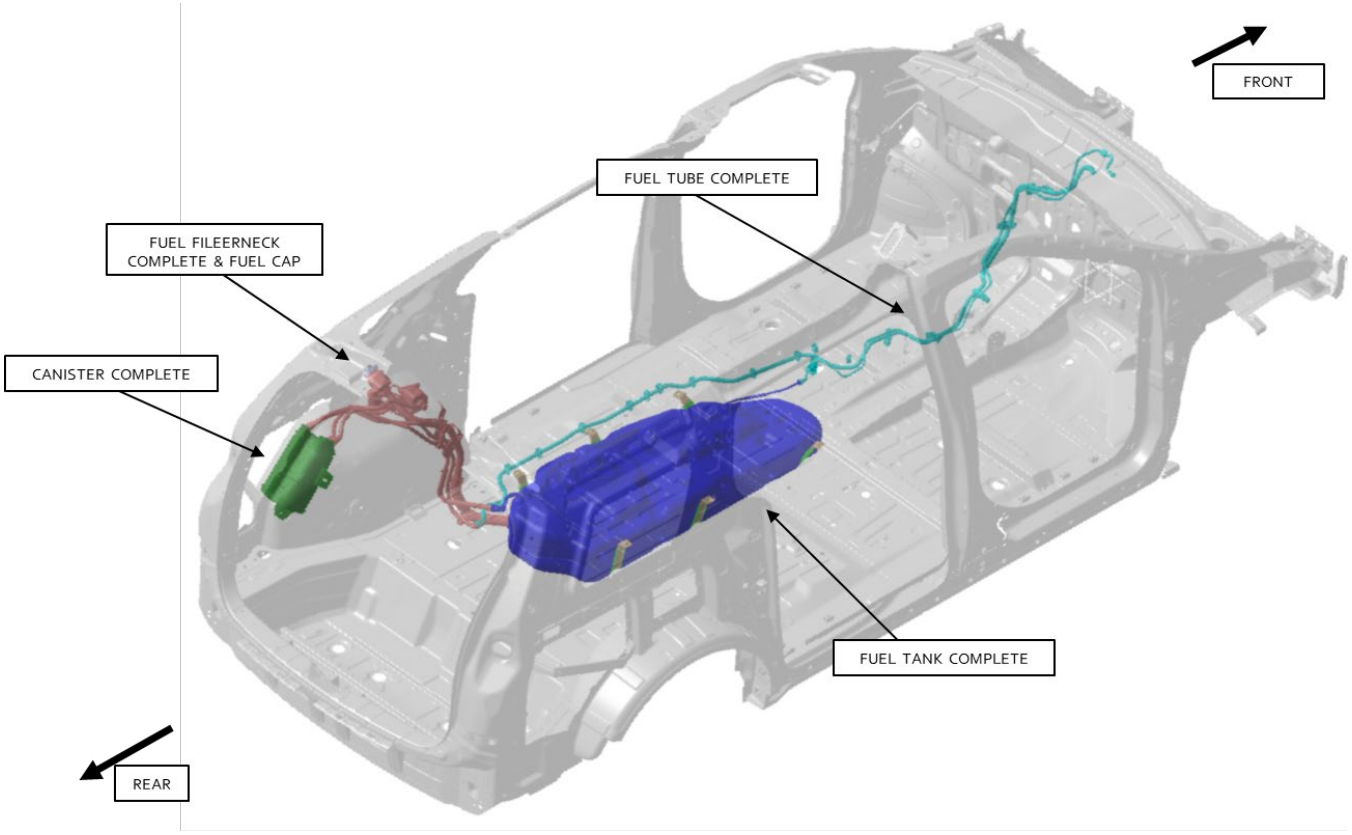
7. Purge control system
   a. Type of valve: Duty
   b. Purge control strategy: Controlled by ECU
   c. High load purge system: No
   d. Active purge system: Yes

8. Vapor hose material: Rubber

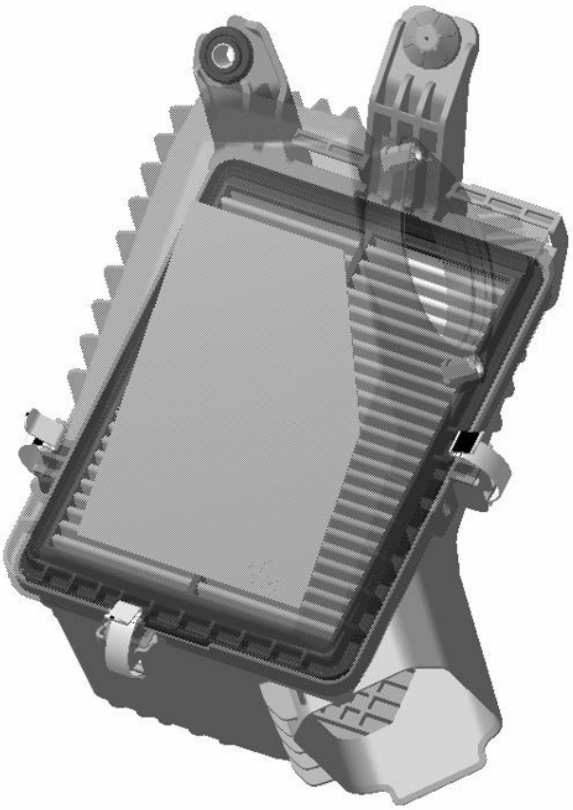
9. Fuel tank material: Plastic

10. HC-Trap:
    - Media: Synthetic (Carbon Sheet type)
    - Working capacity: 0.5g

03.00.01.02 Evaporative/Refueling Schematic



03.00.01.03 HC-TRAP Schematic



03.01 Evaporative/Refueling General Description

Please refer to Common Section 03.01.

03.02 List of Vehicles in Evaporative Families

Please refer to Common Section 03.02.

05.00 Test Group Description

Test group name	:	VKMXT01.6K13
Engine displacement covered	:	1.6 L
Electric motor capacity	:	54 kW @ 1700~2600rpm
Type and size of electric motor	:	Permanent magnet synchronous motor / 4.56 L
Battery capacity	:	5.5 Ah
Voltage and type of battery technology	:	270 V /, Li-ion battery
Arrangement/Number of Cylinders	:	I4
Vehicle Class(s) Covered	:	LDT3 / LDT4
Sales Location/Emission Standard	:	FED : Interim Tier-4 Bin 30 CAL: LEV-IV SULEV 30 See CSI report for emission standard levels

06.00 Test Vehicle Description

Exhaust Durability Data Vehicle

Verify Processing Report

Total Datasets Submitted: 1
Accepted Datasets: 1
Rejected Datasets: 0

The original datasets are listed below. In addition, any information generated by the Verify system is also included. For any rejected datasets, the reason(s) the dataset was rejected is provided below in the Transaction Report for that particular dataset.

TestVehicleInformationSubmission

TestVehicleInformationDetails

InformationProcessCode : C
EPAManufacturerCode : KMX
VehicleIdentificationText : KNANE5KA0N1P98248
VehicleConfigurationNumber : 0

VehicleConfigurationDetails

VehicleDescriptionDetails

ManufacturerVehicleConfigurationNumber : 0
TestGroupName : SKMXT01.6K13
EvaporativeRefuelingFamilyName : SKMXR0148K1G
LeakFamilyIdentifier : KAH
LeakFamilyName : SKMXR0148K1G-KAH
ModelYear : 2025
ActualTestVehicleMakeText : KIA
ActualTestVehicleModelText : Carnival Hybrid

DriveSourceDetails

DriveSourceIdentifier : C
FuelIdentifier : G

DriveSourceDetails

DriveSourceIdentifier : E
FuelIdentifier : EL

FuelCellIndicator : N
RechargeableEnergyStorageSystemIndicator : Y
RechargeableEnergyStorageDeviceIdentifier : B
OffBoardChargeCapabilityIndicator : N
TestDriveCode : F
ShiftIndicatorLightUsageIdentifier : 1
AgedComponentUsageIdentifier : 4

OdometerCorrectionDetails

CorrectionInitialValue : 0
CorrectionFactorValue : 1.0078
CorrectionSignIdentifier : -
CorrectionUnitsCode : M

EngineCodeText : G4FT-AC
EngineRatedHorsepowerValue : 178
EngineDisplacementValue : 1.6

AirAspirationDetails

AirAspirationMethodIdentifier : TC
AirAspirationDeviceCount : 1
AirAspirationConfigurationIdentifier : N

ChargeAirCoolerIdentifier : A

VehicleSpecificationsDetails

CurbWeightValue : 5053
EquivalentTestWeightValue : 5250
GrossVehicleWeightRatingValue : 6504
NVRatioValue : 33.4
AxleRatioValue : 3.65

TransmissionSpecificationsDetails

LightDutyTransmissionTypeIdentifier : AMS
TransmissionLockupIndicator : N
TransmissionCreeperGearIndicator : N
TransmissionGearCount : 6

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : C-H-E
TargetCoefficientAValue : 40.823
TargetCoefficientBValue : -0.00861
TargetCoefficientCValue : 0.028783
SetCoefficientAValue : 13.005
SetCoefficientBValue : 0.13425
SetCoefficientCValue : 0.026741

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : US06
TargetCoefficientAValue : 40.823
TargetCoefficientBValue : -0.00861
TargetCoefficientCValue : 0.028783
SetCoefficientAValue : 13.005
SetCoefficientBValue : 0.13425
SetCoefficientCValue : 0.026741

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : Cold-CO
TargetCoefficientAValue : 44.905
TargetCoefficientBValue : -0.00947
TargetCoefficientCValue : 0.031661
SetCoefficientAValue : 11.266

SetCoefficientBValue : 0.10689
SetCoefficientCValue : 0.029421

ManufacturerCommentText : 25MY KA4 HEV 1.6T GDI 6AT 19in

EPAGeneratedTestVehicleDetails

OriginalReceiptDate : 20250515
HybridVehicleIndicator : Y
AdjustedLoadedVehicleWeightValue : 5778
LoadedVehicleWeightValue : 5353
TotalRoadLoadHorsepowerValue : 15.0

TransactionStatusDetails

TransactionStatusIdentifier : ACCEPTED

Exhaust & Evaporative Emission Data Vehicle

Please refer to CSI report in 07.00.

07.00 Test Results

07.01.01 EV-CIS Certification Summary Information

Certification Summary Information Report submitted to EV-CIS.

See 18.00.00.

07.02 Litmus Test Sheet

Litmus Test of EDV

EDV	FTP(75°F)	Cold FTP (20°F)	HFET	US06	SC03
BAG1	33.0	26.3		20.5	
BAG2	65.1	35.5		34.8	
BAG3	33.2	31.9	45.9		35.4
BAG4	73.7				
TOTAL	45.4			30.1	

(1) Determining the City FE Method

5 Cycle City Criteria (Specific 5 cycle City FE ≥ 0.96 Mpg Based City FE)	Passed

		UNROUNDED	ADJ. ROUNDED	Examination	Decision
CITY FE	MPG BASED	33.7338	32.4	Applicable	Selected
	5-CYCLE	33.7488	33.7	Applicable	
	Ratio of 5CYCLE to 0.96 MPG-BASED		104.01		

CRITERIA : 100%

(2) Determining the Hwy FE Method

5 Cycle Highway Criteria (Specific 5 cycle HWY FE ≥ 0.95 Mpg Based HWY FE)	Passed

		UNROUNDED	ADJ. ROUNDED	Examination	Decision
HWY FE	MPG BASED	31.8536	30.3	Select This	Selected
	5-CYCLE	32.6000	32.6	Not Applicable	
	MODIFIED	32.2728	32.3	Not Applicable	
	Ratio of 5CYCLE to 0.95 MPG-BASED		107.59		

CRITERIA : 100%

09.00 OBD System Description

The on-board diagnostic (OBD) system complies with 40 CFR 86.1806-05, 86.1806-17 per the compliance option allowing demonstration of compliance with California OBD II requirements in Title 13 California Code of Regulation 1968.2 (13 CCR 1968.2) approved on July 31, 2013.

Please refer to OBD application uploaded in EV-CIS system.

10.00 Description of Alternate-Fueled Vehicles: Not Applicable

12.00 Description of Vehicles Covered by Certificate and Test Parameters
12.01 Vehicle Parameters

Carline		625	625
Model Name		Carnival Hybrid	Carnival Hybrid
Vehicle Classification		LDT4	LDT3
Emission control System description	Type, number and configuration of catalyst(s)	See Sec. 02.02	See Sec. 02.02
	EGR Type	Electronic	Electronic
	Air pump type	N/A	N/A
	Fuel system type	DFI	DFI
	Intake air aspiration method	Turbocharger, Charge Air Cooler	Turbocharger, Charge Air Cooler
	Other	-	-
Engine Code		G4FT-AC	G4FT-AC
Number of valves per cylinder		4	4
Engine Displacement (L)		1.6	1.6
Sales area		50-State	50-State
Transmission and overdrive		AMS6 (Overdrive)	AMS6 (Overdrive)
SIL		N/A	N/A
Tire		235/55R19 Continental*1, Goodyear	235/65R17 Hankook, Nexen*1
N/V Ratios		33.4	33.7
ETW(lb)		5250	5250
Elec. Dyno. Target Coefficient		Please refer to 12.02.01.	Please refer to 12.02.01.
Fuel tank volume(gal)		19.0	19.0

Note) *1 : Tested tire

12.02 Test Parameters
12.02.01 Test Parameters

Items \ T/M			AMS6	
Model			Carnival Hybrid	Carnival Hybrid
ETW			5250	5250
Tire			235/55R19 Continental*1, Goodyear	235/65R17 Hankook, Nexen*1
Single Roll	Elec. Dyno. Target Coefficient	A	40.823	37.307
		B	-0.00861	0.11273
		C	0.028783	0.026808
Shift Schedule IDs			Please refer to 12.02.03	
Evap. Code			148K1G	
Canister Loading	Flow Rate(g/hr)		15 (3DBL only) / 40	
	Capacity (g)		148	
Running Loss Fuel Tank Temp.			Please refer to 12.02.05	
Transmission Test Mode(s)			Exhaust Emission: Sport F/E: Eco	
Advanced technology system test mode(s)			N/A	

Note) *1 : Tested tire

12.02.02 Engine Starting Procedures

Please refer to Common Section 12.02.02.

12.02.03 Shift Schedules

Please refer to Common Section 12.02.03.01

12.02.04 Transmission / Advanced Technology System Test Modes

Please refer to Common Section 12.02.04.

13.00 Projected Sales

Please refer to Common Section 13.00.

14.00 Request for Certification

Ms. Kathryn Kochunas
Certification Division
Mobile Source Pollution Control
U.S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, Michigan

Subject: Request for Certificate of Conformity for 2027 Model Year Test Group VKMXT01.6K13 /Evaporative Family VKMXR0148K1G

Dear Ms. Kathryn Kochunas:

Kia Corporation requests that EPA issue a Certificate of Conformity for the test group subjected above.

All vehicles within the test group mentioned above comply with the applicable regulations contained in 40 CFR 86.1844-01(d)(14) including the provisions of 40 CFR Parts 85, 86 and 600. This test group also complies with California Air Resources Board, Final Regulation Order, Sections 1961.4 and 1961.3 (1962.4 and 1962.3 for zero-emission vehicles) Title 13, California Code of Regulations.

The Part 1 Application for Certification has been prepared in accordance with the standardized format recommended by EPA via its guidance document CD-14-19 (LDV/LDT/OCO/LIMO) Subject: Certification Application Reporting Guidance, dated November 24, 2014.

If you have any questions regarding the Certificate of Conformity, do not hesitate to contact Stephanie Wright at swright@hatci.com or (734) 273-1904.

Sincerely,

C. H. Ji
General Manager
Regulation & Certification Team2
Kia Corporation

Ms. Robin U. Lang, Chief
Emissions Certification and Compliance Division
California Air Resources Board
4001 Iowa Ave.
Riverside, California 92507

Subject: Request for an Executive Order for 2027 Model Year Test Group VKMXT01.6K13 /Evaporative Family VKMXR0148K1G

Dear Ms. Robin U. Lang:

Kia Corporation requests that California Air Resources Board (CARB) issue an Executive Order for the test group subjected above.

All vehicles within the test group mentioned above comply with the applicable regulations contained in 40 CFR 86.1844-01(d)(14) including the provisions of 40 CFR Parts 85, 86 and 600. This test group also complies with California Air Resources Board, Final Regulation Order, Sections 1961.4 and 1961.3 (1962.4 and 1962.3 for zero-emission vehicles) Title 13, California Code of Regulations.

The Part 1 Application for Certification has been prepared in accordance with the standardized format recommended by EPA via its guidance document CD-14-19 (LDV/LDT/OCO/LIMO) Subject: Certification Application Reporting Guidance, dated November 24, 2014.

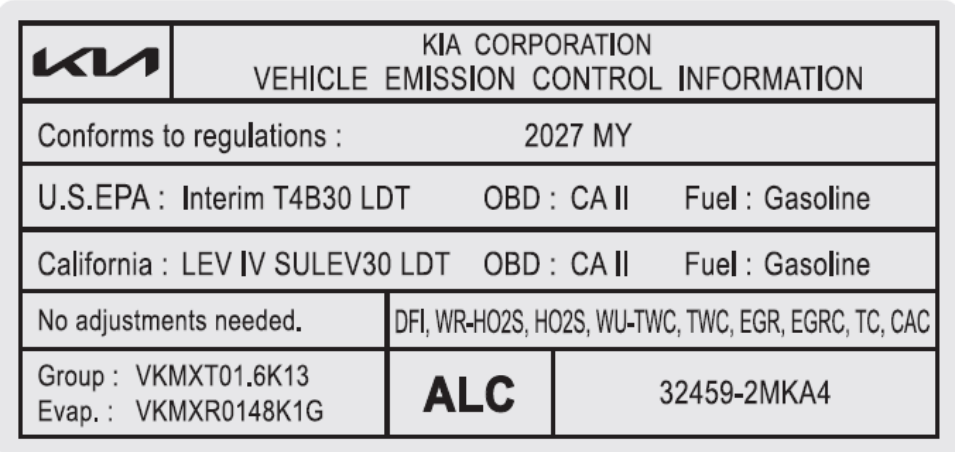
If you have any questions regarding the Executive Order, do not hesitate to contact Stephanie Wright at swright@hatci.com or (734) 273-1904.

Sincerely,

C. H. Ji
General Manager
Regulation & Certification Team2
Kia Corporation

15.00 Other Information
15.01 Certification Fee Filing Form

15.02 Vehicle Emission Control Information (VECI) Label



KIA CORPORATION VEHICLE EMISSION CONTROL INFORMATION		
Conforms to regulations : 2027 MY		
U.S.EPA : Interim T4B30 LDT	OBD : CA II	Fuel : Gasoline
California : LEV IV SULEV30 LDT	OBD : CA II	Fuel : Gasoline
No adjustments needed.	DFI, WR-HO2S, HO2S, WU-TWC, TWC, EGR, EGRC, TC, CAC	
Group : VKMXT01.6K13 Evap. : VKMXR0148K1G	ALC	32459-2MKA4

15.03 ORVR Safety Statement

Kia Corporation is using standard technology in all 2027MY vehicles ORVR systems. In accordance with EPA Guidance Letter CISD-06-06, ORVR applications will not be submitted.

15.04 New Technology System Description

Please refer to Common Section 15.04.

15.05 Engine Oil Information

Please refer to Common Section 15.00

16.00 California ARB Information

16.01 Exhaust Emission Control System (Tune-up label)

Test Group Name	Model	Exhaust Emission Control System
VKMXT01.6K13	Carnival Hybrid	DFI, WR-HO2S, HO2S, WU-TWC TWC, TC, CAC, EGR, EGRC, OBD II

Note:
DFI : Direct Fuel Injection
WR-HO2S : Wide Range/Linear/Air-Fuel Ratio Heated Oxygen Sensor
HO2S : Heated Oxygen Sensor
WU-TWC : Warm up Three Way Catalyst System
TWC : Three Way Catalyst System
TC : Turbocharger
CAC : Charge Air Cooler
EGR : Exhaust Gas Recirculation
EGRC : EGR Cooler
OBD II : On-Board Diagnostics II
(use abbreviations per SAE J1930 Oct 08)

16.02 Test Procedures

Please refer to Common Section 16.02.

16.03.00 Fill Pipe Access Zones Statement and Specifications

16.03.01 Fill Pipe Access Zones Statement

Please refer to Common Section 16.03.01.

16.04.00 Request for Certificate

Please refer to 14.00.

16.04.01 Statement of Compliance

Please refer to Common Section 16.04.01.

16.04.02 Supplemental Data Sheet

Please refer to E-cert data.

16.05.00 Emission Testing Waiver Statement

Please refer to Common Section 16.05.00.

16.06.00 Projected Sales

Please refer to Common Section 13.00.

16.07.00 OBD-II System Description

Please refer to section 09.00.

16.08.00 New Technology System Description

Please refer to Common Section 15.04.

16.09.00 Environmental Performance Label

Pursuant to CALIFORNIA ENVIRONMENTAL PERFORMANCE LABEL SPECIFICATIONS FOR 2009 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES (adopted May 2, 2008, last amended September 2, 2015), 2012, Hyundai Motor Group complies Environmental Performance Label requirement by affixing the Federal Fuel Economy and Environment Label in accordance to 40 CFR Parts 85, 86, and 600 as promulgated on July 6, 2011.

16.10.00 AECD General Statements

The vehicles contained in this test group are not equipped with a defeat device and are not equipped with alternative mapping strategies. Furthermore, all AECDs have been declared and described in the application.

As described in our application, the vehicle's transmission is not part of any AECD. However, the transmission gear is an input for the emissions control strategy, as described in that application. The ECU does not provide an output to the TCU to control emissions strategy.

When driving conditions on the road can be properly represented on the dynamometer, the transmission will perform in the same manner. However, there are some different driving conditions, such as an uphill or downhill grade, extreme heat or extreme cold conditions, heavy braking, and curved road driving conditions, which cannot be appropriately represented on the dynamometer. In these conditions where necessary to protect the transmission or to prevent an unnatural shift pattern, a different shift pattern may be executed. It is our understanding that this is commonly used throughout the industry.

The Hyundai-Kia American Technical Center and the Hyundai Motor Group Research and Development Center in Namyang, Korea have endeavored to respond based on our understanding of the regulatory definition of an AECD, the past certification reviews of AECDs conducted by ARB, existing guidance regarding AECDs issued by ARB, and, of course, EPA’s and ARB’s increased interest in this area. We will continue to monitor guidance issued by ARB regarding the level of information and detail desired in a certification application and will continue to evaluate AECD issues to ensure transparency with respect to our vehicle and engine performance.

16.11.00 California Warranty Compliance

Please refer to Common Section 16.11.00.

16.12.00 Description of the Propulsion System: Not Applicable

16.13.00 ZEV Allowance: Not Applicable

17.00.00 Service of Process

Please refer to Common Section 01.00.

18.00.00 Attachment

1. CSI Report

Certification Summary Information Report

Manufacturer	Kia Corporation	**Manufacturer Code**	KMX
Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	01/13/2026 01:08:45 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test Group Information

CSI Type	New	**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 fuel injection	No

Drive Source #2: Electric Motor

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

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**	LDT3, 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	VKMXHHGNNK13	**Durability Group Equivalency Factor**	1.0
Reduced Fee Test Group	No	**Certification Region Code(s)**	FA, CA
Complies with HD GHG 2b/3 regulations?	No		
Introduction into Commerce Date	--	**CAP2000 Conditional Certificate?**	N/A
Independent Commercial Importer?	--	**Alternative Fuel Converter Certificate?**	--
SFTP Federal Composite Compliance Identifier	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**	VKMXJ01.6P13
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 E0. Litmus result(Value/Threshold): City(33.7/32.4),HWY(32.6/30.3)-2MODE Test No: SKMX91005919(FTP),SKMX91005920(HWY),SKMX91005918(US06),SKMX10083951(SC03),SKMX10083952(Cold)		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Evaporative/Refueling Family Information

Evaporative Summary Information Type	New	**Submission/Correction Date**	01/13/2026 12:30:00 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?	Yes	**Air Intake System Vapor Storage Device Description**	HC-Trap
Fuel System Vapor Storage Canister?	Yes	**Other Vapor Storage**	--
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	148	**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
VKMXR0148K1G-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	625 - Carnival Hybrid	California + CAA Section 177 states	2-Wheel Drive, Front	Automated Manual-Selectable (e.g. Automated Manual with paddles)	6	No
Kia Corporation	1 - KIA	625 - Carnival Hybrid	Federal	2-Wheel Drive, Front	Automated Manual-Selectable (e.g. Automated Manual with paddles)	6	No

Engine Description

Hybrid Type	IC Engine/Electric Motor	**Hybrid Description**	--
Engine Type	4-Stroke Spark Ignition	**Mfr Engine Description**	--
Engine Block Arrangement	Inline	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	No	**Oil Viscosity/Classification**	SAE 0W-20; API SN PLUS
Number of Cylinders/Rotors	4	**Mechanically Variable Compression Ratio Indicator**	N

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

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 + 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)	1.6	**Engine Rated Horsepower**	178
Number of Inlet Valves Per Cylinder	2	**Number of Exhaust Valves Per Cylinder**	2
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	1
Air Aspiration Device Configuration	Single	**Charge Air Cooler Type**	Air
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	APPLY VVT		
Variable Valve Lift?	No		
Variable Valve Lift System Description	--		
Number of Knock Sensors	1	**Number of Air/Fuel Sensors**	2
Air/Fuel Sensor # 1 Type	Other	**Air/Fuel Sensor # 1 Description**	WR-HO2S
Air/Fuel Sensor # 2 Type	Heated oxygen	**Air/Fuel Sensor # 2 Description**	--
Mfr Air/Fuel Sensor Comments	--		
Exhaust Gas Recirculation	Yes	**Cooled Exhaust Gas Recirculation**	Yes
EGR Type	Electronic/Electric	**Exhaust Gas Recirculation Description if 'Other'**	--
Closed Loop Air Injection System	No		
Air Injection Type	--	**Air Injection Type if 'Other'**	--
Mfr Engine Configuration Comments	--		

Official Test Numbers

Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity	--	--	--	--	--	--	--	--	--	--
Gasoline	SKMX10083898	SKMX10083900	SKMX10083901	SKMX10083902	SKMX10083899	32.0	228.2	34.1	286.1	--

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

SFTP LEV-III Official Test Numbers

Test Group Fuel	FTP	US06	SC03
Gasoline	SKMX10083898	SKMX10083900	SKMX10083901
Electricity	--	--	--

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	270	**Battery Energy Capacity**	5.5
Battery Specific Energy	35.4	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Front Wheels	**Driver Controlled Regenerative Braking**	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	1		
Motor/Generator Type 1	PMSM	**Rated Motor/Generator Power**	54
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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Emission Data Vehicle Information

Vehicle ID / Configuration	KA4U4G6HA309F / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	SKMXT01.6K13	**Original Evaporative/Refueling Family**	SKMXR0148K1G
Original Test Vehicle Model Year	2025		

Vehicle Model

Represented Test Vehicle Make	KIA	**Represented Test Vehicle Model**	Carnival Hybrid

Leak Family Details

Leak Family Identifier	KAH	**Leak Family Name**	SKMXR0148K1G-KAH

Drive Sources and Fuel System Details

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**	1.0078
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	G4FT-AC	**Rated Horsepower**	178
Displacement (liters)	1.6		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	1	**Air Aspiration Device Configuration**	Single
Charge Air Cooler Type	Air	**Drive Mode While Testing**	2-Wheel Drive, Front
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	5053	**Equivalent Test Weight (pounds)**	5250
GVWR (lbs)	6504	**N/V Ratio**	33.4
Axle Ratio	3.65		
Transmission Type	Automated Manual- Selectable (e.g. Automated Manual with paddles)	**# of Transmission Gears**	6
Transmission Lockup	No	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VKMXT01.6K13	Evaporative/Refueling Family	VKMXR0148K1G

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	40.823	-0.00861	0.028783	13.005	0.13425	0.026741	15
Cold CO	44.905	-0.00947	0.031661	11.266	0.10689	0.029421	N/A
US06	40.823	-0.00861	0.028783	13.005	0.13425	0.026741	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments 25MY KA4 HEV 1.6T GDI 6AT 19in

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083898**	**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	12/05/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-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	4177	**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)	287	--
FE BAG 1 (Bag 1 Fuel Economy)	29.1	29.1
CO2 BAG 2 (Bag 2 Carbon Dioxide)	193	--
FE BAG 2 (Bag 2 Fuel Economy)	43.4	43.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	269	--
FE BAG 3 (Bag 3 Fuel Economy)	31.1	31.1
CO2 BAG 4 (Bag 4 Carbon Dioxide)	197	--
FE BAG 4 (Bag 4 Fuel Economy)	42.5	42.5
CO (Carbon Monoxide)	0.05	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.6	--
DT-EER (Drive Trace Energy Economy Rating)	-0.21	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.82	--
MFR FE (Manufacturer Fuel Economy)	35.6	35.6
NOX (Nitrogen Oxide)	0.004	--
NMOG (Non-methane organic gases)	0.0057	--
PM (Particulate Matter)	0.0002	--
HC-TOTAL (Total Hydrocarbon)	0.008	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	235	999

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	235	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) 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	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.05	--	--	--	0.09	--	0.1	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.16	--	--	--	0	--	0.2	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0057	--	1.1	--	0.0048	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0097	--	--	--	--	--	0.016	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0120	--	--	--	0	--	0.012	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0040	--	--	--	0.0015	--	0.006	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0002	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.05	--	--	--	0.09	--	0.1	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0057	--	1.1	--	0.0048	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0097	--	--	--	--	--	0.016	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0040	--	--	--	0.0015	--	0.006	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0002	--	--	--	0.0000	--	0.000	0.001	Pass

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

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083902**	**Test Procedure**	**11 - Cold CO**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	12/12/2023	**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	4308	**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**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	299	--
FE BAG 1 (Bag 1 Fuel Economy)	28.8	28.8
CO2 BAG 2 (Bag 2 Carbon Dioxide)	386	--
FE BAG 2 (Bag 2 Fuel Economy)	22.4	22.4
CO2 BAG 3 (Bag 3 Carbon Dioxide)	382	--
FE BAG 3 (Bag 3 Fuel Economy)	22.7	22.7
CO (Carbon Monoxide)	0.12	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.29	--
DT-EER (Drive Trace Energy Economy Rating)	-0.4	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.65	--
MFR FE (Manufacturer Fuel Economy)	23.6	23.6
HC-NM (Non-methane Hydrocarbon)	0.032	--
HC-TOTAL (Total Hydrocarbon)	0.038	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	367	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E10 20FTP

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

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	0.12	--	--	--	0.03	--	0.2	12.5	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.03	--	--	--	0.00	--	0.0	0.5	Pass
CA	50,000 miles	California LEV-IV SULEV30	CO	0.12	--	--	--	0.03	--	0.2	12.5	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083903**	**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	12/13/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-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	4346	**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**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
CO (Carbon Monoxide)	0.07	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.39	--
DT-EER (Drive Trace Energy Economy Rating)	0.14	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.66	--
NOX (Nitrogen Oxide)	0.0073	--
NMOG (Non-methane organic gases)	0.0063	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E10 FTP50

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	4,000 miles	California LEV-IV SULEV30	CO	0.07	--	--	--	--	--	0.1	1.0	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG	0.0063	--	--	--	--	--	0.006	99.999	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0136	--	--	--	--	--	0.014	0.060	Pass
CA	4,000 miles	California LEV-IV SULEV30	NOX	0.0073	--	--	--	--	--	0.007	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX91005919**	**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	05/22/2024	**Fuel**	Gasoline
Fuel Batch ID	29351	**Fuel Calibration Number**	1
Vehicle Class	LDT3 (ALVW 3751-5750, LVW 0-3750, GVW > 6000)	**DF Type**	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5258	**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)	269.8558044	--
FE BAG 1 (Bag 1 Fuel Economy)	32.9707947	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	137.1483765	--
FE BAG 2 (Bag 2 Fuel Economy)	64.983429	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	267.8500671	--
FE BAG 3 (Bag 3 Fuel Economy)	33.2601929	--
CO2 BAG 4 (Bag 4 Carbon Dioxide)	121.3527679	--
FE BAG 4 (Bag 4 Fuel Economy)	73.4416885	--
METHANE (CH4 - Methane)	0.0017073	--
CO (Carbon Monoxide)	0.0586385	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.4346598	--
DT-EER (Drive Trace Energy Economy Rating)	-1.4395672	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.0348831	--
MFR FE (Manufacturer Fuel Economy)	45.4714394	--
NOX (Nitrogen Oxide)	0.0006948	--
N2O (Nitrous Oxide)	0.0004275	--
HC-NM (Non-methane Hydrocarbon)	0.0095062	--
NMOG (Non-methane organic gases)	0.0098865	--
HC-TOTAL (Total Hydrocarbon)	0.0111778	--

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	196

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	195.8750153	--

Manufacturer Test Comments None

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	196	--	--	--	0	--	196	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0017	--	--	--	0.0041	--	0.006	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0004	--	--	--	0.0025	--	0.003	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.06	--	--	--	0.09	--	0.2	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0099	--	1.1	--	0.0048	--	0.015	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0106	--	--	--	--	--	0.017	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0007	--	--	--	0.0015	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.06	--	--	--	0.09	--	0.2	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0099	--	1.1	--	0.0048	--	0.015	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0106	--	--	--	--	--	0.017	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0007	--	--	--	0.0015	--	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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083899**	**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	12/05/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-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	4192	**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)
CO (Carbon Monoxide)	0.01	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.73	--
DT-EER (Drive Trace Energy Economy Rating)	-0.05	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.33	--
MFR FE (Manufacturer Fuel Economy)	37	37
NOX (Nitrogen Oxide)	0.0008	--
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	226	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	226	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E10 HWY

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

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	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0000	--	1.03	--	0.0048	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0008	--	--	--	--	--	0.007	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0008	--	--	--	0.0015	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0000	--	1.03	--	0.0048	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0008	--	--	--	--	--	0.007	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0008	--	--	--	0.0015	--	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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083949**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	12/15/2023	**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	4408	**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)
CO (Carbon Monoxide)	0.05	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.18	--
DT-EER (Drive Trace Energy Economy Rating)	-0.57	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.36	--
MFR FE (Manufacturer Fuel Economy)	44.4	44.4
NOX (Nitrogen Oxide)	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	201	201

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	201	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E0 HWY

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

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	201	--	--	--	0	--	201	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0000	--	1.03	--	0.0048	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0000	--	--	--	--	--	0.006	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0000	--	--	--	0.0015	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0000	--	1.03	--	0.0048	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0000	--	--	--	--	--	0.006	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0000	--	--	--	0.0015	--	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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083958**	**Test Procedure**	**38 - CA fuel 3-day evap.**
Exhaust Test # for this Evap Test	SKMX10083956	**Test Fuel Type**	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/28/2023	**Fuel**	Gasoline
Fuel Batch ID	23E-01	**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	4140	**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)	0.1674	--

Manufacturer Test Comments 25MY KA4 HEV 1.6T FWD 19in 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	0.1674	0	0.167	0.500	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1674	0	0.167	0.500	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX91005806**	**Test Procedure**	**27 - California fuel 2-day evap**
Exhaust Test # for this Evap Test	SKMX91005798	**Test Fuel Type**	46 - CARB LEV3 E10 Regular Gasoline
Test Date	03/05/2024	**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	4975.1	**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)	0.185848	--

Manufacturer Test Comments Hot_Soak_HC_(g) = 0.020126, Diurnal (gHC) = 0.165722

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.1858	0	0.186	0.500	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1858	0	0.186	0.500	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083960**	**Test Procedure**	**24 - Federal fuel refueling test (ORVR)**
Exhaust Test # for this Evap Test	SKMX10083957	**Test Fuel Type**	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	12/08/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-01	**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	4271	**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)	0.0068	--

Manufacturer Test Comments 25MY KA4 HEV 1.6T FWD 19in 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	0.007	0	0.01	0.20	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.007	0	0.01	0.20	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083980**	**Test Procedure**	**37 - California Fuel Running Loss**
Exhaust Test # for this Evap Test	SKMX10083956	**Test Fuel Type**	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/28/2023	**Fuel**	Gasoline
Fuel Batch ID	23E-01	**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-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.001	--

Manufacturer Test Comments 25MY KA4 HEV 1.6T FWD 19in 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	0.001	0	0.00	0.05	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.001	0	0.00	0.01	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083900**	**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	12/05/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-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	4213	**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)	426	--
FE BAG 1 (Bag 1 Fuel Economy)	19.6	19.6
CO2 BAG 2 (Bag 2 Carbon Dioxide)	295	--
FE BAG 2 (Bag 2 Fuel Economy)	28.4	28.4
CO (Carbon Monoxide)	0.06	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.96	--
DT-EER (Drive Trace Energy Economy Rating)	-0.75	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-3.56	--
MFR FE (Manufacturer Fuel Economy)	25.8	25.8
NOX (Nitrogen Oxide)	0.0032	--
NMOG (Non-methane organic gases)	0.0016	--
PM (Particulate Matter)	0.0009	--
HC-TOTAL (Total Hydrocarbon)	0.004	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	324	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E10 US06

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.0600	--	--	--	0.09	--	0.150	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0016	--	1.03	--	0.0048	--	0.006	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0048	--	--	--	--	--	0.011	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0032	--	--	--	0.0015	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0009	--	--	--	0.0000	--	0.001	0.006	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.06	--	--	--	0.09	--	0.2	9.6	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0016	--	1.03	--	0.0048	--	0.006	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0048	--	--	--	--	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0032	--	--	--	0.0015	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0009	--	--	--	0.0000	--	0.001	0.006	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083901**	**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	12/06/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-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	4229	**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)
CO (Carbon Monoxide)	0.11	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.27	--
DT-EER (Drive Trace Energy Economy Rating)	-0.08	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.06	--
MFR FE (Manufacturer Fuel Economy)	27.6	27.6
NOX (Nitrogen Oxide)	0.0024	--
NMOG (Non-methane organic gases)	0.0003	--
HC-TOTAL (Total Hydrocarbon)	0.004	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	303	--

Manufacturer Test Comments KA4 HEV 1.6T FWD 19in ETW 5250 (EDV) E10 SC03

Certification Summary Information Report

Test Group VKMXT01.6K13 **Evaporative/Refueling Family** VKMXR0148K1G

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.1100	--	--	--	0.09	--	0.200	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0003	--	1.03	--	0.0048	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0027	--	--	--	--	--	0.009	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0024	--	--	--	0.0015	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.11	--	--	--	0.09	--	0.2	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0003	--	1.03	--	0.0048	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0027	--	--	--	--	--	0.009	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0024	--	--	--	0.0015	--	0.004	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083981**	**Test Procedure**	**65 - Evap Canister Bleed Test**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/21/2023	**Fuel**	Gasoline
Fuel Batch ID	23E-01	**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	4065	**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)	0.0034	--

Manufacturer Test Comments 25MY KA4 HEV 1.6T FWD 19in 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	0.0034	0	0.003	0.020	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL	0.0034	0	0.003	0.020	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083982**	**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	11/10/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-01	**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	4006	**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 25MY KA4 HEV 1.6T FWD 19in Leak Test Port Near Canister

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	0.0000	0	0.000	0.020	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	LEAK-DIA	0.000	0	0.00	0.02	Pass

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Test #	**SKMX10083983**	**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	11/10/2023	**Fuel**	Gasoline
Fuel Batch ID	23T-01	**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	4006	**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 25MY KA4 HEV 1.6T FWD 19in Leak Test Port Near Fuel pipe

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	0.0000	0	0.000	0.020	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	LEAK-DIA	0.000	0	0.00	0.02	Pass

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Fuel Properties

Fuel Batch ID	**23T-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	08/07/2023	**Fuel Batch Calibration Ineffective Date**	08/07/2026
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.74
Fuel Ethanol Volume Percent (%)	9.9	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18779
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	**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	**23E-01**	**Fuel Calibration Number**	**1**
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	**Fuel Batch Calibration Date**	01/18/2020
Fuel Batch Calibration Effective Date	08/20/2023	**Fuel Batch Calibration Ineffective Date**	08/20/2026
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.748
Fuel Ethanol Volume Percent (%)	9.6	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	17960
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	**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**	--

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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	**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	**29351**	**Fuel Calibration Number**	**1**
Test Fuel Type	61 - Tier 2 Cert Gasoline	**Fuel Batch Calibration Date**	05/03/2023
Fuel Batch Calibration Effective Date	05/03/2023	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.742
Fuel Ethanol Volume Percent (%)	--	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18439
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	**Weight Fraction CO2**	--

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

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**	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	--	--	--	--	--	--	0.03	12.5
120,000 miles	HC-NM	--	--	--	--	--	--	0.00	0.5

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	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0041	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0025	0.010
150,000 miles	CO	--	--	--	--	--	--	0.09	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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	--	--	--	--	--	--	0.09	1.0
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.001

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	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999

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	--	--	--	--	--	--	0.09	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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	--	--	--	--	--	--	0.09	9.6
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	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	--	--	--	--	--	--	0.09	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0015	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**	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	--	--	--	--	--	--	--	99.999
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.060
4,000 miles	NOX	--	--	--	--	--	--	--	99.999

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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	--	--	--	--	--	--	0.09	1.0
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	99.999

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	999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0048	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0015	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	--	--	--	--	--	--	0.03	12.5

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Evaporative/Refueling Family	VKMXR0148K1G	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
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	VKMXR0148K1G	**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	VKMXR0148K1G	**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	VKMXR0148K1G	**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	VKMXR0148K1G	**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 Running Loss		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.01	0

Certification Summary Information Report

Test Group	VKMXT01.6K13	Evaporative/Refueling Family	VKMXR0148K1G

Evaporative/Refueling Family VKMXR0148K1G
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 VKMXR0148K1G
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 VKMXR0148K1G
Cert Region California + CAA Section 177 states
Cert/In-Use Code Cert
Standard Level California LEV-IV Zero Evap (Option 2)
Test Procedure CA fuel 3-day evap.

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

Evaporative/Refueling Family VKMXR0148K1G
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 VKMXR0148K1G
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 VKMXR0148K1G
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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

Evaporative/Refueling Family	VKMXR0148K1G	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
Test Procedure	Federal fuel refueling test (ORVR)		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0

Evaporative/Refueling Family	VKMXR0148K1G	**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 Canister		

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

Evaporative/Refueling Family	VKMXR0148K1G	**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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G

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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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	VKMXT01.6K13	**Evaporative/Refueling Family**	VKMXR0148K1G
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