



Application for Certification - Part 1

Test Group (FOI)

- **Model Year:** 2027
- **Manufacturer Name:** Kia Corporation
- **Test Group:** VKMXT01.6J2T
- **Test Group Description:** 1.6 Liter / I4 Turbocharged GDI / Otto-cycle
- **Durability Group:** VKMXHHGNNJ2T
- **Durability Group Description:** Monolith, WU-TWC + TWC
- **Vehicle Class:**
FED : LDT2
CAL : PC
- **Applicable Standards:**
FED : Interim Tier4 Bin30 / Tier4 Evap
CAL: LEV-IV SULEV 30 / LEV-IV Evap
- **Vehicle Tested:**
MQ4U4G6PA318A/0 (Exhaust EDV)
MQ4U2G6TA565A/0 (Evaporative EDV)
MQ4U4G6PA001A/1 (High Power Cold US06)
MQ4U4G6PA001A/0 (FEDV)
- **Carlines Covered by Certificate:** Sorento Plug-in Hybrid
- **EPA Response Requested by:** June 22, 2026
- **For Questions, Contact:**
Stephanie Wright
Tel: 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 : VKMXHHGNNJ2T
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. GPF (Gasoline Particulate Filter) : None
11. Battery Capacity(s) : 38.3 Ah
12. Battery Chemistry(s) : Lithium Ion (Li+)
13. Battery Duty Cycle Usage(s) : 20 years / 300,000km
14. Battery Manufacturer : Hyundai Mobis (Cell : SKON)
15. Battery Construction : 4 modules with 24 cells each
16. Battery Self-Discharge Information : <5% @SOC60%, RT for 6 months
17. Description of the Thermal Management System : Active liquid cooled
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: VKMXR0106J2G (22MY Sorento PHEV C/O)

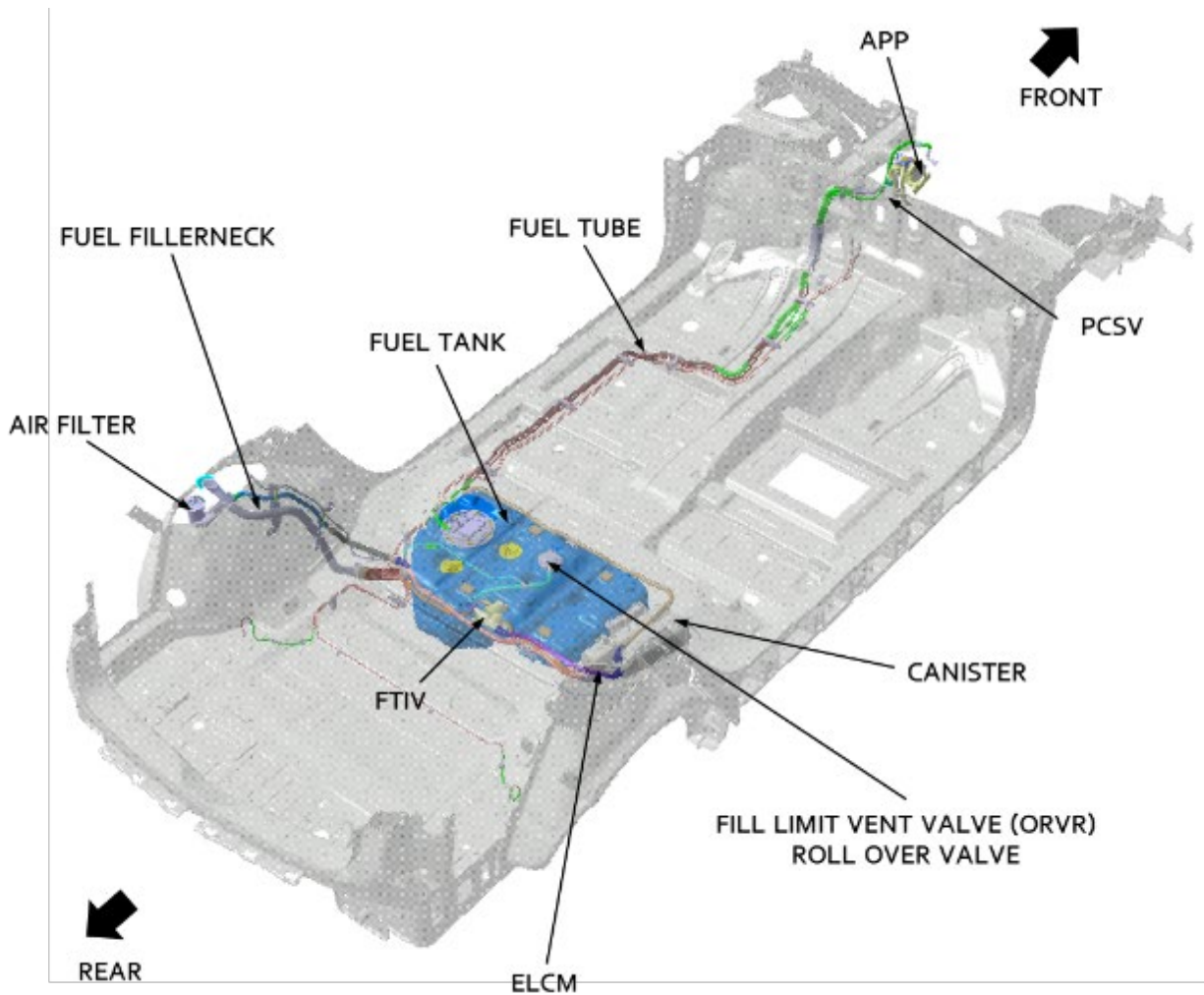
03.00.01.01 Evaporative/Refueling Family Parameters

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

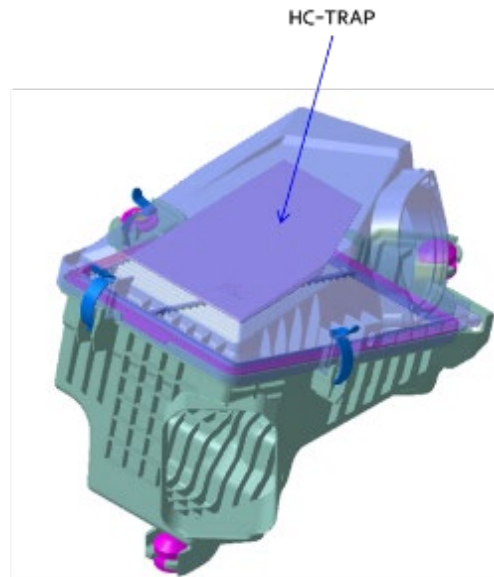
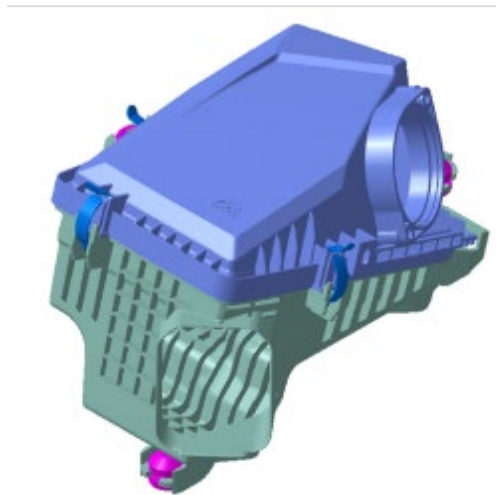
Evap. code	Absorption flow rate (g/hr)	Nominal working capacity (g)	Size (cc)	Material	Medium	Nominal fuel tank capacity (gal)
106J2G	15	106	1800	Plastic	Activated Carbon	12.4

3. Fuel system: Returnless fuel system
4. Type of refueling emission control system: Non-integrated refueling canister only
5. Fillpipe seal mechanism: Liquid seal type
6. Vapor control system or method of vapor line to the canister:
 - a. Fill Limit Vent Valve (ORVR)
 - b. Overfill limiter (2way 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
 - a. Media: Paper containing activated carbon
 - b. 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.

04.03 Exhaust Durability Test Procedure

Please refer to Common Section 04.03 for details.

04.04 Evaporative Durability Test Procedure

Please refer to Common Section 04.04.

05.00 Test Group Description

Test Group Name	:	VKMXT01.6J2T
Engine Displacement (L) Covered	:	1.6 L
Electric motor capacity	:	72 kW
Voltage	:	360 V
Type and size of electric motor	:	Permanent Magnet Synchronous Motor 4.56 L
Battery capacity	:	38.3 Ah
Voltage and type of battery technology	:	360V, Lithium ion (Li+)
Arrangement/Number of Cylinders	:	I4
Vehicle Class(s) Covered	:	FED : LDT2 CAL : PC
Sales Location/Emission Standard	:	FED : Interim Tier4 Bin 30 CAL: LEV-IV SULEV 30 See CSI report for emission standard levels

VKMXT01.6J2T- Kia Sorento Plug-in Hybrid - Part 1

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Revised:

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 : HYX
VehicleIdentificationText : 5NMS21A1BN1P98405
VehicleConfigurationNumber : 0

VehicleConfigurationDetails

VehicleDescriptionDetails

ManufacturerVehicleConfigurationNumber : 0
TestGroupName : RHYXV01.6M13
EvaporativeRefuelingFamilyName : RHYXR0137M1G
LeakFamilyIdentifier : MXH
LeakFamilyName : RHYXR0137M1G-MXH
ModelYear : 2024
ActualTestVehicleMakeText : HYUNDAI
ActualTestVehicleModelText : SANTA FE HYBRID

DriveSourceDetails

DriveSourceIdentifier : E
FuelIdentifier : EL

DriveSourceDetails

DriveSourceIdentifier : C
FuelIdentifier : G

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

OdometerCorrectionDetails

CorrectionInitialValue : 10
CorrectionFactorValue : 1.0165
CorrectionSignIdentifier : -
CorrectionUnitsCode : M

EngineCodeText : G4FT-AC
EngineRatedHorsepowerValue : 178
EngineDisplacementValue : 1.6

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AirAspirationDetails

AirAspirationMethodIdentifier : TC
AirAspirationDeviceCount : 1
AirAspirationConfigurationIdentifier : N

ChargeAirCoolerIdentifier : A

VehicleSpecificationsDetails

CurbWeightValue : 4532
EquivalentTestWeightValue : 4750
GrossVehicleWeightRatingValue : 5799
NVRatioValue : 32.3
AxleRatioValue : 3.51

TransmissionSpecificationsDetails

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

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : C-H-E
TargetCoefficientAValue : 39.616
TargetCoefficientBValue : 0.19265
TargetCoefficientCValue : 0.025583
SetCoefficientAValue : 15.719
SetCoefficientBValue : 0.14134
SetCoefficientCValue : 0.024753

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : Cold-CO
TargetCoefficientAValue : 43.578
TargetCoefficientBValue : 0.21191
TargetCoefficientCValue : 0.028141
SetCoefficientAValue : 14.328
SetCoefficientBValue : 0.09642
SetCoefficientCValue : 0.027517

TargetSetCoefficientDetails

TestProcedureDynamometerCoefficientsCategory : US06
TargetCoefficientAValue : 39.616
TargetCoefficientBValue : 0.19265
TargetCoefficientCValue : 0.025583
SetCoefficientAValue : 15.719
SetCoefficientBValue : 0.14134
SetCoefficientCValue : 0.024753

ManufacturerCommentText : DDV Vehicle ID. Transmission type is corrected to AMS.

EPAGeneratedTestVehicleDetails

OriginalReceiptDate : 20231211
HybridVehicleIndicator : Y
AdjustedLoadedVehicleWeightValue : 5165
LoadedVehicleWeightValue : 4832
TotalRoadLoadHorsepowerValue : 15.1

TransactionStatusDetails

TransactionStatusIdentifier : ACCEPTED

Exhaust & Evaporative Emission Data Vehicle

Please refer to CSI report in 07.00.

07.00 Test Results
07.01 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	33.7	21.9	43.7	19.8	32.1
BAG2	57.2	43.6		37.8	
BAG3	33.9	33.5			
BAG4	81.8				
TOTAL	45.9			31.5	

(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	34.0536	32.7	Applicable	
	5-CYCLE	32.7466	32.7	Applicable	Selected
	Ratio of 5CYCLE to 0.96 MPG-BASED		100.00		

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	30.4753	29.0	Not Applicable	
	5-CYCLE	34.1908	34.2	Select This	Selected
	MODIFIED	34.1071	34.1	Not Applicable	
	Ratio of 5CYCLE to 0.95 MPG-BASED		117.93		

CRITERIA : 100%

08.00 Emission Compliance Statement

Please refer to Common Section 08.00.

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		831	831
Model Name		Sorento Plug-in Hybrid	Sorento Plug-in Hybrid*
Vehicle Classification		LDT2	LDT2
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-ACS	G4FT-ACS
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)	235/55R19 (Continental)
N/V Ratios		33.7	33.7
ETW(lb)		5000	4750
Elec. Dyno. Target Coefficient		Please refer to 07.03	Please refer to 07.03
Fuel tank volume(gal)		12.4(Nominal)/ 14.9(Geometric)	12.4(Nominal)/ 14.9(Geometric)

*Canada only vehicle

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
VKMXT01.6J2T/Evaporative Family VKMXR0106J2G

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 the 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 'Jichang Ji'.

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

VKMXT01.6J2T- Kia Sorento Plug-in Hybrid - Part 1
Issued : 05-11-2026
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
VKMXT01.6J2T/Evaporative Family VKMXR0106J2G

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 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

VKMXT01.6J2T- Kia Sorento Plug-in Hybrid - Part 1
Issued : 05-11-2026
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 SULEV 30 PC		OBD : CA II Fuel : Gasoline
No adjustments needed.	DFI, WR-HO2S, HO2S, WU-TWC, TWC, TC, CAC, EGR, EGRC	
Group : VKMXT01.6J2T Evap. : VKMXR0106J2G	ALC	32459-2M112

15.03 ORVR Safety Statement

Kia Corporation is using standard technology in all 2027MY vehicles ORVR systems. In accordance with EPA Guidance Letter CISC-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 15.05

16.00 California ARB Information

16.01 Exhaust Emission Control System (Tune-up label)

Test Group Name	Model	Exhaust Emission Control System
VKMXT01.6J2T	Sorento Plug-in 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.

VKMXT01.6J2T- Kia Sorento Plug-in Hybrid - Part 1

Issued : 05-11-2026

Revised:

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 to the 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.

16.18.00 Instructions and Information Provided to the Vehicle Owners

Please refer to Common Section 16.18.00

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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	05/11/2026 01:13:25 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
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Test Group Information

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

Drive Sources and Fuel(s)

Drive Source #1: Electric Motor

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

Drive Source #2: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Spark Ignition Direct fuel injection	No

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	Yes
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	Yes
Fuel Cell Indicator	No	EPA Vehicle Class	LDV
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	VKMXXHHGNNJ2T	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	VKMXT01.6J2T
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	Litmus tests (E0 FEDV 5 cycle tests: FTP SKMX10082941, HWY SKMX10082943, US06 SKMX10082944, SC03 SKMX10082947, Cold FTP SKMX10082949), Result(Value/Threshold) : City 32.7/32.7, Highway : 34.2/29.0		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	05/10/2026 10:19:35 PM				
Integrated ORVR?	No	Fuel(s)	Gasoline				
Multiple Fuel Storage	--						
Bladder Fuel Tank?	No						
Fuel Tank Material	Plastic	Fuel Tank Material Description	HDPE				
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)	106	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	No	Applicability of Evaporative Canister Bleed Test	--				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
Leak Family Name	Applicability of Leak Family Requirements	Leak Family Standard (inches)	Leak Family Description				
VKMXR0106J2G-MQP	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	831 - Sorento Plug-in Hybrid	California + CAA Section 177 states	All Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	6	No
Kia Corporation	1 - KIA	831 - Sorento Plug-in Hybrid	Federal	All Wheel Drive	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	0W20, API SN PLUS				
Number of Cylinders/Rotors	4	Mechanically Variable Compression Ratio Indicator	N				

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family			VKMXR0106J2G						
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	Fixed3 (Continuous Variable Valve Timing)										
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-H2OS							
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	Not Applicable	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
Gasoline	SKMX10082921	SKMX10082922	SKMX10082925	SKMX10082920	SKMX10082923	--	228.2	--	286.1	--	
Electricity	SKMX10082921	SKMX10082922	SKMX10082925	SKMX10082920	SKMX10082923	--	--	--	--	--	

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
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SFTP LEV-III Official Test Numbers

Test Group Fuel	FTP	US06	SC03
Electricity	SKMX10082921	SKMX10082922	SKMX10082925
Gasoline	SKMX10082921	SKMX10082922	SKMX10082925

Official Charge Depleting Test Numbers

Test Group Fuel	UDDS	Highway
Gasoline	SKMX10082939	SKMX10082940
Electricity	SKMX10082939	SKMX10082940

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	360	Battery Energy Capacity	38.3
Battery Specific Energy	98.5	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	Yes
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	1		
Motor/Generator Type 1	PMSM	Rated Motor/Generator Power	72
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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G									
Emission Data Vehicle Information												
Vehicle ID / Configuration	MQ4U2G6TA565A / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	NKMXV01.6J2T	Original Evaporative/Refueling Family	NKMXR0106J2G									
Original Test Vehicle Model Year	2022											
Vehicle Model												
Represented Test Vehicle Make	KIA	Represented Test Vehicle Model	Sorento PHEV									
Leak Family Details												
Leak Family Identifier	MQP	Leak Family Name	NKMXR0106J2G-MQP									
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>Electric Motor</td><td>Electricity</td></tr> <tr> <td>2</td><td>Combustion Engine</td><td>Gasoline</td></tr> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity	2	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel										
1	Electric Motor	Electricity										
2	Combustion Engine	Gasoline										
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	Yes											
Odometer Correction -- Initial	0	Odometer Correction Factor	1.0092									
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor											
Odometer Correction Units	Miles											
Engine Code	G4FT-ACS	Rated Horsepower	177									
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)	4537	Equivalent Test Weight (pounds)	4750									
GVWR (lbs)	5952	N/V Ratio	33.7									
Axle Ratio	3.65											
Transmission Type	Automated Manual- Selectable (e.g. Automated Manual with paddles)	# of Transmission Gears	6									
Transmission Lockup	No	Creep Gear	No									

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
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Dynamometer Coefficients:

Coefficient Category	Target Coefficients			Set Coefficients			EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	
City/Highway/Evap	40.61	0.03636	0.028361	18.632	-0.12634	0.028973	15.1
US06	40.61	0.03636	0.028361	18.632	-0.12634	0.028973	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments 22MY MQ4 PHEV 1.6 T-GDI AWD 6AT 19" EVAP

Test #	NKMXX10068153	Test Procedure	38 - CA fuel 3-day evap.
Exhaust Test # for this Evap Test	NKMXX10068152	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	09/03/2020	Fuel	Gasoline
Fuel Batch ID	19E-02	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	4132	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)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.258	--

Manufacturer Test Comments 22MY MQ4 PHEV 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	0.2580	0	0.258	0.300	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2580	0	0.258	0.300	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	NKMX10068154	Test Procedure	27 - California fuel 2-day evap
Exhaust Test # for this Evap Test	NKMX10068149	Test Fuel Type	46 - CARB LEV3 E10 Regular
Test Date	11/06/2020	Fuel	Gasoline
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4262	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)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1968	--

Manufacturer Test Comments

22MY MQ4 PHEV 2DBL

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	0.1968	0	0.197	0.300	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1968	0	0.197	0.300	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G						
Test #	NKMX10068155	Test Procedure	24 - Federal fuel refueling test (ORVR)						
Exhaust Test # for this Evap Test	NKMX10068152	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)						
Test Date	11/10/2020	Fuel	Gasoline						
Fuel Batch ID	19T-03	Fuel Calibration Number	1						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	772-1, Jangduck-Dong								
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)								
Test Start Odometer Reading	4271	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									
<table border="1"> <tr> <td>Test Result Name</td> <td>Unrounded Test Result</td> <td>Verify Calculated FE Equivalent Value (miles per gallon)</td> </tr> <tr> <td>HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)</td> <td>0.09</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)	HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.09	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)							
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.09	--							
Manufacturer Test Comments									
22MY MQ4 PHEV 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	0.090	0	0.09	0.20	Pass	
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.090	0	0.09	0.20	Pass	

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	NKMX10068156	Test Procedure	37 - California Fuel Running Loss
Exhaust Test # for this Evap Test	NKMX10068152	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	09/03/2020	Fuel	Gasoline
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4121	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)
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.65	--
DT-EER (Drive Trace Energy Economy Rating)	-2.57	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.96	--
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0002	--

Manufacturer Test Comments --

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	0.000	0	0.00	0.05	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.000	0	0.00	0.01	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G						
Test #	NKMX10068150	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	08/13/2020	Fuel	Gasoline						
Fuel Batch ID	19T-03	Fuel Calibration Number	1						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	772-1, Jangduck-Dong								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	4087	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									
<table border="1"> <tr> <th>Test Result Name</th> <th>Unrounded Test Result</th> <th>Verify Calculated FE Equivalent Value</th> </tr> <tr> <td>LEAK-DIA (Effective Leak Diameter (inches))</td> <td>0</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	LEAK-DIA (Effective Leak Diameter (inches))	0	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
LEAK-DIA (Effective Leak Diameter (inches))	0	--							
Manufacturer Test Comments									
22MY MQ4 PHEV - 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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G						
Test #	NKMX10068151	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	08/13/2020	Fuel	Gasoline						
Fuel Batch ID	19T-03	Fuel Calibration Number	1						
Vehicle Class	N/A	DF Type	Mfr. Determined						
Verify Test Lab ID	772-1, Jangduck-Dong								
E10 Evaporative Test Measurement Method	--								
Test Start Odometer Reading	4087	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									
<table border="1"> <tr> <td>Test Result Name</td> <td>Unrounded Test Result</td> <td>Verify Calculated FE Equivalent Value</td> </tr> <tr> <td>LEAK-DIA (Effective Leak Diameter (inches))</td> <td>0</td> <td>--</td> </tr> </table>				Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value	LEAK-DIA (Effective Leak Diameter (inches))	0	--
Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value							
LEAK-DIA (Effective Leak Diameter (inches))	0	--							
Manufacturer Test Comments									
22MY MQ4 PHEV 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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G									
Emission Data Vehicle Information												
Vehicle ID / Configuration	MQ4U4G6PA001A / 1	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	TKMXV01.6J2T	Original Evaporative/Refueling Family	TKMXR0106J2G									
Original Test Vehicle Model Year	2026											
Vehicle Model												
Represented Test Vehicle Make	KIA	Represented Test Vehicle Model	Sorento PHEV									
Leak Family Details												
Leak Family Identifier	MQP	Leak Family Name	TKMXR0106J2G-MQP									
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>Electric Motor</td><td>Electricity</td></tr> <tr> <td>2</td><td>Combustion Engine</td><td>Gasoline</td></tr> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity	2	Combustion Engine	Gasoline
Drive Source and Fuel#	Drive Source	Fuel										
1	Electric Motor	Electricity										
2	Combustion Engine	Gasoline										
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	Yes											
Odometer Correction -- Initial	0	Odometer Correction Factor	0.9993									
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles											
Odometer Correction Units	Miles											
Engine Code	G4FT-ACS	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)	4652	Equivalent Test Weight (pounds)	5000									
GVWR (lbs)	5842	N/V Ratio	33.7									
Axle Ratio	3.65											
Transmission Type	Automated Manual- Selectable (e.g. Automated Manual with paddles)	# of Transmission Gears	6									
Transmission Lockup	No	Creep Gear	No									

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family		VKMXR0106J2G	
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	38.076	0.24971	0.025151	8.51	0.2605	0.023492	15.1	
Cold CO	41.884	0.27468	0.027666	12.432	0.07859	0.027578	N/A	
US06	38.076	0.24971	0.025151	8.51	0.2605	0.023492	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		26MY MQ4 PE PHEV 1.6 T-GDI AWD 6AT 19inch						

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	TKMX10089637	Test Procedure	50 - High-Power Cold-Start (HPCS)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	02/14/2025	Fuel	Gasoline
Fuel Batch ID	24T-02	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5463	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)	
ACT-DISTANCE (Actual Distance Driven (miles))	8.021	--	
AS-VOLT (Average System Voltage)	379.77	--	
CO (Carbon Monoxide)	0.1022	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-4.03	--	
DT-EER (Drive Trace Energy Economy Rating)	-2.33	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-5.1	--	
AMP-HRS (Integrated Amp-hours)	8.086	--	
MFR FE (Manufacturer Fuel Economy)	205.3044	205.3044	
NOX (Nitrogen Oxide)	0.0028	--	
NMOG (Non-methane organic gases)	0.0238	--	
END-SOC (System End State of Charge Watt-hours)	3.005	--	
START-SOC (System Start State of Charge Watt-hours)	0	--	
HC-TOTAL (Total Hydrocarbon)	0.0235	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	41.9083	--	
Manufacturer Test Comments	26MY MQ4 PE PHEV AWD 19in E0 Cold US06 Start-SOC and End-SOC test results are calculated in kilo-Watt-hours(kWh).		

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0238	--	--	--	0.0036	--	0.027	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0266	--	--	--	--	--	0.032	0.150	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0028	--	--	--	0.0016	--	0.004	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G									
Emission Data Vehicle Information												
Vehicle ID / Configuration	MQ4U4G6PA318A / 0	Manufacturer Vehicle Configuration Number	0									
Original Test Group Name	SKMXV01.6J2T	Original Evaporative/Refueling Family	SKMXR0106J2G									
Original Test Vehicle Model Year	2025											
Vehicle Model												
Represented Test Vehicle Make	KIA	Represented Test Vehicle Model	Sorento PHEV									
Leak Family Details												
Leak Family Identifier	MQP	Leak Family Name	SKMXR0106J2G-MQP									
Drive Sources and Fuel System Details												
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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	Yes											
Odometer Correction -- Initial	0	Odometer Correction Factor	1.01									
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor											
Odometer Correction Units	Miles											
Engine Code	G4FT-ACS	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)	4652	Equivalent Test Weight (pounds)	5000									
GVWR (lbs)	5842	N/V Ratio	33.7									
Axle Ratio	3.65											
Transmission Type	Automated Manual- Selectable (e.g. Automated Manual with paddles)	# of Transmission Gears	6									
Transmission Lockup	No	Creep Gear	No									

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family		VKMXR0106J2G	
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	38.076	0.24971	0.025151	15.935	0.13817	0.024923	15.1	
Cold CO	41.884	0.27468	0.027666	12.432	0.07859	0.027578	N/A	
US06	38.076	0.24971	0.025151	15.935	0.13817	0.024923	N/A	
Emission Control Device Comments		--						
Manufacturer Test Vehicle Comments		25MY MQ4 PE PHEV 1.6 T-GDI AWD 6AT 19", Rated Horsepower:177Hp->178Hp						

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082920	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	08/29/2023	Fuel	Gasoline
Fuel Batch ID	22D-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4295	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)
METHANE (CH4 - Methane)	0.0078	--
CO (Carbon Monoxide)	0.2707	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.93	--
DT-EER (Drive Trace Energy Economy Rating)	1.01	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.57	--
MFR FE (Manufacturer Fuel Economy)	19.6926	19.6926
NOX (Nitrogen Oxide)	0.0113	--
HC-NM (Non-methane Hydrocarbon)	0.0423	--
NMOG (Non-methane organic gases)	0.0465	--
HC-TOTAL (Total Hydrocarbon)	0.0498	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	438.8644	--

Manufacturer Test Comments 25MY MQ4 PE PHEV AWD 19in 20F FTP-E10, Sport mode, Manual Temperature Contorl, Correction - Test Date

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
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	0.27	--	--	--	0.07	--	0.3	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	HC-NM	0.04	--	--	--	0.0025	--	0.0	0.3	Pass
CA	50,000 miles	California LEV-IV SULEV30	CO	0.27	--	--	--	0.07	--	0.3	10.0	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082921	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/23/2023	Fuel	Gasoline
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4070	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)	362.9439	--
FE BAG 1 (Bag 1 Fuel Economy)	23.0269	23.0269
CO2 BAG 2 (Bag 2 Carbon Dioxide)	237.3157	--
FE BAG 2 (Bag 2 Fuel Economy)	35.3068	35.3068
CO2 BAG 3 (Bag 3 Carbon Dioxide)	345.1788	--
FE BAG 3 (Bag 3 Fuel Economy)	24.2489	24.2489
CO2 BAG 4 (Bag 4 Carbon Dioxide)	127.1421	--
FE BAG 4 (Bag 4 Fuel Economy)	65.8947	65.8947
METHANE (CH4 - Methane)	0.0018	--
CO (Carbon Monoxide)	0.0732	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.72	--
DT-EER (Drive Trace Energy Economy Rating)	0.39	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.87	--
MFR FE (Manufacturer Fuel Economy)	32.1723	32.1723
NOX (Nitrogen Oxide)	0.0024	--
HC-NM (Non-methane Hydrocarbon)	0.0037	--
NMOG (Non-methane organic gases)	0.0041	--
PM (Particulate Matter)	0.0004	--
HC-TOTAL (Total Hydrocarbon)	0.0054	--

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family				VKMXR0106J2G			
		Test Result Name		Unrounded Test Result		Verify Calculated CREE/OPT-CREE						
		Carbon-Related Exhaust Emissions		260.1251		999						
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		260.3349		--						
Manufacturer Test Comments		25MY MQ4 PE PHEV AWD 19in FTP-E10, Sport mode										
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	--	--	--	6	--	1005	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0018	--	--	--	0.0014	--	0.003	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.07	--	--	--	0.22	--	0.3	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO-COMP	0.30	--	--	--	0	--	0.3	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0041	--	1.1	--	0.0036	--	0.008	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0065	--	--	--	--	--	0.012	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX-COMP	0.0122	--	--	--	0	--	0.012	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0024	--	--	--	0.0016	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0004	--	--	--	0.0000	--	0.000	0.003	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.07	--	--	--	0.22	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0041	--	1.1	--	0.0036	--	0.008	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0065	--	--	--	--	--	0.012	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0024	--	--	--	0.0016	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0004	--	--	--	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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082924	Test Procedure	52 - Fed. fuel 50 F exh.
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/25/2023	Fuel	Gasoline
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4183	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)
METHANE (CH4 - Methane)	0.003	--
CO (Carbon Monoxide)	0.2058	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.19	--
DT-EER (Drive Trace Energy Economy Rating)	0.71	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.33	--
MFR FE (Manufacturer Fuel Economy)	38.6795	38.6795
NOX (Nitrogen Oxide)	0.0023	--
HC-NM (Non-methane Hydrocarbon)	0.0078	--
NMOG (Non-methane organic gases)	0.0086	--
HC-TOTAL (Total Hydrocarbon)	0.0107	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	215.6274	--

Manufacturer Test Comments 25MY MQ4 PE PHEV AWD 19in 50F FTP-E10, Sport mode

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
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	0.21	--	--	--	--	--	0.2	1.0	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG	0.0086	--	1.1	--	--	--	0.009	99.999	Pass
CA	4,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0109	--	--	--	--	--	0.011	0.060	Pass
CA	4,000 miles	California LEV-IV SULEV30	NOX	0.0023	--	--	--	--	--	0.002	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082941	Test Procedure	21 - Federal fuel 2-day exhaust (w/can load)
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	09/06/2023	Fuel	Gasoline
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4680	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)	263.604	--
FE BAG 1 (Bag 1 Fuel Economy)	33.7213	33.7213
CO2 BAG 2 (Bag 2 Carbon Dioxide)	156.265	--
FE BAG 2 (Bag 2 Fuel Economy)	57.1661	57.1661
CO2 BAG 3 (Bag 3 Carbon Dioxide)	262.6987	--
FE BAG 3 (Bag 3 Fuel Economy)	33.8882	33.8882
CO2 BAG 4 (Bag 4 Carbon Dioxide)	108.8076	--
FE BAG 4 (Bag 4 Fuel Economy)	81.8159	81.8159
METHANE (CH4 - Methane)	0.004	--
CO (Carbon Monoxide)	0.0785	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.3	--
DT-EER (Drive Trace Energy Economy Rating)	-1.04	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.18	--
MFR FE (Manufacturer Fuel Economy)	45.9356	45.9356
NOX (Nitrogen Oxide)	0.0016	--
N2O (Nitrous Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0.0044	--
NMOG (Non-methane organic gases)	0.0046	--
HC-TOTAL (Total Hydrocarbon)	0.0079	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	194.1511	194

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
		Test Result Name			Unrounded Test Result			Verify Calculated CO2				
		Carbon dioxide			193.6717			--				
Manufacturer Test Comments		25MY MQ4 PE PHEV AWD 19in E0 FTP, Variable Speed Fan, ECO mode										
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	194	--	--	--	6	--	200	--	--
Fed	120,000 miles	Federal Tier 3 Bin 30	METHANE	0.0040	--	--	--	0.0014	--	0.005	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 30	N2O	0.0004	--	--	--	0.001	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	CO	0.08	--	--	--	0.22	--	0.3	1.0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0046	--	1.1	--	0.0036	--	0.008	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0062	--	--	--	--	--	0.011	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0016	--	--	--	0.0016	--	0.003	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.08	--	--	--	0.22	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0046	--	1.1	--	0.0036	--	0.008	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0062	--	--	--	--	--	0.011	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0016	--	--	--	0.0016	--	0.003	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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082923	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/23/2023	Fuel	Gasoline
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4085	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)
METHANE (CH4 - Methane)	0	--
CO (Carbon Monoxide)	0.0206	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	4.99	--
DT-EER (Drive Trace Energy Economy Rating)	1.71	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	6.2	--
MFR FE (Manufacturer Fuel Economy)	40.2286	40.2286
NOX (Nitrogen Oxide)	0.0004	--
HC-NM (Non-methane Hydrocarbon)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	208.0314	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	207.841	--

Manufacturer Test Comments 25MY MQ4 PE PHEV AWD 19in HWY-E10, Sport mode

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
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	--	--	--	5	--	1004	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0004	--	--	--	--	--	0.006	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0004	--	--	--	0.0016	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0004	--	--	--	--	--	0.006	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0004	--	--	--	0.0016	--	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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082943	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	08/31/2023	Fuel	Gasoline
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4422	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)
METHANE (CH4 - Methane)	0.0003	--
CO (Carbon Monoxide)	0.0592	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.5	--
DT-EER (Drive Trace Energy Economy Rating)	0.35	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.96	--
MFR FE (Manufacturer Fuel Economy)	43.6977	43.6977
NOX (Nitrogen Oxide)	0	--
N2O (Nitrous Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0.0002	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	204.0943	204

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	203.7566	--

Manufacturer Test Comments

25MY MQ4 PE PHEV AWD 19in E0 HWY, Variable Speed Fan, ECO mode

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
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	204	--	--	--	5	--	209	--	--
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0000	--	--	--	--	--	0.005	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0000	--	--	--	0.0016	--	0.002	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0000	--	--	--	--	--	0.005	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0000	--	--	--	0.0016	--	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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082922	Test Procedure	90 - US06
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/23/2023	Fuel	Gasoline
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4105	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)	
METHANE (CH4 - Methane)	0.0037	--	
CO (Carbon Monoxide)	0.0919	--	
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.04	--	
DT-EER (Drive Trace Energy Economy Rating)	-0.11	--	
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.06	--	
MFR FE (Manufacturer Fuel Economy)	22.8549	22.8549	
NOX (Nitrogen Oxide)	0.0032	--	
HC-NM (Non-methane Hydrocarbon)	0.0067	--	
NMOG (Non-methane organic gases)	0.0069	--	
PM (Particulate Matter)	0.0021	--	
HC-TOTAL (Total Hydrocarbon)	0.0103	--	
Test Result Name	Unrounded Test Result	Verify Calculated CO2	
Carbon dioxide	365.6283	--	
Manufacturer Test Comments	25MY MQ4 PE PHEV AWD 19in US06-E10, Sport mode		

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family					VKMXR0106J2G		
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	0.0919	--	--	--	0.22	--	0.312	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0069	--	1.03	--	0.0036	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0101	--	--	--	--	--	0.015	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0032	--	--	--	0.0016	--	0.005	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	PM	0.0021	--	--	--	0.0000	--	0.002	0.006	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.09	--	--	--	0.22	--	0.3	9.6	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0069	--	1.03	--	0.0036	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0101	--	--	--	--	--	0.015	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0032	--	--	--	0.0016	--	0.005	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	PM	0.0021	--	--	--	0.0000	--	0.002	0.003	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082925	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	08/27/2023	Fuel	Gasoline
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	772-1, Jangduck-Dong		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4244	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)
METHANE (CH4 - Methane)	0.0019	--
CO (Carbon Monoxide)	0.0904	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.14	--
DT-EER (Drive Trace Energy Economy Rating)	1.59	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.57	--
MFR FE (Manufacturer Fuel Economy)	19.4557	19.4557
NOX (Nitrogen Oxide)	0.0052	--
HC-NM (Non-methane Hydrocarbon)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0.0019	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	429.6713	--

Manufacturer Test Comments 25MY MQ4 PE PHEV AWD 19in SC03-E10, Sport mode

Certification Summary Information Report

Test Group		VKMXT01.6J2T				Evaporative/Refueling Family				VKMXR0106J2G		
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	0.0904	--	--	--	0.22	--	0.310	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NMOG+NOX	0.0052	--	--	--	--	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 30	NOX	0.0052	--	--	--	0.0016	--	0.007	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	CO	0.09	--	--	--	0.22	--	0.3	1.0	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG	0.0000	--	1.03	--	0.0036	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV SULEV30	NMOG+NOX	0.0052	--	--	--	--	--	0.010	0.030	Pass
CA	150,000 miles	California LEV-IV SULEV30	NOX	0.0052	--	--	--	0.0016	--	0.007	99.999	Pass

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Test #	SKMX10082939	Test Procedure	81 - Charge Depleting UDDS
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	09/04/2023	Fuel	N/A
Fuel Batch ID	22M-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	4506	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
PHEV/EV Charge Depleting Test Information			
Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	13.89
Charge Depleting Range (Calculated miles)	52.15	Charge Depleting Range (Actual miles)	44.81
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017
All Electric Range Unadjusted (miles)	45.777	Equivalent All Electric Range (miles)	45.34
Number of Charge Depleting Bags/Phases Conducted	8	Transition Bag/Phase Number	7
Charge Depleting Bag/Phase #1			
Test Result/Emission Name		Unrounded Test Result	
Actual Distance Driven (miles)		7.466	
Average System Voltage		389.75	
Carbon Monoxide		0	
Carbon dioxide		0	
Carbon-Related Exhaust Emissions		0	
Drive Trace Absolute Speed Change Rating		-0.51	
Drive Trace Energy Economy Rating		-0.82	
Drive Trace Inertia Work Ratio Rating		-0.43	
Integrated Amp-hours		5.262	
Manufacturer Fuel Economy		0	
System End State of Charge Watt-hours		2.005	
System Start State of Charge Watt-hours		0	
Total Hydrocarbon		0	
Charge Depleting Bag/Phase #2			

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.469	
	Average System Voltage	377.675	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	-0.64	
	Drive Trace Energy Economy Rating	-0.81	
	Drive Trace Inertia Work Ratio Rating	-0.38	
	Integrated Amp-hours	10.398	
	Manufacturer Fuel Economy	0	
	System End State of Charge Watt-hours	3.897	
	System Start State of Charge Watt-hours	2.005	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.467
Average System Voltage	365.225
Carbon Monoxide	0
Carbon dioxide	0
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	-0.43
Drive Trace Energy Economy Rating	-0.69
Drive Trace Inertia Work Ratio Rating	-0.31
Integrated Amp-hours	15.64
Manufacturer Fuel Economy	0
System End State of Charge Watt-hours	5.762
System Start State of Charge Watt-hours	3.897
Total Hydrocarbon	0

Charge Depleting Bag/Phase #4

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.469	
	Average System Voltage	354.515	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	-0.43	
	Drive Trace Energy Economy Rating	-0.7	
	Drive Trace Inertia Work Ratio Rating	-0.27	
	Integrated Amp-hours	21.013	
	Manufacturer Fuel Economy	0	
	System End State of Charge Watt-hours	7.615	
	System Start State of Charge Watt-hours	5.762	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #5

	Test Result/Emission Name	Unrounded Test Result
	Actual Distance Driven (miles)	7.468
	Average System Voltage	347.595
	Carbon Monoxide	0
	Carbon dioxide	0
	Carbon-Related Exhaust Emissions	0
	Drive Trace Absolute Speed Change Rating	-0.62
	Drive Trace Energy Economy Rating	-0.64
	Drive Trace Inertia Work Ratio Rating	-0.42
	Integrated Amp-hours	26.479
	Manufacturer Fuel Economy	0
	System End State of Charge Watt-hours	9.466
	System Start State of Charge Watt-hours	7.615
	Total Hydrocarbon	0

Charge Depleting Bag/Phase #6

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	7.469	
	Average System Voltage	341.4	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	-0.69	
	Drive Trace Energy Economy Rating	-0.74	
	Drive Trace Inertia Work Ratio Rating	-0.41	
	Integrated Amp-hours	32.023	
	Manufacturer Fuel Economy	0	
	System End State of Charge Watt-hours	11.305	
	System Start State of Charge Watt-hours	9.466	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #7

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.463
Average System Voltage	336.7
Carbon Monoxide	0.0995
Carbon dioxide	170.4233
Carbon-Related Exhaust Emissions	170.227
Drive Trace Absolute Speed Change Rating	0.68
Drive Trace Energy Economy Rating	-0.54
Drive Trace Inertia Work Ratio Rating	0.03
Integrated Amp-hours	32.558
Manufacturer Fuel Economy	52.3915
System End State of Charge Watt-hours	11.475
System Start State of Charge Watt-hours	11.305
Total Hydrocarbon	0.0225

Charge Depleting Bag/Phase #8

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G																												
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>7.462</td></tr><tr><td>Average System Voltage</td><td>336.16</td></tr><tr><td>Carbon Monoxide</td><td>0.054</td></tr><tr><td>Carbon dioxide</td><td>188.6052</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>189.0913</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>0.91</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>-0.46</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>0.24</td></tr><tr><td>Integrated Amp-hours</td><td>32.369</td></tr><tr><td>Manufacturer Fuel Economy</td><td>47.1648</td></tr><tr><td>System End State of Charge Watt-hours</td><td>11.383</td></tr><tr><td>System Start State of Charge Watt-hours</td><td>11.475</td></tr><tr><td>Total Hydrocarbon</td><td>0.0039</td></tr></table>			Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.462	Average System Voltage	336.16	Carbon Monoxide	0.054	Carbon dioxide	188.6052	Carbon-Related Exhaust Emissions	189.0913	Drive Trace Absolute Speed Change Rating	0.91	Drive Trace Energy Economy Rating	-0.46	Drive Trace Inertia Work Ratio Rating	0.24	Integrated Amp-hours	32.369	Manufacturer Fuel Economy	47.1648	System End State of Charge Watt-hours	11.383	System Start State of Charge Watt-hours	11.475	Total Hydrocarbon	0.0039
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Total Hydrocarbon	0.0039																														
Manufacturer Test Comments	25MY MQ4 PE PHEV AWD 19in CD UDDS-E0. Start-SOC and End-SOC test results are calculated in kilo-Watt-hours(kWh).																														

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G																												
Test #	SKMX10082940	Test Procedure	84 - Charge Depleting Highway																												
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline																												
Test Date	09/05/2023	Fuel	N/A																												
Fuel Batch ID	22M-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	4566	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																												
PHEV/EV Charge Depleting Test Information																															
Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	13.59																												
Charge Depleting Range (Calculated miles)	51.3	Charge Depleting Range (Actual miles)	40.99																												
Charge Depleting Range Highway (Calculated miles)	--	Derived 5-Cycle Coefficient Model Year	2017																												
All Electric Range Unadjusted (miles)	41.167	Equivalent All Electric Range (miles)	40.29																												
Number of Charge Depleting Bags/Phases Conducted	6	Transition Bag/Phase Number	5																												
Charge Depleting Bag/Phase #1																															
<table border="1"> <thead> <tr> <th>Test Result/Emission Name</th> <th>Unrounded Test Result</th> </tr> </thead> <tbody> <tr> <td>Actual Distance Driven (miles)</td> <td>10.247</td> </tr> <tr> <td>Average System Voltage</td> <td>387.475</td> </tr> <tr> <td>Carbon Monoxide</td> <td>0</td> </tr> <tr> <td>Carbon dioxide</td> <td>0</td> </tr> <tr> <td>Carbon-Related Exhaust Emissions</td> <td>0</td> </tr> <tr> <td>Drive Trace Absolute Speed Change Rating</td> <td>3.3</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-0.34</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>4.13</td> </tr> <tr> <td>Integrated Amp-hours</td> <td>7.798</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>0</td> </tr> <tr> <td>System End State of Charge Watt-hours</td> <td>2.957</td> </tr> <tr> <td>System Start State of Charge Watt-hours</td> <td>0</td> </tr> <tr> <td>Total Hydrocarbon</td> <td>0</td> </tr> </tbody> </table>		Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.247	Average System Voltage	387.475	Carbon Monoxide	0	Carbon dioxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	3.3	Drive Trace Energy Economy Rating	-0.34	Drive Trace Inertia Work Ratio Rating	4.13	Integrated Amp-hours	7.798	Manufacturer Fuel Economy	0	System End State of Charge Watt-hours	2.957	System Start State of Charge Watt-hours	0	Total Hydrocarbon	0		
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Charge Depleting Bag/Phase #2																															

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.249	
	Average System Voltage	368.87	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	3.26	
	Drive Trace Energy Economy Rating	-0.35	
	Drive Trace Inertia Work Ratio Rating	4.06	
	Integrated Amp-hours	15.769	
	Manufacturer Fuel Economy	0	
	System End State of Charge Watt-hours	5.827	
	System Start State of Charge Watt-hours	2.957	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.247
Average System Voltage	353.78
Carbon Monoxide	0
Carbon dioxide	0
Carbon-Related Exhaust Emissions	0
Drive Trace Absolute Speed Change Rating	3
Drive Trace Energy Economy Rating	-0.33
Drive Trace Inertia Work Ratio Rating	3.7
Integrated Amp-hours	23.411
Manufacturer Fuel Economy	0
System End State of Charge Watt-hours	8.725
System Start State of Charge Watt-hours	5.827
Total Hydrocarbon	0

Charge Depleting Bag/Phase #4

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.248	
	Average System Voltage	342.075	
	Carbon Monoxide	0	
	Carbon dioxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	3.02	
	Drive Trace Energy Economy Rating	-0.36	
	Drive Trace Inertia Work Ratio Rating	3.78	
	Integrated Amp-hours	32.791	
	Manufacturer Fuel Economy	0	
	System End State of Charge Watt-hours	11.599	
	System Start State of Charge Watt-hours	8.725	
	Total Hydrocarbon	0	

Charge Depleting Bag/Phase #5

	Test Result/Emission Name	Unrounded Test Result	
	Actual Distance Driven (miles)	10.248	
	Average System Voltage	338.175	
	Carbon Monoxide	0.1193	
	Carbon dioxide	218.8669	
	Carbon-Related Exhaust Emissions	219.2266	
	Drive Trace Absolute Speed Change Rating	4.57	
	Drive Trace Energy Economy Rating	0.38	
	Drive Trace Inertia Work Ratio Rating	5.66	
	Integrated Amp-hours	32.624	
	Manufacturer Fuel Economy	40.6814	
	System End State of Charge Watt-hours	11.513	
	System Start State of Charge Watt-hours	11.599	
	Total Hydrocarbon	0.012	

Charge Depleting Bag/Phase #6

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G																												
	<table><tr><th>Test Result/Emission Name</th><th>Unrounded Test Result</th></tr><tr><td>Actual Distance Driven (miles)</td><td>10.248</td></tr><tr><td>Average System Voltage</td><td>338.295</td></tr><tr><td>Carbon Monoxide</td><td>0.0334</td></tr><tr><td>Carbon dioxide</td><td>211.2875</td></tr><tr><td>Carbon-Related Exhaust Emissions</td><td>211.0503</td></tr><tr><td>Drive Trace Absolute Speed Change Rating</td><td>4.59</td></tr><tr><td>Drive Trace Energy Economy Rating</td><td>0.46</td></tr><tr><td>Drive Trace Inertia Work Ratio Rating</td><td>5.7</td></tr><tr><td>Integrated Amp-hours</td><td>32.536</td></tr><tr><td>Manufacturer Fuel Economy</td><td>42.2575</td></tr><tr><td>System End State of Charge Watt-hours</td><td>11.453</td></tr><tr><td>System Start State of Charge Watt-hours</td><td>11.513</td></tr><tr><td>Total Hydrocarbon</td><td>0.0014</td></tr></table>	Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.248	Average System Voltage	338.295	Carbon Monoxide	0.0334	Carbon dioxide	211.2875	Carbon-Related Exhaust Emissions	211.0503	Drive Trace Absolute Speed Change Rating	4.59	Drive Trace Energy Economy Rating	0.46	Drive Trace Inertia Work Ratio Rating	5.7	Integrated Amp-hours	32.536	Manufacturer Fuel Economy	42.2575	System End State of Charge Watt-hours	11.453	System Start State of Charge Watt-hours	11.513	Total Hydrocarbon	0.0014		
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Manufacturer Test Comments	25MY MQ4 PE PHEV AWD 19in CD HFET-E0. Start-SOC and End-SOC test results are calculated in kilo-Watt-hours(kWh).																														

Certification Summary Information Report

Test Group	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Fuel Properties			
Fuel Batch ID	22D-01	Fuel Calibration Number	1
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/29/2021
Fuel Batch Calibration Effective Date	05/10/2022	Fuel Batch Calibration Ineffective Date	05/10/2025
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17925
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.828	Weight Fraction CO2	--
Fuel Batch ID	19E-02	Fuel Calibration Number	1
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	12/18/2018
Fuel Batch Calibration Effective Date	12/18/2018	Fuel Batch Calibration Ineffective Date	12/18/2021
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.751
Fuel Ethanol Volume Percent (%)	9.7	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17802
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.832	Weight Fraction CO2	--
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	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	VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18435
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	Weight Fraction CO2	--
Fuel Batch ID	19T-03	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	08/22/2019
Fuel Batch Calibration Effective Date	04/13/2020	Fuel Batch Calibration Ineffective Date	04/13/2023
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17949
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	Weight Fraction CO2	--
Fuel Batch ID	19E-03	Fuel Calibration Number	1
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	08/08/2019
Fuel Batch Calibration Effective Date	10/29/2019	Fuel Batch Calibration Ineffective Date	10/29/2022
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17917
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--
Fuel Batch ID	24T-02	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	07/11/2023
Fuel Batch Calibration Effective Date	11/06/2024	Fuel Batch Calibration Ineffective Date	11/06/2027
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17807
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	Weight Fraction CO2	--

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family			VKMXR0106J2G	
Consolidated List of Standards									
Exhaust Standards									
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	6	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0014	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.001	0.010
150,000 miles	CO	--	--	--	--	--	--	0.22	1.0
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.22	9.6
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.003

Certification Summary Information Report

Test Group	VKMXT01.6J2T				Evaporative/Refueling Family			VKMXR0106J2G	
Cert Region	California + CAA Section 177 states				Cert/In-Use Code			Cert	
Vehicle Class	LDV/Passenger Car				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	--	--	--	--	--	--	0.22	1.0
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999

Cert Region	California + CAA Section 177 states				Cert/In-Use Code			Cert	
Vehicle Class	LDV/Passenger Car				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	--	--	--	--	--	--	0.07	10.0

Cert Region	Federal				Cert/In-Use Code			Cert	
Vehicle Class	LDV/Passenger Car				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	--	--	--	--	--	--	0.22	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.006

Certification Summary Information Report

Test Group		VKMXT01.6J2T			Evaporative/Refueling Family			VKMXR0106J2G	
Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	0.22	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999

Cert Region		Federal			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			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	--	--	--	--	--	--	5	999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert	
Vehicle Class		LDV/Passenger Car			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	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999

Certification Summary Information Report

Test Group	VKMXT01.6J2T				Evaporative/Refueling Family			VKMXR0106J2G	
Cert Region	Federal				Cert/In-Use Code			Cert	
Vehicle Class	LDV/Passenger Car				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	--	--	--	--	--	--	0.07	10.0
120,000 miles	HC-NM	--	--	--	--	--	--	0.0025	0.3

Cert Region	California + CAA Section 177 states				Cert/In-Use Code			Cert	
Vehicle Class	LDV/Passenger Car				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	--	--	--	--	--	--	0.22	1.0
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.1	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.030
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0000	0.001

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

Certification Summary Information Report

Test Group	VKMXT01.6J2T		Evaporative/Refueling Family		VKMXR0106J2G				
Cert Region	California + CAA Section 177 states		Cert/In-Use Code		Cert				
Vehicle Class	LDV/Passenger Car		Standard Level		California LEV-IV SULEV30				
Fuel	Gasoline		Test Procedure		High-Power Cold-Start (HPCS)				
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	--	--	--	--	--	--	0.0036	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.150
150,000 miles	NOX	--	--	--	--	--	--	0.0016	99.999

Evaporative/Refueling Standards

Evaporative/Refueling Family		VKMXR0106J2G		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		--		0.300		0	

Evaporative/Refueling Family		VKMXR0106J2G		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		

Evaporative/Refueling Family	VKMXR0106J2G		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	--	0.300	0	

Evaporative/Refueling Family		VKMXR0106J2G		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		--		0.300		0	

Certification Summary Information Report

Test Group		VKMXT01.6J2T		Evaporative/Refueling Family		VKMXR0106J2G	
Evaporative/Refueling Family		VKMXR0106J2G		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	--	0.300	0		
Evaporative/Refueling Family		VKMXR0106J2G		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		VKMXR0106J2G		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		VKMXR0106J2G		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		VKMXR0106J2G		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		

Certification Summary Information Report

Test Group		VKMXT01.6J2T		Evaporative/Refueling Family		VKMXR0106J2G	
Evaporative/Refueling Family		VKMXR0106J2G		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		VKMXR0106J2G		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		VKMXR0106J2G		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		

Certification Summary Information Report

Test Group		VKMXT01.6J2T	Evaporative/Refueling Family	VKMXR0106J2G
Glossary				
Useful Life				
4	4,000 miles	120	120,000 miles	
50	50,000 miles	150	150,000 miles	
100	100,000 miles			
Emission Name				
HC-TOTAL	Total Hydrocarbon	COMB-CREE	Combined Carbon-Related Exhaust Emissions	
CO	Carbon Monoxide	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions	
CO2	Carbon dioxide	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only	
CREE	Carbon-Related Exhaust Emissions	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only	
OPT-CREE	Optional Carbon-Related Exhaust Emissions	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only	
NOX	Nitrogen Oxide	LEAK-DIA	Effective Leak Diameter (inches)	
PM	Particulate Matter	LEAK-GAS CAP	Gas Cap Leakage (cc/min)	
PM-COMP	SFTP Composite Particulate Matter	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only	
HC-NM	Non-methane Hydrocarbon	KW-HRS	Integrated DC KW-HRS	
OMHCE	Organic material Hydrocarbon Equivalent	CH4 BAG 1	Bag 1 Methane	
OMNMHCE	Organic material non-methane HC equivalent	CH4 BAG 2	Bag 2 Methane	
NMOG	Non-methane organic gases	CH4 BAG 3	Bag 3 Methane	
HCHO	Formaldehyde	CH4 BAG 4	Bag 4 Methane	
H3C2HO	Acetaldehyde	CO BAG 1	Bag 1 Carbon Monoxide	
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	CO BAG 2	Bag 2 Carbon Monoxide	
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	CO BAG 3	Bag 3 Carbon Monoxide	
CO-COMP	SFTP Composite Carbon Monoxide	CO BAG 4	Bag 4 Carbon Monoxide	
ETHANOL	C2H5OH - Ethanol	NMOG BAG 1	Bag 1 Non-methane organic gases	
FE BAG 1	Bag 1 Fuel Economy	NMOG BAG 2	Bag 2 Non-methane organic gases	
FE BAG 2	Bag 2 Fuel Economy	NMOG BAG 3	Bag 3 Non-methane organic gases	
FE BAG 3	Bag 3 Fuel Economy	NMOG BAG 4	Bag 4 Non-methane organic gases	
FE BAG 4	Bag 4 Fuel Economy	ACT-DISTANCE BAG 1	Bag 1 Actual Distance	
MFR FE	Manufacturer Fuel Economy	ACT-DISTANCE BAG 2	Bag 2 Actual Distance	
HC	Hydrocarbon for Running Loss and ORVR	ACT-DISTANCE BAG 3	Bag 3 Actual Distance	
METHANE	CH4 - Methane	ACT-DISTANCE BAG 4	Bag 4 Actual Distance	
METHANOL	CH3OH - Methanol	HC-TOTAL BAG 1	Bag 1 Total Hydrocarbon	
N2O	Nitrous Oxide	HC-TOTAL BAG 2	Bag 2 Total Hydrocarbon	
SPITBACK	Spitback Hydrocarbon in grams	HC-TOTAL BAG 3	Bag 3 Total Hydrocarbon	
AMP-HRS	Integrated Amp-hours	HC-TOTAL BAG 4	Bag 4 Total Hydrocarbon	
START-SOC	System Start State of Charge Watt-hours	WATT-HRS BAG 1	Bag 1 Watt Hours	
END-SOC	System End State of Charge Watt-hours	WATT-HRS BAG 2	Bag 2 Watt Hours	

Certification Summary Information Report

Test Group		VKMXT01.6J2T	Evaporative/Refueling Family		VKMXR0106J2G
ACT-DISTANCE	Actual Distance Driven (miles)		WATT-HRS BAG 3	Bag 3 Watt Hours	
AS-VOLT	Average System Voltage		WATT-HRS BAG 4	Bag 4 Watt Hours	
CO2 BAG 1	Bag 1 Carbon Dioxide		WATT-HRS	Watt Hours	
CO2 BAG 2	Bag 2 Carbon Dioxide		HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon	
CO2 BAG 3	Bag 3 Carbon Dioxide		HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon	
CO2 BAG 4	Bag 4 Carbon Dioxide		HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon	
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides		HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon	
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides		N2O BAG 1	Bag 1 Nitrous Oxide	
DT-IWRR	Drive Trace Inertia Work Ratio Rating		N2O BAG 2	Bag 2 Nitrous Oxide	
DT-ASCR	Drive Trace Absolute Speed Change Rating		N2O BAG 3	Bag 3 Nitrous Oxide	
DT-EER	Drive Trace Energy Economy Rating		N2O BAG 4	Bag 4 Nitrous Oxide	
Certification Region					
CA	California + CAA Section 177 states		FA	Federal	
Exhaust Emission Standard Level					
B1	Federal Tier 2 Bin 1		HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
B2	Federal Tier 2 Bin 2		HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
B3	Federal Tier 2 Bin 3		HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
B4	Federal Tier 2 Bin 4		HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
B5	Federal Tier 2 Bin 5		HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
B6	Federal Tier 2 Bin 6		HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
B7	Federal Tier 2 Bin 7		HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
B8	Federal Tier 2 Bin 8		HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
B9	Federal Tier 2 Bin 9		HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
B10	Federal Tier 2 Bin 10		HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
B11	Federal Tier 2 Bin 11		HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)		HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)		HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
L2	California LEV-II LEV		L4SULEV100	California LEV-IV SULEV100	
L2OP	California LEV-II LEV Optional		L4SULEV125	California LEV-IV SULEV125	
U2	California LEV-II ULEV		L4SULEV15	California LEV-IV SULEV15	
S2	California LEV-II SULEV		L4SULEV150	California LEV-IV SULEV150	
ZEV	California ZEV		L4SULEV170	California LEV-IV SULEV170	
OT	Other		L4SULEV175	California LEV-IV SULEV175	
T1	Federal Tier 1		L4SULEV20	California LEV-IV SULEV20	
PZEV	California PZEV		L4SULEV200	California LEV-IV SULEV200	
L2LEV160	California LEV-II LEV160		L4SULEV230	California LEV-IV SULEV230	
L2ULEV125	California LEV-II ULEV125		L4SULEV25	California LEV-IV SULEV25	
L2SULEV30	California LEV-II SULEV30		L4SULEV30	California LEV-IV SULEV30	
L2LEV395	California LEV-II LEV395		L4SULEV75	California LEV-IV SULEV75	

Certification Summary Information Report

Test Group		VKMXT01.6J2T	Evaporative/Refueling Family		VKMXR0106J2G
L2ULEV340	California LEV-II ULEV340		L4SULEV85	California LEV-IV SULEV85	
L2LEV630	California LEV-II LEV630		L4ULEV125	California LEV-IV ULEV125	
L2ULEV570	California LEV-II ULEV570		L4ULEV200	California LEV-IV ULEV200	
L3LEV160	California LEV-III LEV160		L4ULEV250	California LEV-IV ULEV250	
L3ULEV125	California LEV-III ULEV125		L4ULEV270	California LEV-IV ULEV270	
L3ULEV70	California LEV-III ULEV70		L4ULEV40	California LEV-IV ULEV40	
L3ULEV50	California LEV-III ULEV50		L4ULEV400	California LEV-IV ULEV400	
L3SULEV30	California LEV-III SULEV30		L4ULEV50	California LEV-IV ULEV50	
L3SULEV20	California LEV-III SULEV20		L4ULEV60	California LEV-IV ULEV60	
L3LEV395	California LEV-III LEV395		L4ULEV70	California LEV-IV ULEV70	
L3ULEV340	California LEV-III ULEV340		T4B170	Federal Tier 4 MDV Bin 170	
L3ULEV250	California LEV-III ULEV250		T4B150	Federal Tier 4 MDV Bin 150	
L3ULEV200	California LEV-III ULEV200		T4B125	Federal Tier 4 MDV Bin 125	
L3SULEV170	California LEV-III SULEV170		T4B100	Federal Tier 4 MDV Bin 100	
L3SULEV150	California LEV-III SULEV150		T4B85	Federal Tier 4 MDV Bin 85	
L3LEV630	California LEV-III LEV630		T4B75	Federal Tier 4 MDV Bin 75	
L3ULEV570	California LEV-III ULEV570		T4B70	Federal Tier 4 Bin 70	
L3ULEV400	California LEV-III ULEV400		T4B65	Federal Tier 4 Bin 65	
L3ULEV270	California LEV-III ULEV270		T4B60	Federal Tier 4 Bin 60	
L3SULEV230	California LEV-III SULEV230		T4B55	Federal Tier 4 Bin 55	
L3SULEV200	California LEV-III SULEV200		T4B50	Federal Tier 4 Bin 50	
T3B160	Federal Tier 3 Bin 160		T4B45	Federal Tier 4 Bin 45	
T3B125	Federal Tier 3 Bin 125		T4B40	Federal Tier 4 Bin 40	
T3B110	Federal Tier 3 Transitional Bin 110		T4B35	Federal Tier 4 Bin 35	
T3B85	Federal Tier 3 Transitional Bin 85		T4B30	Federal Tier 4 Bin 30	
T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover		T4B25	Federal Tier 4 Bin 25	
T3B70	Federal Tier 3 Bin 70		T4B20	Federal Tier 4 Bin 20	
T3B50	Federal Tier 3 Bin 50		T4B15	Federal Tier 4 Bin 15	
T3B30	Federal Tier 3 Bin 30		T4B10	Federal Tier 4 Bin 10	
T3B20	Federal Tier 3 Bin 20		T4B5	Federal Tier 4 Bin 5	
T3B0	Federal Tier 3 Bin 0		T4B0	Federal Tier 4 Bin 0	
HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395				
Transmission Type Code					
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual		
A	Automatic	OT	Other		
AM	Automated Manual	SA	Semi-Automatic		
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)		
Drive System Code					
4	4-Wheel Drive	P	Part-time 4-Wheel Drive		

Certification Summary Information Report

Test Group		VKMXT01.6J2T	Evaporative/Refueling Family		VKMXR0106J2G
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	