



Application for Certification - Part 1

Test Group (FOI)

- **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)**

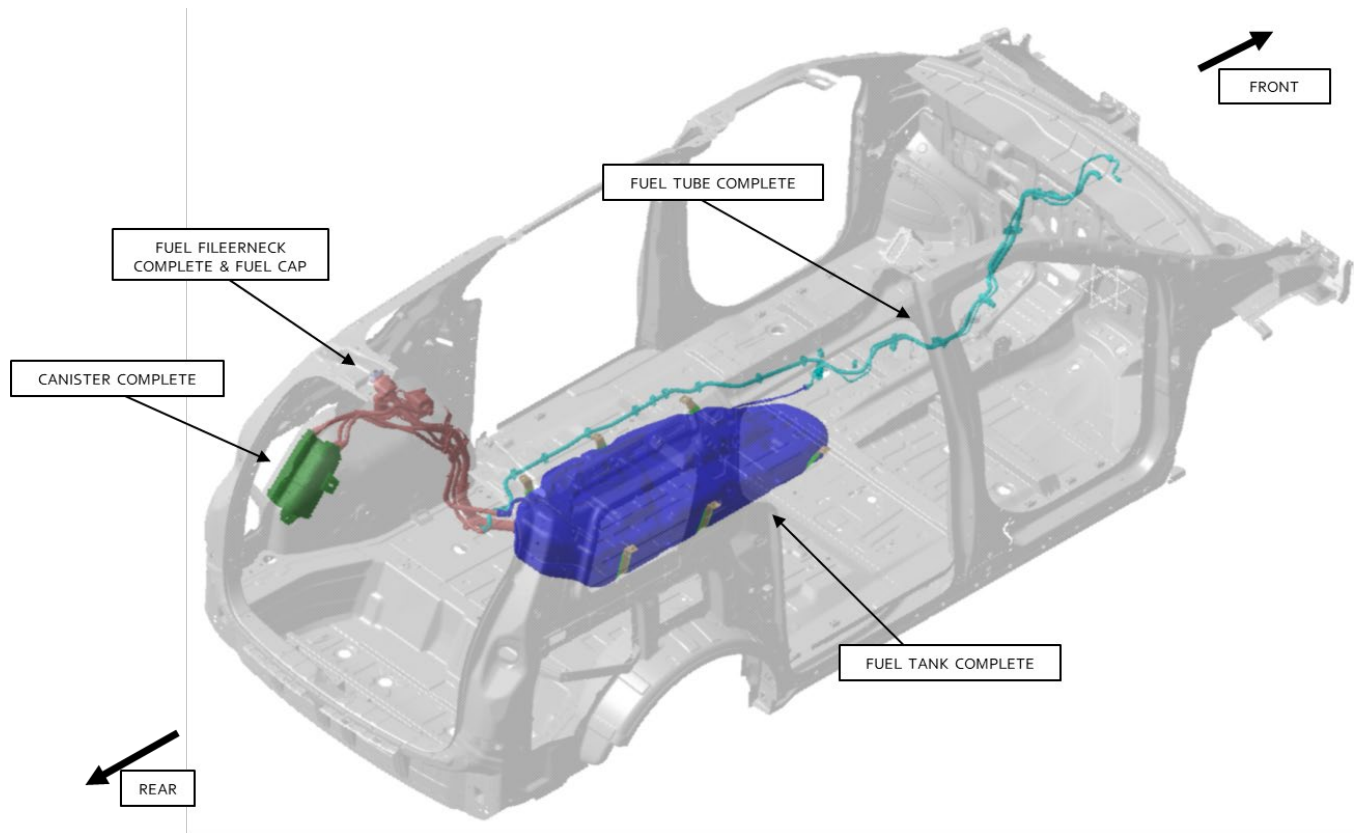
03.00.01.01 Evaporative/Refueling Family Parameters

- 1. Type of vapor storage device: Canister (1EA), Air cleaner (1EA)
- 2. Basic canister design

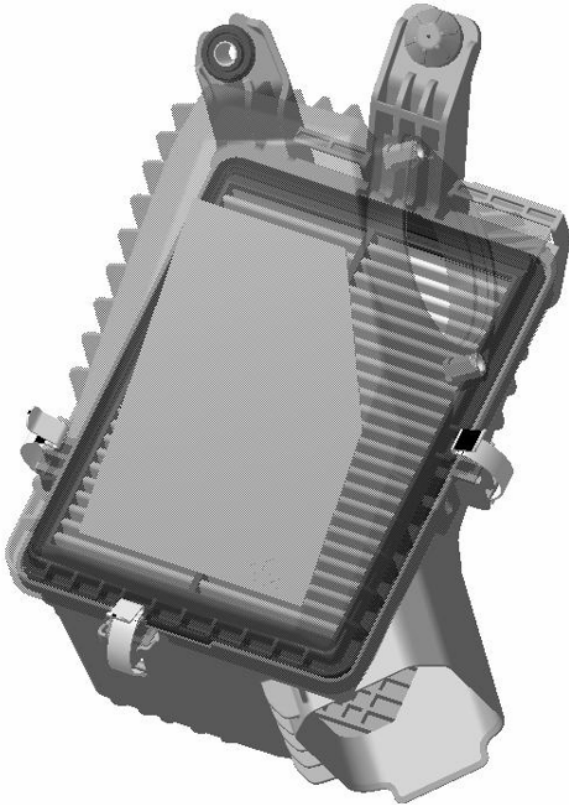
Evap. code	Absorption flow rate (g/hr)	Nominal working capacity (g)	Size (cc)	Material	Medium	Nominal fuel tank capacity (gal)
148K1G	15	148	2550	Plastic	Activated Carbon	19.0

- 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.

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

06.00 Test Vehicle Description

Exhaust Durability Data Vehicle

Verify Processing Report

Page 1 of 3

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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1

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Revised:

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.

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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	45.9	20.5	35.4
BAG2	65.1	35.5		34.8	
BAG3	33.2	31.9			
BAG4	73.7				
TOTAL	45.4			30.1	

(1) Determining the City FE Method

5 Cycle City Criteria (Specific 5 cycle City FE \geq 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 \geq 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%

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
 Issued : 01-30-2026
 Revised:

08.00 Emission Compliance Statement

Please refer to Common Section 08.00.

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1

Issued : 01-30-2026

Revised:

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.

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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,

A handwritten signature in black ink, appearing to read 'C. H. Ji', written over a horizontal line.

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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:



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

VKMXT01.6K13 – Kia Carnival Hybrid 1.6L T-GDI – Part 1
Issued : 01-30-2026
Revised:

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

16.17.00 Battery Label

1. Label Size and Location : 50 x 40 mm (PE room / Battery pack)
45 x 30 mm (Battery module)

2. Label Sample :

< LG ES CELL >

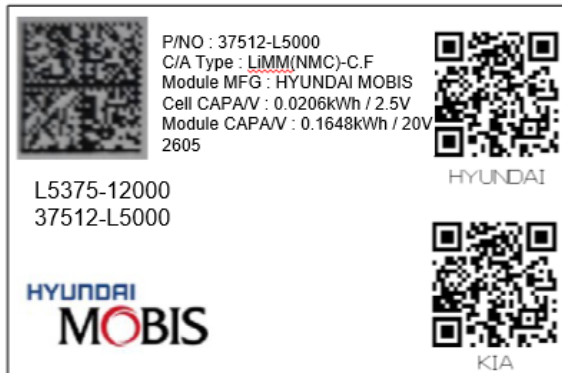
Vehicle label (PE room)



Battery pack label



Battery module label



< SK ON CELL >

Vehicle label (PE room)

BATTERY SYSTEM ASSY



P/NO : 37501-ES010
C/A Type : LiMM(NMC)-C.F
Vehicle MFG : KIA
System CAPA : 1.49kWh
System V : 180V
2605



H2 06 375U9-ES010

Battery pack label

BATTERY SYSTEM ASSY



P/NO : 37501-ES010
C/A Type : LiMM(NMC)-C.F
System MFG : HYUNDAI MOBIS
System CAPA : 1.49kWh
System V : 180V
2605



Battery module label



P/NO : 37512-P7000
C/A Type : LiMM(NMC)-C.F
Module MFG : HYUNDAI MOBIS
Cell CAPA/V : 0.0206kWh / 2.5V
Module CAPA/V : 0.1648kWh / 20V
2605

P7375-12000
37512-P7000



HYUNDAI



KIA



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	VKMXXHHGNNK13	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	VKMXXJ01.6P13
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
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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			
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if Other	--
Battery Type	Lithium Ion	Number of Battery Packs	1
Total Voltage of Battery Packs	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												
<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Combustion Engine</td> <td>Gasoline</td> </tr> <tr> <td>2</td> <td>Electric Motor</td> <td>Electricity</td> </tr> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Combustion Engine	Gasoline	2	Electric Motor	Electricity
Drive Source and Fuel#	Drive Source	Fuel										
1	Combustion Engine	Gasoline										
2	Electric Motor	Electricity										
Hybrid Indicator	Yes											
Multiple Fuel Storage	--	Multiple Fuel Combustion	--									
Fuel Cell Indicator	No	Rechargeable Energy Storage System Indicator	Yes									
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if 'Other'	--									
Off-board charge Capable Indicator	No											
Odometer Correction -- Initial	0	Odometer Correction Factor	1.0078									
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 equipped	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:								
		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	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
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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/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	4,000 miles	California LEV-IV SULEV30	CO	0.07	--	--	--	--	--	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
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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
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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/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	0.0600	--	--	--	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/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	0.1100	--	--	--	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
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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
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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
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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

Certification Summary Information Report

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
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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	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 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	VKMXR0148K1G	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 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 Federal Tier 3 Evap		
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
Evaporative/Refueling Family	VKMXR0148K1G	Cert Region	Federal Federal Tier 3 Evap		
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	--	0.020	0
Evaporative/Refueling Family	VKMXR0148K1G	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	--	0.01	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 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
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 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	VKMXR0148K1G	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	VKMXR0148K1G	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 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	