



## Application for Certification - Part 1

### Test Group (CBI)

- **Model Year:** 2027
- **Manufacturer Name:** Hyundai Motor Company
- **Test Group:** VHYXT00.0402
- **Test Group Description:** Battery Electric Vehicle
- **Durability Group:** VHYXEEENN402
- **Durability Group Description:** N/A
- **Vehicle Class:** LDT4
- **Applicable Standards:** FED: Tier-4 Bin 0  
CAL: ACC2 ZEV
- **Vehicles Tested:** ME1-AU5ESER120R/0 (USA model)  
ME1-KU5ESER061R/0 (CANADA model)
- **Carlines Covered by Certificate:** Ioniq 9 RWD
- **EPA Response Requested by:** March 31, 2026
- **For Questions, Contact:** Stephanie Wright  
734-273-1904  
E-mail: [swright@hatci.com](mailto: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 : VHYXT00.0402
2. Engine Type : Motor
3. Fuel Used : Electricity
4. Battery Capacity(s) : 180.9 Ah
5. Battery Chemistry(s) : NCM\*1
6. Battery Duty Cycle Usage(s) : 10 years / 200,000 km
7. Battery Manufacturer : Hyundai Mobis (SKON Chem.)
8. Battery Construction : 42 modules (504 cells in total)
9. Battery Self-Discharge Information : < 5% @ SOC 65%, RT for 6months
10. Description of the Thermal Management System : Coolant cooling system
11. Battery Disposal Plan : See Common Section 02.00

(Note) \*1 : Nickel Cobalt Manganese

## 02.01 List of Vehicles in Durability Groups

Please refer to Common Section 02.01.

**02.02 Catalyst Information : Not Applicable**

**03.00 Evaporative/Refueling Family Description: Not Applicable**

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1  
Issued : 01-31-2026  
Revised:

**04.00 Durability Procedure Description: Not Applicable**

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1  
Issued : 01-31-2026  
Revised:

## 05.00 Test Group Description

Test Group Name : VHYXT00.0402

Vehicle Class(s) Covered : FED – LDT4  
CAL – PC

Sales Location/Emission Standard : FED - Tier-4 Bin 0  
CAL - ACC2 ZEV  
See CSI report for emission standard levels

## **06.00 Test Vehicle Description**

Durability Data Vehicle: Not Applicable

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 GHG CREE In-Use Emission Standard

Items		T/M	Fixed Single Speed
ETW			6000
Tire			255/60R19 (Kumho)
Single Roll	Elec. Dyno. Target Coefficient	A	32.786
		B	0.30509
		C	0.022655
GHG CREE Cert. data (120K) (Sub-Configuration)			0
GHG CREE In-use Emission Standard (Sub-Configuration)			0.0
Tested Driver Select Shift / Multimode			Normal
SIL Equipped (Apply weight factor)			N/A
Optional CREE			N/A
Engine Code Equivalency			N/A
ADFE			N/A

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1

Issued : 01-31-2026

Revised:

**08.00 Emission Compliance Statement: Not Applicable**

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1  
Issued : 01-31-2026  
Revised:

## **09.00 OBD System Description**

Battery electric vehicles are exempt from OBD requirements because they do not use emission control systems and/or components.

**10.00 Description of Alternate-Fueled Vehicles: Not Applicable**

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1  
Issued : 01-31-2026  
Revised:

**11.00 AECD Description: Not Applicable**

VHYXT00.0402– Hyundai Ioniq 9 RWD – Part 1  
Issued : 01-31-2026  
Revised:

## 12.00 Description of Vehicles Covered by Certificate and Test Parameters

### 12.01 Vehicle Parameters

Carline		360
Model Name		Ioniq 9 RWD
Vehicle Classification		LDT4
Emission Control System Description		N/A
Engine Code (Motor)		EM16
Number of Valves Per Cylinder		N/A
Engine Displacement (L)		N/A
Sales Area		50-State
Transmission and Overdrive		Fixed Single Speed
SIL		N/A
Tire Size		255/60R19 (Kumho)
N/V Ratios		146.7
ETW(lb)		6000
Elec. Dyno. Target Coefficient	A	Please refer to 12.02.01.
	B	
	C	
Motor	Type	PMSM*1
	Max. Power (kW)	160kW (rear motor)
Battery	Type	Lithium ion
	Rated Voltage (V)	610
	Weight (kg)	625.4

(Note) \*1 : Permanent Magnet Synchronous Motor

## 12.02 Test Parameters

### 12.02.01 Test Parameters

Items		T/M	Fixed Single Speed
Model		Ioniq 9 RWD	
ETW		6000	
Tire		255/60R19 (Kumho)	
Single Roll	Elec. Dyno. Target Coefficient	A	32.786
		B	0.30509
		C	0.022655
Shift Schedule IDs		N/A	
Evap. Code		N/A	
Canister Loading	Flow Rate(g/hr)	N/A	
	Capacity (g)	N/A	
Running Loss Fuel Tank Temp.		N/A	
Transmission Test Mode(s)		Normal	
Advanced Technology System Test Mode(s)		N/A	

## **12.02.02 Engine Starting Procedures**

Please refer to Common Section 12.02.02.

## **12.02.03 Shift Schedules: Not Applicable**

## **12.02.04 Transmission / Advanced Technology System Test Modes**

Please refer to Common Section 12.02.04.

## **12.02.05 Running Loss Fuel Tank Temperature Profile: Not Applicable**

## **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  
VHYXT00.0402 / Evaporative Family N/A

Dear Ms. Kathryn Kochunas:

Hyundai Motor Company requests that EPA issue a Certificate of Conformity for the test group subjected above.

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

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

If you have any questions in regard to the Certificate of Conformity do not hesitate to contact Stephanie Wright at [swright@hatci.com](mailto:swright@hatci.com) or (734) 273-1904.

Sincerely,

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

C. H. Ji  
General Manager  
Regulation & Certification Team2  
Hyundai Motor Company

VHYXV00.0300 - Hyundai GV60 RWD- Part 1  
Issued : 01-15-2026  
Revised:



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

Subject: Request for Executive Order for 2027 Model Year Test Group  
VHYXT00.0402 / Evaporative Family N/A

Dear Ms. Robin U. Lang:

Hyundai Motor Company 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 in regard to the Executive Order do not hesitate to contact Stephanie Wright at [swright@hatci.com](mailto:swright@hatci.com) or (734) 273-1904.

Sincerely,

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


C. H. Ji  
General Manager  
Regulation & Certification Team2  
Hyundai Motor Company

VHYXV00.0300 - Hyundai GV60 RWD– Part 1  
Issued : 01-15-2026  
Revised:

**15.00 Other Information**

**15.01 Certification Fee Filing Form**

**15.02 Vehicle Emission Control Information (VECI) Label**

	<b>HYUNDAI MOTOR COMPANY</b>	
<b>VEHICLE EMISSION CONTROL INFORMATION</b>		
<b>Conforms to regulations:</b>		<b>2027 MY</b>
<b>U.S.EPA: T4B0 LDT</b>	<b>OBD: N/A</b>	<b>Fuel: Electricity</b>
<b>California: ZEV PC</b>	<b>OBD: N/A</b>	<b>Fuel: Electricity</b>
<b>No adjustments needed.</b>	<b>This vehicle is certified to operate on electricity.</b>	
<b>Group: VHYXT00.0402</b> <b>Evap.: N/A</b>		<b>32410-1XFD4</b>

**15.03 ORVR Safety Statement: Not Applicable**

**15.04 New Technology System Description**

Please refer to Common Section 15.04.

**15.05 Engine Oil Information : Not Applicable**

**16.00 California ARB Information**

**16.01 Exhaust Emission Control System (Tune-up label)**

Test Group Name	Model	Exhaust Emission Control System
VHYXT00.0402	Ioniq 9 RWD	N/A

**16.02 Test Procedures**

Please refer to Common Section 16.02.03

**16.03 Fill Pipe Access Zones Statement and Specifications: Not Applicable**

## **16.04 Request for Certification**

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 Emission Testing Waiver Statement : Not Applicable**

**16.06 Projected Sales**

Please refer to Common Section 13.00.

**16.07 OBD-II System Description : Not Applicable**

**16.08 New Technology System Description**

Please refer to Common Section 15.04

**16.09 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-KIA complies Environmental Performance Label requirement by affixing the Federal Fuel Economy and Environment Label in accordance to 40 CFR Parts 85, 86, and 600 as promulgated on July 6, 2011.

**16.10 AECD General Statements: Not Applicable**

**16.11 California Warranty Compliance**

Please refer to Common Section 16.11.00.

## 16.12 Description of the Propulsion System

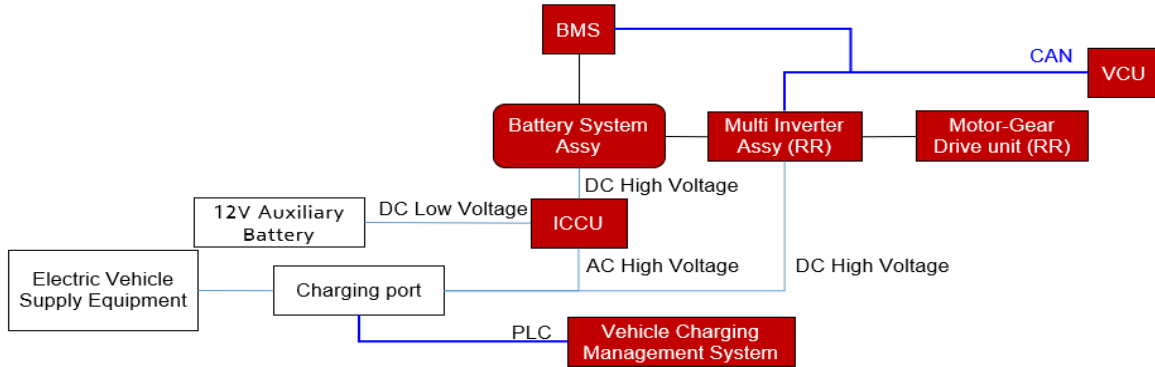
This electric vehicle uses electric motor(s) for propulsion.

### 1) Motor Specification

Motor	Type	PMSM <sup>*1</sup>
	Max. Power (kW)	160 (rear motor)

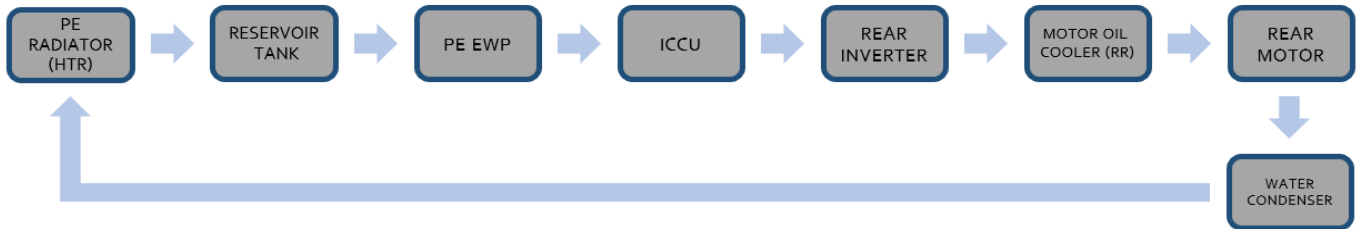
(Note) <sup>\*1</sup> : Permanent Magnet Synchronous Motor

### 2) Propulsion System Diagram

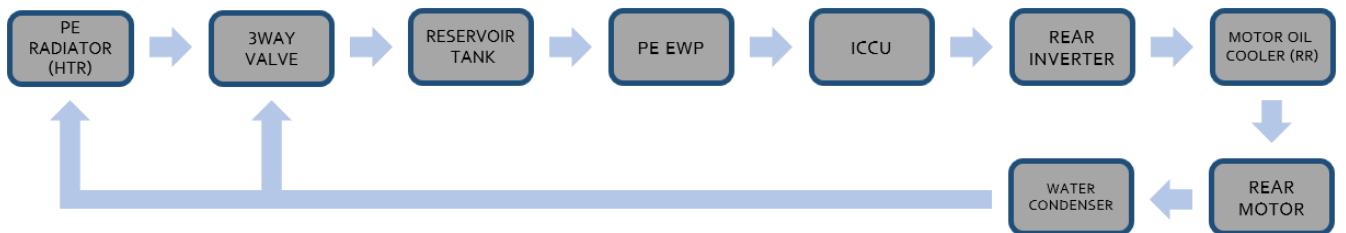


### 3) Propulsion System Heating Diagram

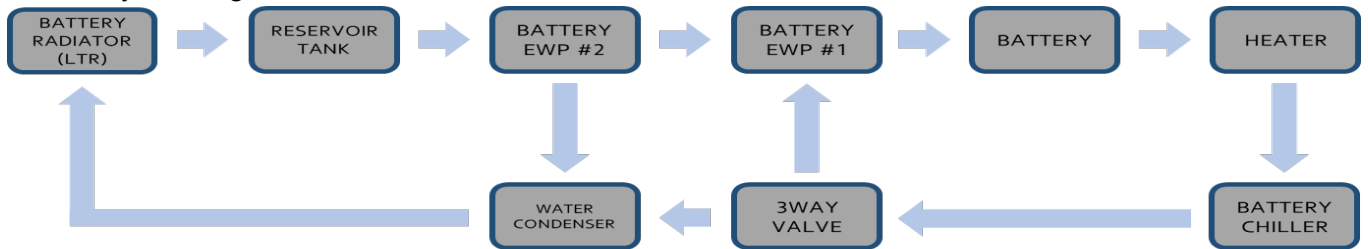
- Non Heat Pump



- Heat Pump



- Battery Cooling



THYXV00.0400– Hyundai Ioniq 9 Performance AWD – Part 1

Issued : 01-31-2026

Revised:

### 16.12.01 Description of the Energy Storage System

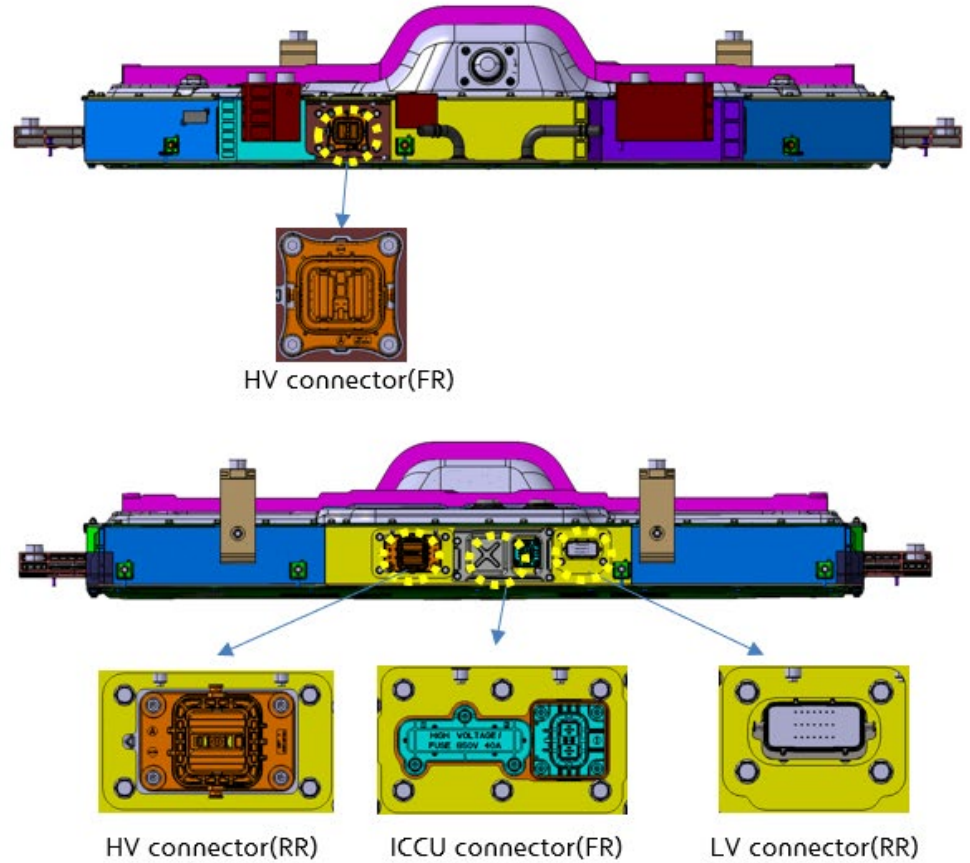
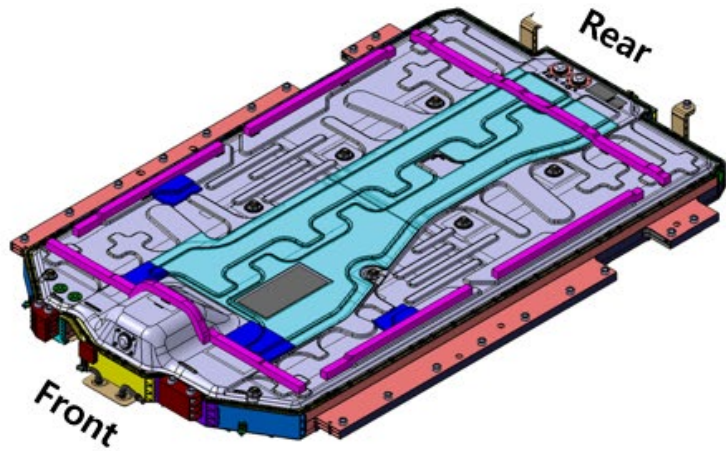
This electric vehicle uses a battery to store electrical energy.

#### 1) Battery Specification

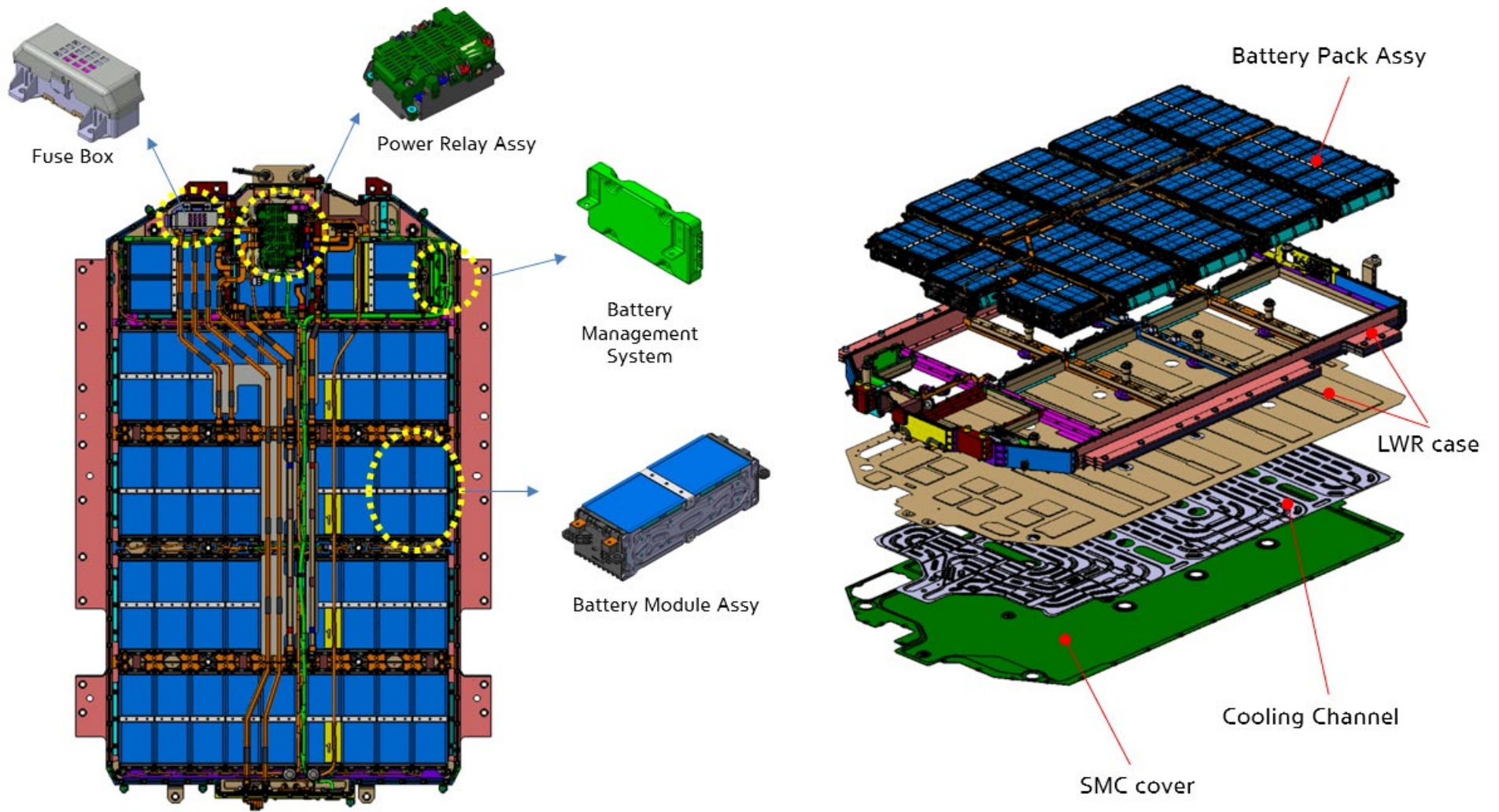
Battery	Type	Lithium ion
	Rated Voltage (V)	610
	Weight (kg)	625.4

For details, please refer to 02.00.

## 2) Battery Pack Layout



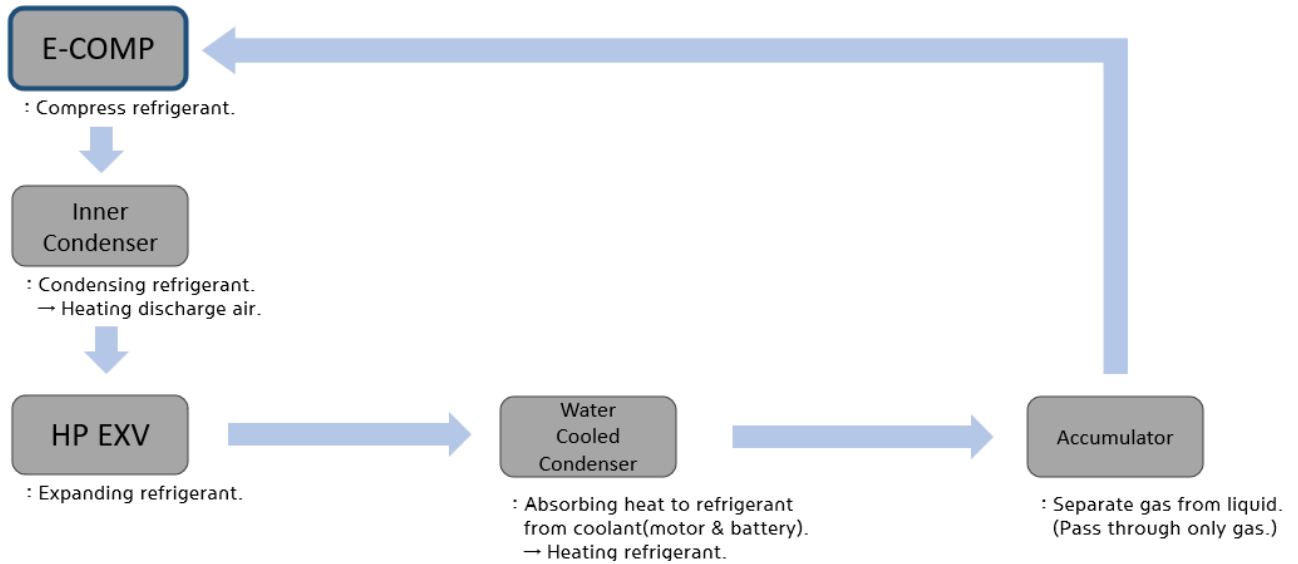
THYXV00.0400– Hyundai Ioniq 9 Performance AWD – Part 1  
Issued : 01-31-2026  
Revised :



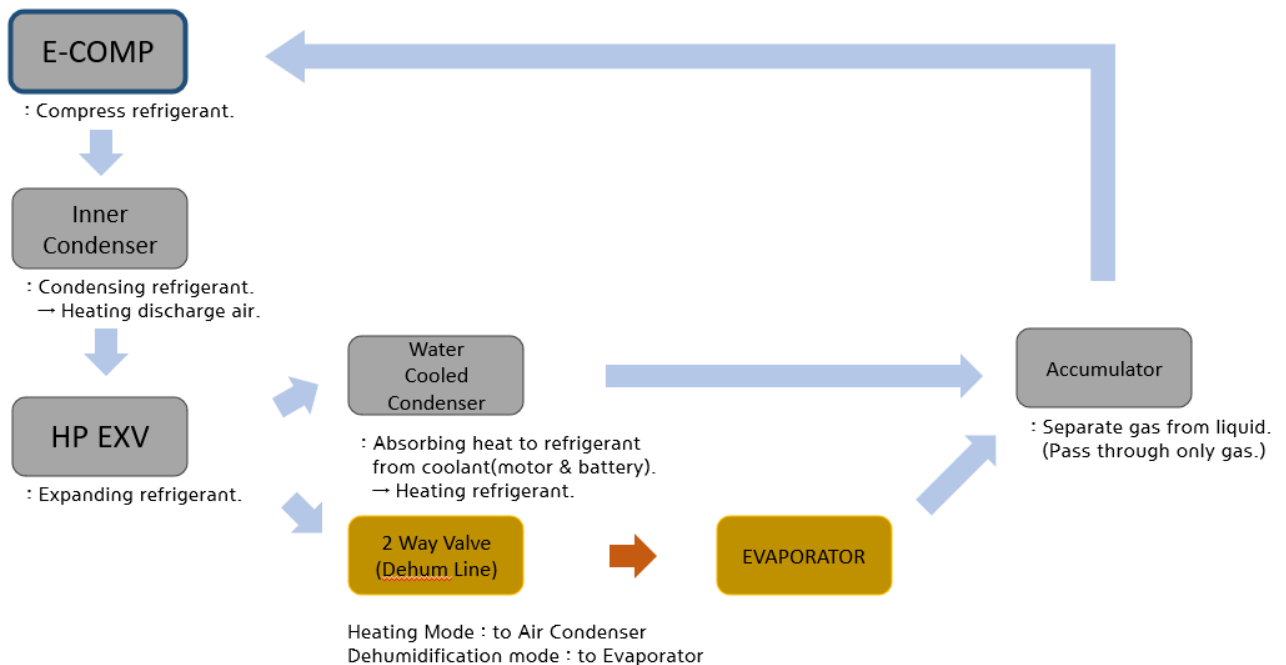
THYXV00.0400– Hyundai Ioniq 9 Performance AWD – Part 1  
 Issued : 01-31-2026  
 Revised:

## 16.12.02 Description of the Climate Control System <Schematic Layout of Heating System (Heat pump type)>

### 1) Only Heating Mode

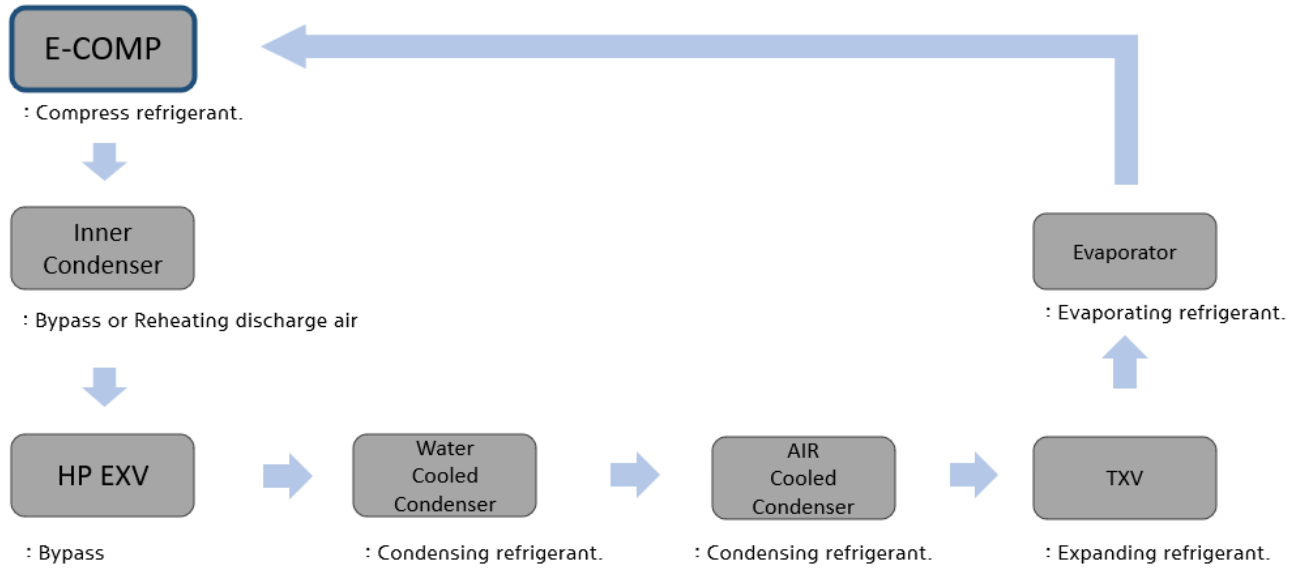


### 2) Heating + Dehumidification Mode



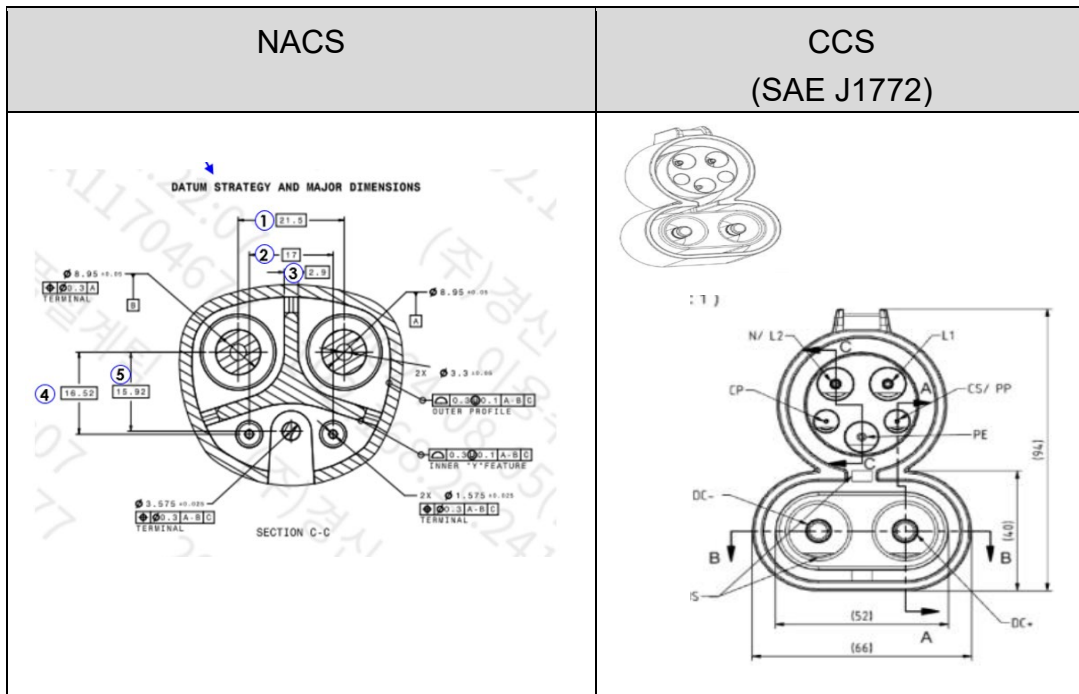
## <Schematic Layout of Heating System (Non-Heat Pump Type)>

### 1) Dehumidification Mode



## 16.12.03 Description of the Charging System

1. Onboard charger capability : 11.5kW
2. Maximum allowable direct current fast charge capability : 341A
3. Vehicle connector specification :



This electric vehicle uses an NACS type charger.

For vehicles supplied with NACS type chargers, an adapter(s) will be provided to comply with section 1962.3.

4. A charging cord will be provided pursuant to CCR, title 13, section 1962.3.

- Make of charging cord : Kyungshin Corporation

Requirements		Specification
Length of the cord	Minimum of 20 feet in length	20.37 ft.
Dual amperage capability	AC Level 1 – Minimum 12A	Selectable(6A, 8A, 10A, 12A)
	AC Level 2 – Minimum 24A or sufficient power to enable charging from a state of discharge to a full charge in less than 4 hours, whichever is lower	Selectable(16A, 20A, 24A, 30A)
	Configurable, Without the use of tools, to facilitate a plug connection for Level 1 and 2	Cords can be changed without the use of tools.
Downgrade the amperage during charging	AC Level 1 – Selectable to charge at 12A or 8A	Selectable(6A, 8A, 10A, 12A)
	AC Level 2 – Selectable to charge at 24A or 16A	Selectable(16A, 20A, 24A, 30A)
	User selection feature is integrated into the cord or in the vehicle itself	Integrated into the cord
Tested and listed by a NRTL, (UL)2594		Certificate Number: 80231735 <b>(see attachment below)</b>

- Make of charging cord : Webasto Charging Systems Inc. dba Ampure

Requirements		Specification
Length of the cord	Minimum of 20 feet in length	20 ft.
Dual amperage capability	AC Level 1 – Minimum 12A	Yes. (12A)
	AC Level 2 – Minimum 24A or sufficient power to enable charging from a state of discharge to a full charge in less than 4 hours, whichever is lower	Yes. (24A)
	Configurable, Without the use of tools, to facilitate a plug connection for Level 1 and 2	Cords can be changed without the use of tools.
Downgrade the amperage during charging	AC Level 1 – Selectable to charge at 12A or 8A	8A and 12A plugs are provided separately.
	AC Level 2 – Selectable to charge at 24A or 16A	16A and 24A plugs are provided separately.
	User selection feature is integrated into the cord or in the vehicle itself	AC Level 1 and 2 cords can be changed without the use of tools.
Tested and listed by a NRTL, (UL)2594		Certificate Number: UL-US-2347109-3 (see attachment below)



# Certificate of Compliance

**Certificate:** 80231735

**Master Contract:** 301412

**Project:** 80231735

**Date Issued:** November 4, 2025

**Issued To:** Kyungshin Corporation  
98, Gaetbeol-ro  
Yeonsu-gu, Incheon, 21999  
South Korea

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



**Issued by:** *Wayne Wang*  
Wayne Wang

**PRODUCTS**

CLASS - C531112 - POWER SUPPLIES Systems Equipment for Electric Vehicles

CLASS - C531192 - POWER SUPPLIES Electric Vehicle Chargers/Systems - Certified to US Standards

Electric Vehicle Supply Equipment (EVSE)				
Model (function box):	91996-XAAB0		91996-XAAG0	
Model (Adapter/Cord set):	HC-EVUX	HC-EVU2X	HC-EVUX	HC-EVU2X
NEMA Plug Config. For Adapte:	5-15P	14-50P	5-15P	14-50P
Nominal Input / Output voltage (Vac):	120 Vac	240 Vac	120 Vac	240 Vac
Nominal input frequency (Hz):	60 Hz			
Max. continuous input/output current (A):	12 A	30 A	12 A	30 A



**Certificate:** 80231735  
**Project:** 80231735

**Master Contract:** 301412  
**Date Issued:** November 4, 2025

Max. continuous input/output power (kW):	1.44 kW	7.2 kW	1.44 kW	7.2 kW
Supported Charging connector Types:	J1772	J1772	NACS	NACS
Length of EV cable (m):	Max. 6.1 m			
Overcurrent protection associated with the branch circuit for field installation	15 A, 2P	37.5 A, 2P	15 A, 2P	37.5 A, 2P
Operating ambient temperatures:	-40 °C to +50 °C			
Enclosure type:	Type 6			
*Note:				
1. This product is in same family with the models listed on 91996-GI020. Report number 80061004. The components and construction are similar if not specified.				

**APPLICABLE REQUIREMENTS**

*UL 2594	-	Electric Vehicle Supply Equipment (Third Edition, Dated December 15, 2022)
*CSA C22.2 No. 280-22	-	Electric vehicle supply equipment
*Note:		
(1)	Conformity to UL 2594 (Third Edition, Dated December 15, 2022), includes compliance with applicable requirements of UL 2231-1 (Second Edition, Dated September 16, 2021) and UL 2231-2 (Second Edition, Dated December 15, 2020);	
(2)	Conformity to CSA C22.2 No. 280-22, includes compliance with applicable requirements of CSA C22.2 No. 281.1-12 (reaffirmed 2022) and CSA C22.2 No. 281.2-12 (reaffirmed 2017);	
(3)	The functional safety has been evaluated according to applicable requirements of UL 1998 (Edition 3), UL 991 (Edition 3) and CSA C22.2 No. 0.8:19 as required by the end product standards.	

Notes:

Products certified under Class C531112 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). <a href="http://www.scc.ca">www.scc.ca</a>	
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## *Supplement to Certificate of Compliance*

**Certificate:** 80231735

**Master Contract:** 301412

*The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.*

### **Product Certification History**

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<b>Project</b>	<b>Date</b>	<b>Description</b>
80231735	November 4, 2025	Original cCSAus Certification. Electric Vehicle Supply Equipment, cord set, intended for indoor or outdoor use, Model: 91996-XAAG0 and 91996-XAAB0 (Two models are the same except for the type of supported charging connector.) APT Qualification Assessed

# Certificate of Compliance

**Certificate Number:**

UL-US-2347109-3

**Report Reference:**

E336193-20231206

**Issue Date:**

2024-09-09

Issued to:

**Webasto Charging Systems Inc. dba Ampure  
1333 S Mayflower Ave, Suite 100 Monrovia, CA 91016  
United States**

This certificate confirms that representative samples of:  
**FFWA - Electric Vehicle Supply Equipment**

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

**UL 2594, 3rd Ed., Issue Date: 2022-12-15**

Additional Information:

See UL Product iQ® at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



A handwritten signature in black ink that reads 'David Picuch'.

David Picuch  
UL Mark Certification Program Owner

## 16.13 ZEV Compliance

Subconfiguration	Certification Range Value (Combined, unadjusted)	ZEV value
Ioniq 9 RWD	502.846 mi	1.00

### 16.13.01 Battery Specific Energy

Total Battery System Specific Energy Density (Whr/Kg)

= Total Battery System Voltage \* C/3 discharge rate / Total Weight of Battery System

= 610 (V) \* 180.9 (Ah) / 625.4 (Kg)

= **176.4 (Whr/Kg)**

## 16.14 ZEV/PHEV Test Methodology and Test Results

For details of intermediate and final measured or calculated values used per the 2026+ ZEV and PHEV Test Procedures to calculate cycle specific emissions, energy consumption, and range values, Please refer to Certification Summary Information in 07.01.

### BEV:

- Test methodology used: Multi-cycle test (SAE J1634 2021 version)
- Constant speed cycle

<AWD 20inch>

	<b>CSCm</b>	<b>CSCe</b>
Speed(mph)	65	65
Time(h:m)	4:12	0:29
Distance(mi)	271.935	29.450

### 16.14.01 Vehicle, Fuel Cell, and Battery Break-in Periods Used Prior to Testing

Vehicle, fuel cell, and battery break-ins were performed on the actual vehicle in SRC mode on a dynamometer at over 2000 miles.

ME1-AU5ESER120R: 2007 miles

ME1-KU5ESER061R: 2001 miles

## 16.15.00 Battery State of Health and Usable Battery Energy

### 1. Cycle Testing Method

Cycle testing evaluates the degradation and lifespan of a battery through repeated charge and discharge processes.

1) Cycle Test : Charging and discharging to reach the mileage corresponding to the development goal under the specified test conditions. Driving distance is derived from the amount of discharge energy used(kwh) and the MPGe of the vehicle

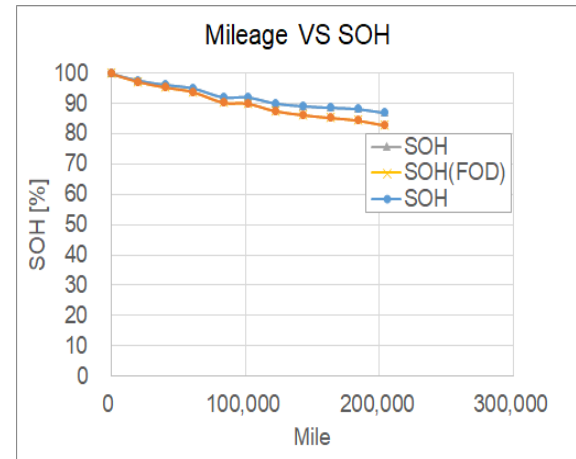
2) SOH degradation Test : Degradation calculated by measuring capacity through charging/discharging of 1/3C at each specified mileage point

#### Test Procedure

- 1) Charge and discharge the battery within a specified SOC/voltage range.
- 2) Allow a rest period after each cycle.
- 3) Periodically conduct capacity test (e.g., every 100 cycles).

### 2. Expected degradation: State of health

Mile	Year*	SOH(%) <sup>1)</sup>	UBE(kWh)	SOH(%), FOD <sup>2)</sup>	UBE(kWh) FOD
0	0.0	100.0	108.5**	100.0	108.5**
20,000	1.3	97.7		97.3	
41,000	2.7	96.2		95.4	
61,000	4.1	95.1		93.8	
84,000	5.6	92.1		90.3	
102,000	6.8	92.1		90.0	
123,000	8.2	90.0		87.5	
143,000	9.5	89.1		86.2	
164,000	10.9	88.6		85.2	
184,000	12.2	88.2		84.4	
203,000	13.6	86.9		95.8***	



\*The year converted from the mile using a factor of 1 year / 15k mile.

\*\* Certified UBE tested with the IONIQ9

\*\*\* UBE value has been calculated by using EV9 long range's UBE-SOH ratio

#### 1) SOH

Test result from IONIQ9 Battery Pack Assembly

\*The mile converted from the accumulative energy in charge/discharge cycle life test results using a factor of 138.0MPGe

Specification	RWD [19inch]
MPGe (Multi-Cycle Test)	138.0

#### 2) FOD (Features Of Demand)

THYXV00.0400– Hyundai Ioniq 9 Performance AWD – Part 1

Issued : 01-31-2026

Revised:

The SOH(FOD) values are estimated based on the standalone test result (following table) of the GV60 battery. (SOH deterioration rate due to boost = 0.21%/10,000mile)

Mile	General SOH(%)	acceleration boost SOH(%)
0	100.0	100.0
188,570	89.8	85.9

Number of acceleration boost operations: 2,193 (average of Korea's user)

### 3. Correlation between Usable Battery Energy (UBE) and State of Health (SOH)

Usable battery energy and state of health have the following correlation.

SOH(%)	UBE(kWh)
100.0	108.5*
86.9	95.8**

$$\frac{\text{Expected UBE}}{\text{Certified UBE} \times \text{SOH}} \approx 1.0165$$

This ratio has been derived from MV (EV9 long range)'s UBE test results.

## **16.16 Propulsion-related Parts and Battery Warranty**

All propulsion-related parts and batteries of Hyundai/Kia meet the warranty requirements of CCR, title 13, section 1962.8.

For details, please refer to the Warranty Booklet in the Common Section.

## 16.17 Battery Label

### 1. Label Size and Location

- PE room / Battery pack : 50 x 40 mm
- Battery module : 30 x 45 mm

### 2. Label Sample

Vehicle label (PE room)



Battery pack label

BATTERY SYSTEM ASSY



P/NO : 37501-TD840  
 C/A Type : LIMM(NMC)-C.F  
 Vehicle MFG : HYUNDAI  
 System CAPA : 110.3kWh  
 System V : 420V  
 2603



BATTERY SYSTEM ASSY



P/NO : 37501-TD850  
 C/A Type : LIMM(NMC)-C.F  
 Vehicle MFG : HYUNDAI  
 System CAPA : 110.3kWh  
 System V : 420V  
 2604




BATTERY SYSTEM ASSY



P/NO : 37501-TD830  
 C/A Type : LIMM(NMC)-C.F  
 Vehicle MFG : HYUNDAI  
 System CAPA : 110.3kWh  
 System V : 420V  
 2609








Battery module label








P/NO : 37512-TD820  
 C/A Type : LIMM(NMC)-C.F  
 Module MFG : HYUNDAI  
 MOBIS  
 Cell CAPA/V : 0.219kWh / 2.5V  
 Module CAPA/V : 2.628kWh /  
 10V  
 2506

TD375-12820  
 37512-TD820


P/NO : 37512-TD820  
 C/A Type : LIMM(NMC)-C.F  
 Module MFG : HYUNDAI  
 MOBIS  
 Cell CAPA/V : 0.219kWh / 2.5V  
 Module CAPA/V : 2.628kWh /  
 10V  
 2506



TD375-12820  
 37512-TD820

P/NO : 37512-TD830  
 C/A Type : LIMM(NMC)-C.F  
 Module MFG : HYUNDAI  
 MOBIS  
 Cell CAPA/V : 0.219kWh / 2.5V  
 Module CAPA/V : 2.628kWh /  
 10V  
 2506

TD375-12830  
 37512-TD830



## **16.18 Instructions and Information Provided to the Vehicle Owners**

Please refer to Common Section 16.18.00

## **16.19 Data Standardization Requirements (ZEV only)**

Please refer to Common Section 16.19.00

## **16.20 Communication Protocol to an Off-board Tool (ZEV only)**

For communication of the required standardized data to an off-board tool, per CCR, title 13, section 1962.5., UDSONCAN protocol is used to report all required messages. .

## **17.00 Service of Process**

Please refer to Common Section 01.00.

## **18.00.00 Attachment**

1. CSI Report



### Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402	<b>Evaporative/Refueling Family</b>	--
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**Models Covered by this Certificate**

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Hyundai Motor Company	1 - HYUNDAI MOTOR COMPANY	360 - Ioniq 9 RWD	Federal	2-Wheel Drive, Rear	Automatic	1	No
Hyundai Motor Company	1 - HYUNDAI MOTOR COMPANY	360 - Ioniq 9 RWD	California + CAA Section 177 states	2-Wheel Drive, Rear	Automatic	1	No

**Engine Description**

Hybrid Type	--	Hybrid Description	--
Engine Type	--	Mfr Engine Description	--
Engine Block Arrangement	--	Mfr Engine Block Arrangement Description	--
Camless Valvetrain Indicator	--	Oil Viscosity/Classification	
Number of Cylinders/Rotors	--	Mechanically Variable Compression Ratio Indicator	--

**After Treatment Device(s) (ATD)**

Mfr After Treatment Device (ATD) Comments	--
Direct Ozone Reduction (DOR) Device	--
Mfr Emission Control Device Comments	--

**Official Test Numbers**

Test Group	Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity		--	--	--	--	--	--	--	--	--	--

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
<b>Hybrid Electric Vehicle And Fuel Cell Information</b>			
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	610	Battery Energy Capacity	180.9
Battery Specific Energy	176.4	Battery Charger Type	Both
Number of Capacitors	--	Capacitor Rating (In Farads)	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Rear 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	160
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	Usable H2 Fill Capacity (kg)	--
Mfr Hybrid Electric/ Electric Vehicle Comments	PMSM : Permanent Magnet Synchronous Motor		

## Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402		<b>Evaporative/Refueling Family</b>	--							
<b>Emission Data Vehicle Information</b>											
<b>Vehicle ID / Configuration</b>	ME1-AU5ESER120R / 0		<b>Manufacturer Vehicle Configuration Number</b>	0							
<b>Original Test Group Name</b>	THYXV00.0402		<b>Original Evaporative/Refueling Family</b>	--							
<b>Original Test Vehicle Model Year</b>	2026										
<b>Vehicle Model</b>											
<b>Represented Test Vehicle Make</b>	Hyundai		<b>Represented Test Vehicle Model</b>	Ioniq 9 RWD							
<b>Leak Family Details</b>											
<b>Leak Family Identifier</b>	--		<b>Leak Family Name</b>	--							
<b>Drive Sources and Fuel System Details</b>											
<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> </tbody> </table>						Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity
Drive Source and Fuel#	Drive Source	Fuel									
1	Electric Motor	Electricity									
<b>Hybrid Indicator</b>	No		<b>Multiple Fuel Combustion</b>	--							
<b>Multiple Fuel Storage</b>	--		<b>Rechargeable Energy Storage System Indicator</b>	Yes							
<b>Fuel Cell Indicator</b>	No		<b>Rechargeable Energy Storage System, if 'Other'</b>	--							
<b>Rechargeable Energy Storage System</b>	Battery(s)										
<b>Off-board charge Capable Indicator</b>	Yes		<b>Odometer Correction Factor</b>	0.9973							
<b>Odometer Correction -- Initial</b>	0										
<b>Odometer Correction Sign</b>	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles										
<b>Odometer Correction Units</b>	Miles										
<b>Engine Code</b>	EM16		<b>Rated Horsepower</b>	215							
<b>Displacement (liters)</b>	0.001										
<b>Air Aspiration Method</b>	Naturally Aspirated		<b>Air Aspiration Method, if 'Other'</b>								
<b>Number of Air Aspiration Devices</b>	--		<b>Air Aspiration Device Configuration</b>	--							
<b>Charge Air Cooler Type</b>	--		<b>Drive Mode While Testing</b>	2-Wheel Drive, Rear							
<b>Shift Indicator Light Usage</b>	Not equipped		<b>Aged Emission Components</b>	4,000 (mi)							
<b>Curb Weight (lbs)</b>	5507		<b>Equivalent Test Weight (pounds)</b>	6000							
<b>GVWR (lbs)</b>	6900		<b>N/V Ratio</b>	146.7							
<b>Axle Ratio</b>	4.68										
<b>Transmission Type</b>	Automatic		<b># of Transmission Gears</b>	1							
<b>Transmission Lockup</b>	No		<b>Creeper Gear</b>	No							
<b>Dynamometer Coefficients:</b>											
<b>Target Coefficients</b>			<b>Set Coefficients</b>								
<b>Coefficient Category</b>	<b>A (lbf)</b>	<b>B (lbf/mph)</b>	<b>C (lbf/mph**2)</b>	<b>A (lbf)</b>	<b>B (lbf/mph)</b>	<b>C (lbf/mph**2)</b>	<b>EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients</b>				
<b>City/Highway/Evap</b>	32.786	0.30509	0.022655	10.994	0.20427	0.022088	14				
<b>Emission Control Device Comments</b>						--					

### Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402	<b>Evaporative/Refueling Family</b>	--
<b>Manufacturer Test Vehicle Comments</b>	Ioniq 9 Long range RWD 19in.		

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
<b>Test #</b>	<b>THYX10087866</b>	<b>Test Procedure</b>	<b>77 - Multi-Cycle Test (MCT)</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	62 - Electricity
<b>Test Date</b>	08/28/2024	<b>Fuel</b>	Electricity
<b>Fuel Batch ID</b>	--	<b>Fuel Calibration Number</b>	--
<b>Vehicle Class</b>	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	772-1, Jangduck-Dong		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	2189	<b>Odometer Units</b>	M
<b>4WD Test Dyno</b>	No	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	Yes		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>PHEV/EV Charge Depleting Test Information</b>			
<b>Recharge Event Voltage</b>	220	<b>Recharge Event Energy (kiloWatt-hours)</b>	121.119
<b>Charge Depleting Range (Calculated miles)</b>	554.878	<b>Charge Depleting Range (Actual miles)</b>	554.878
<b>Charge Depleting Range Highway (Calculated miles)</b>	439.251	<b>Derived 5-Cycle Coefficient Model Year</b>	--
<b>All Electric Range Unadjusted (miles)</b>	--	<b>Equivalent All Electric Range (miles)</b>	554.878
<b>Number of Charge Depleting Bags/Phases Conducted</b>	8	<b>Transition Bag/Phase Number</b>	--
<b>Charge Depleting Bag/Phase #1</b>			
<b>Test Result/Emission Name</b>		<b>Unrounded Test Result</b>	
Actual Distance Driven (miles)		7.442	
Carbon Monoxide		0	
Carbon-Related Exhaust Emissions		0	
Drive Trace Absolute Speed Change Rating		-1.88	
Drive Trace Energy Economy Rating		-1.96	
Drive Trace Inertia Work Ratio Rating		-1.75	
Integrated DC KW-HRS		1.5315	
Manufacturer Fuel Economy		20.579186	
<b>Charge Depleting Bag/Phase #2</b>			

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--																		
<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>10.255</td> </tr> <tr> <td>Carbon Monoxide</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>1.19</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>1.47</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>2.54533</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>24.820351</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.255	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	1.19	Drive Trace Energy Economy Rating	-0.46	Drive Trace Inertia Work Ratio Rating	1.47	Integrated DC KW-HRS	2.54533	Manufacturer Fuel Economy	24.820351
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Manufacturer Fuel Economy	24.820351																				
<b>Charge Depleting Bag/Phase #3</b>																					
<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>7.444</td> </tr> <tr> <td>Carbon Monoxide</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>-1.84</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-1.85</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>-1.62</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>1.47356</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>19.795217</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.444	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-1.84	Drive Trace Energy Economy Rating	-1.85	Drive Trace Inertia Work Ratio Rating	-1.62	Integrated DC KW-HRS	1.47356	Manufacturer Fuel Economy	19.795217
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Manufacturer Fuel Economy	19.795217																				
<b>Charge Depleting Bag/Phase #4</b>																					
<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>271.935</td> </tr> <tr> <td>Carbon Monoxide</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>0</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>0</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>0</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>88.00627</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>32.362981</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	271.935	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	0	Drive Trace Energy Economy Rating	0	Drive Trace Inertia Work Ratio Rating	0	Integrated DC KW-HRS	88.00627	Manufacturer Fuel Economy	32.362981
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Drive Trace Inertia Work Ratio Rating	0																				
Integrated DC KW-HRS	88.00627																				
Manufacturer Fuel Economy	32.362981																				
<b>Charge Depleting Bag/Phase #5</b>																					

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--																		
<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>7.444</td> </tr> <tr> <td>Carbon Monoxide</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>-1.84</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-1.81</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>-1.53</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>1.43748</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>19.310531</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.444	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-1.84	Drive Trace Energy Economy Rating	-1.81	Drive Trace Inertia Work Ratio Rating	-1.53	Integrated DC KW-HRS	1.43748	Manufacturer Fuel Economy	19.310531
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<b>Charge Depleting Bag/Phase #6</b>																					
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Manufacturer Fuel Economy	24.599519																				
<b>Charge Depleting Bag/Phase #7</b>																					
<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>7.446</td> </tr> <tr> <td>Carbon Monoxide</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>-1.91</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-1.83</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>-1.57</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>1.45442</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>19.532959</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.446	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-1.91	Drive Trace Energy Economy Rating	-1.83	Drive Trace Inertia Work Ratio Rating	-1.57	Integrated DC KW-HRS	1.45442	Manufacturer Fuel Economy	19.532959
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Integrated DC KW-HRS	1.45442																				
Manufacturer Fuel Economy	19.532959																				
<b>Charge Depleting Bag/Phase #8</b>																					

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
<b>Test Result/Emission Name</b>	<b>Unrounded Test Result</b>		
Actual Distance Driven (miles)	29.45		
Carbon Monoxide	0		
Carbon-Related Exhaust Emissions	0		
Drive Trace Absolute Speed Change Rating	12.42		
Drive Trace Energy Economy Rating	-0.38		
Drive Trace Inertia Work Ratio Rating	37.47		
Integrated DC KW-HRS	9.56734		
Manufacturer Fuel Economy	32.486733		
<b>Manufacturer Test Comments</b>	Ioniq 9 RWD 19in MCT Data over '99.99' have been set as '0' due to technical restrictions, but have actually obtained the following results: -> Charge Depleting Bag / Phase #4 DT-ASCR = 105.91, DT-IWRR = 211.82 TYPO of MFR FE phase #5 was corrected from 1.9310531 to 19.310531		

### Certification Summary Information Report

Test Group		VHYXT00.0402				Evaporative/Refueling Family					--	
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 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

### Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402	<b>Evaporative/Refueling Family</b>	--
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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 ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

### Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402	<b>Evaporative/Refueling Family</b>	--						
<b>Emission Data Vehicle Information</b>									
<b>Vehicle ID / Configuration</b>	ME1-KU5ESER061R / 0	<b>Manufacturer Vehicle Configuration Number</b>	0						
<b>Original Test Group Name</b>	THYXV00.0402	<b>Original Evaporative/Refueling Family</b>	--						
<b>Original Test Vehicle Model Year</b>	2026								
<b>Vehicle Model</b>									
<b>Represented Test Vehicle Make</b>	Hyundai	<b>Represented Test Vehicle Model</b>	Ioniq 9 RWD						
<b>Leak Family Details</b>									
<b>Leak Family Identifier</b>	--	<b>Leak Family Name</b>	--						
<b>Drive Sources and Fuel System Details</b>									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Drive Source and Fuel#</th> <th style="width: 33%;">Drive Source</th> <th style="width: 34%;">Fuel</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">Electric Motor</td> <td style="text-align: center;">Electricity</td> </tr> </tbody> </table>				Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity
Drive Source and Fuel#	Drive Source	Fuel							
1	Electric Motor	Electricity							
<b>Hybrid Indicator</b>	No	<b>Multiple Fuel Combustion</b>	--						
<b>Multiple Fuel Storage</b>	--	<b>Rechargeable Energy Storage System Indicator</b>	Yes						
<b>Fuel Cell Indicator</b>	No	<b>Rechargeable Energy Storage System, if 'Other'</b>	--						
<b>Rechargeable Energy Storage System</b>	Battery(s)								
<b>Off-board charge Capable Indicator</b>	Yes	<b>Odometer Correction Factor</b>	0.9977						
<b>Odometer Correction -- Initial</b>	0								
<b>Odometer Correction Sign</b>	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles								
<b>Odometer Correction Units</b>	Miles								
<b>Engine Code</b>	EM16	<b>Rated Horsepower</b>	215						
<b>Displacement (liters)</b>	0.001								
<b>Air Aspiration Method</b>	Naturally Aspirated	<b>Air Aspiration Method, if 'Other'</b>							
<b>Number of Air Aspiration Devices</b>	--	<b>Air Aspiration Device Configuration</b>	--						
<b>Charge Air Cooler Type</b>	--	<b>Drive Mode While Testing</b>	2-Wheel Drive, Rear						
<b>Shift Indicator Light Usage</b>	Not equipped	<b>Aged Emission Components</b>	4,000 (mi)						
<b>Curb Weight (lbs)</b>	5516	<b>Equivalent Test Weight (pounds)</b>	6000						
<b>GVWR (lbs)</b>	6900	<b>N/V Ratio</b>	146.7						
<b>Axle Ratio</b>	4.68								
<b>Transmission Type</b>	Automatic	<b># of Transmission Gears</b>	1						
<b>Transmission Lockup</b>	No	<b>Creeper Gear</b>	No						
<b>Dynamometer Coefficients:</b>									
<b>Target Coefficients</b>			<b>Set Coefficients</b>						
<b>Coefficient Category</b>	<b>A (lbf)</b>	<b>B (lbf/mph)</b>	<b>C (lbf/mph**2)</b>						
<b>City/Highway/Evap</b>	32.786	0.30509	0.022655						
	4.848	0.36228	0.020421						
			<b>EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients</b>						
			14						
<b>Emission Control Device Comments</b>	--								

### Certification Summary Information Report

<b>Test Group</b>	VHYXT00.0402	<b>Evaporative/Refueling Family</b>	--
<b>Manufacturer Test Vehicle Comments</b>	Only for CANADA market (Ioniq 9 Long range RWD 19in) Set Coefficients was corrected.		

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
<b>Test #</b>	<b>THYX10088300</b>	<b>Test Procedure</b>	<b>77 - Multi-Cycle Test (MCT)</b>
<b>Exhaust Test # for this Evap Test</b>	--	<b>Test Fuel Type</b>	62 - Electricity
<b>Test Date</b>	10/18/2024	<b>Fuel</b>	Electricity
<b>Fuel Batch ID</b>	--	<b>Fuel Calibration Number</b>	--
<b>Vehicle Class</b>	LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)	<b>DF Type</b>	Mfr. Determined
<b>Verify Test Lab ID</b>	772-1, Jangduck-Dong		
<b>E10 Evaporative Test Measurement Method</b>	--		
<b>Test Start Odometer Reading</b>	2111	<b>Odometer Units</b>	M
<b>4WD Test Dyno</b>	No	<b>Diesel Adjustment Factor Usage</b>	--
<b>State of Charge Delta</b>	Yes		
<b>Drive Cycle Speed Tolerance Criteria</b>	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	<b>Road Speed Fan Usage</b>	Yes
<b>PHEV/EV Charge Depleting Test Information</b>			
<b>Recharge Event Voltage</b>	220	<b>Recharge Event Energy (kiloWatt-hours)</b>	121.119
<b>Charge Depleting Range (Calculated miles)</b>	557.073	<b>Charge Depleting Range (Actual miles)</b>	557.073
<b>Charge Depleting Range Highway (Calculated miles)</b>	448.333	<b>Derived 5-Cycle Coefficient Model Year</b>	--
<b>All Electric Range Unadjusted (miles)</b>	--	<b>Equivalent All Electric Range (miles)</b>	557.073
<b>Number of Charge Depleting Bags/Phases Conducted</b>	8	<b>Transition Bag/Phase Number</b>	--
<b>Charge Depleting Bag/Phase #1</b>			
<b>Test Result/Emission Name</b>		<b>Unrounded Test Result</b>	
Actual Distance Driven (miles)		7.445	
Carbon Monoxide		0	
Carbon-Related Exhaust Emissions		0	
Drive Trace Absolute Speed Change Rating		-2.03	
Drive Trace Energy Economy Rating		-2.12	
Drive Trace Inertia Work Ratio Rating		-2.13	
Integrated DC KW-HRS		1.5777	
Manufacturer Fuel Economy		21.1914	
<b>Charge Depleting Bag/Phase #2</b>			

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--																		
<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>10.254</td> </tr> <tr> <td>Carbon Monoxide</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>1.01</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-0.43</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>1.19</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>2.57254</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>25.0882</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.254	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	1.01	Drive Trace Energy Economy Rating	-0.43	Drive Trace Inertia Work Ratio Rating	1.19	Integrated DC KW-HRS	2.57254	Manufacturer Fuel Economy	25.0882
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Manufacturer Fuel Economy	25.0882																				
<b>Charge Depleting Bag/Phase #3</b>																					
<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>7.445</td> </tr> <tr> <td>Carbon Monoxide</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>-2.02</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-2</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>-1.95</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>1.50145</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>20.1672</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.445	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-2.02	Drive Trace Energy Economy Rating	-2	Drive Trace Inertia Work Ratio Rating	-1.95	Integrated DC KW-HRS	1.50145	Manufacturer Fuel Economy	20.1672
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<b>Charge Depleting Bag/Phase #4</b>																					
<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>286.921</td> </tr> <tr> <td>Carbon Monoxide</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>99.99</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-0.02</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>99.99</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>92.52083</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>32.2461</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	286.921	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	99.99	Drive Trace Energy Economy Rating	-0.02	Drive Trace Inertia Work Ratio Rating	99.99	Integrated DC KW-HRS	92.52083	Manufacturer Fuel Economy	32.2461
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Integrated DC KW-HRS	92.52083																				
Manufacturer Fuel Economy	32.2461																				
<b>Charge Depleting Bag/Phase #5</b>																					

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--																		
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Manufacturer Fuel Economy	19.8646																				
<b>Charge Depleting Bag/Phase #6</b>																					
<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>10.254</td> </tr> <tr> <td>Carbon Monoxide</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>0.33</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-0.47</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>0.51</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>2.51922</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>24.5682</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	10.254	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	0.33	Drive Trace Energy Economy Rating	-0.47	Drive Trace Inertia Work Ratio Rating	0.51	Integrated DC KW-HRS	2.51922	Manufacturer Fuel Economy	24.5682
Test Result/Emission Name	Unrounded Test Result																				
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Integrated DC KW-HRS	2.51922																				
Manufacturer Fuel Economy	24.5682																				
<b>Charge Depleting Bag/Phase #7</b>																					
<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>7.444</td> </tr> <tr> <td>Carbon Monoxide</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>-2.2</td> </tr> <tr> <td>Drive Trace Energy Economy Rating</td> <td>-2.03</td> </tr> <tr> <td>Drive Trace Inertia Work Ratio Rating</td> <td>0.61</td> </tr> <tr> <td>Integrated DC KW-HRS</td> <td>1.47847</td> </tr> <tr> <td>Manufacturer Fuel Economy</td> <td>19.8612</td> </tr> </tbody> </table>				Test Result/Emission Name	Unrounded Test Result	Actual Distance Driven (miles)	7.444	Carbon Monoxide	0	Carbon-Related Exhaust Emissions	0	Drive Trace Absolute Speed Change Rating	-2.2	Drive Trace Energy Economy Rating	-2.03	Drive Trace Inertia Work Ratio Rating	0.61	Integrated DC KW-HRS	1.47847	Manufacturer Fuel Economy	19.8612
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Integrated DC KW-HRS	1.47847																				
Manufacturer Fuel Economy	19.8612																				
<b>Charge Depleting Bag/Phase #8</b>																					

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
	<b>Test Result/Emission Name</b>	<b>Unrounded Test Result</b>	
	Actual Distance Driven (miles)	23.768	
	Carbon Monoxide	0	
	Carbon-Related Exhaust Emissions	0	
	Drive Trace Absolute Speed Change Rating	16.12	
	Drive Trace Energy Economy Rating	-0.41	
	Drive Trace Inertia Work Ratio Rating	32.24	
	Integrated DC KW-HRS	7.66378	
	Manufacturer Fuel Economy	32.2441	
<b>Manufacturer Test Comments</b>	This test results only for CANADA market vehicle of Ioniq 9 RWD. Data over '99.99' have been set as '99.99' due to technical restrictions, but have actually obtained the following results: -> Charge Depleting Bag / Phase #4 DT-ASCR = 199.10, DT-IWRR = 398.20		

### Certification Summary Information Report

Test Group		VHYXT00.0402				Evaporative/Refueling Family					--	
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 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CO	0.0	--	--	--	0	--	0	0	Pass
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CO	0.0	--	--	--	0	--	0	0	Pass
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

### Certification Summary Information Report

Test Group		VHYXT00.0402				Evaporative/Refueling Family				--		
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 ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

<b>Fuel Properties</b>
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### Certification Summary Information Report

<b>Test Group</b>		VHYXT00.0402			<b>Evaporative/Refueling Family</b>			--		
<b>Consolidated List of Standards</b>										
<b>Exhaust Standards</b>										
<b>Cert Region</b>		California + CAA Section 177 states			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			<b>Standard Level</b>			California ZEV		
<b>Fuel</b>		Electricity			<b>Test Procedure</b>			Multi-Cycle Test (MCT)		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	CO	--	--	--	--	--	--	0	0	
150,000 miles	CREE	--	--	--	--	--	--	0	0	
<b>Cert Region</b>										
<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			<b>Standard Level</b>			Federal Tier 3 Bin 0		
<b>Fuel</b>		Electricity			<b>Test Procedure</b>			CVS 75 and later (w/o can. load)		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	CO	--	--	--	--	--	--	0	0	
<b>Cert Region</b>										
<b>Cert Region</b>		Federal			<b>Cert/In-Use Code</b>			Cert		
<b>Vehicle Class</b>		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			<b>Standard Level</b>			Federal Tier 3 Bin 0		
<b>Fuel</b>		Electricity			<b>Test Procedure</b>			Multi-Cycle Test (MCT)		
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>	
150,000 miles	CO	--	--	--	--	--	--	0	0	
150,000 miles	CREE	--	--	--	--	--	--	0	0	

### Certification Summary Information Report

<b>Test Group</b>		VHYXT00.0402			<b>Evaporative/Refueling Family</b>			--	
<b>Cert Region</b>		California + CAA Section 177 states			<b>Cert/In-Use Code</b>			Cert	
<b>Vehicle Class</b>		LDT4 (ALVW > 5750, LVW 0-3750, GVW > 6000)			<b>Standard Level</b>			California ZEV	
<b>Fuel</b>		Electricity			<b>Test Procedure</b>			CVS 75 and later (w/o can. load)	
<b>Useful Life</b>	<b>Emission Name</b>	<b>Rounded Result</b>	<b>RAF</b>	<b>NMOG / NMHC</b>	<b>Upward Diesel Adjustment Factor</b>	<b>Downward Diesel Adjustment Factor</b>	<b>Mult DF</b>	<b>Add DF</b>	<b>Std</b>
150,000 miles	CO	--	--	--	--	--	--	0	0

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	--
<b>Glossary</b>			
<b>Useful Life</b>			
4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		
<b>Emission Name</b>			
HC-TOTAL	Total Hydrocarbon	AS-VOLT	Average System Voltage
CO	Carbon Monoxide	CO2 BAG 1	Bag 1 Carbon Dioxide
CO2	Carbon dioxide	CO2 BAG 2	Bag 2 Carbon Dioxide
CREE	Carbon-Related Exhaust Emissions	CO2 BAG 3	Bag 3 Carbon Dioxide
OPT-CREE	Optional Carbon-Related Exhaust Emissions	CO2 BAG 4	Bag 4 Carbon Dioxide
NOX	Nitrogen Oxide	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
PM	Particulate Matter	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
PM-COMP	SFTP Composite Particulate Matter	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM	Non-methane Hydrocarbon	DT-ASCR	Drive Trace Absolute Speed Change Rating
OMHCE	Organic material Hydrocarbon Equivalent	DT-EER	Drive Trace Energy Economy Rating
OMNMHCE	Organic material non-methane HC equivalent	COMB-CREE	Combined Carbon-Related Exhaust Emissions
NMOG	Non-methane organic gases	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
HCHO	Formaldehyde	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
H3C2HO	Acetaldehyde	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	LEAK-DIA	Effective Leak Diameter (inches)
CO-COMP	SFTP Composite Carbon Monoxide	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
ETHANOL	C2H5OH - Ethanol	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
FE BAG 1	Bag 1 Fuel Economy	KW-HRS	Integrated DC KW-HRS
FE BAG 2	Bag 2 Fuel Economy	CH4 BAG 1	Bag 1 Methane
FE BAG 3	Bag 3 Fuel Economy	CH4 BAG 2	Bag 2 Methane
FE BAG 4	Bag 4 Fuel Economy	CH4 BAG 3	Bag 3 Methane
MFR FE	Manufacturer Fuel Economy	CH4 BAG 4	Bag 4 Methane
HC	Hydrocarbon for Running Loss and ORVR	CO BAG 1	Bag 1 Carbon Monoxide
METHANE	CH4 - Methane	CO BAG 2	Bag 2 Carbon Monoxide
METHANOL	CH3OH - Methanol	CO BAG 3	Bag 3 Carbon Monoxide
N2O	Nitrous Oxide	CO BAG 4	Bag 4 Carbon Monoxide
SPITBACK	Spitback Hydrocarbon in grams	NMOG BAG 1	Bag 1 Non-methane organic gases
AMP-HRS	Integrated Amp-hours	NMOG BAG 2	Bag 2 Non-methane organic gases
START-SOC	System Start State of Charge Watt-hours	NMOG BAG 3	Bag 3 Non-methane organic gases
END-SOC	System End State of Charge Watt-hours	NMOG BAG 4	Bag 4 Non-methane organic gases
ACT-DISTANCE	Actual Distance Driven (miles)		

## Certification Summary Information Report

Test Group	VHYXT00.0402	Evaporative/Refueling Family	
CA	California + CAA Section 177 states	FA	Federal
<b>Exhaust Emission Standard Level</b>			
B1	Federal Tier 2 Bin 1	T3B160	Federal Tier 3 Bin 160
B2	Federal Tier 2 Bin 2	T3B125	Federal Tier 3 Bin 125
B3	Federal Tier 2 Bin 3	T3B110	Federal Tier 3 Transitional Bin 110
B4	Federal Tier 2 Bin 4	T3B85	Federal Tier 3 Transitional Bin 85
B5	Federal Tier 2 Bin 5	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
B6	Federal Tier 2 Bin 6	T3B70	Federal Tier 3 Bin 70
B7	Federal Tier 2 Bin 7	T3B50	Federal Tier 3 Bin 50
B8	Federal Tier 2 Bin 8	T3B30	Federal Tier 3 Bin 30
B9	Federal Tier 2 Bin 9	T3B20	Federal Tier 3 Bin 20
B10	Federal Tier 2 Bin 10	T3B0	Federal Tier 3 Bin 0
B11	Federal Tier 2 Bin 11	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2	California LEV-II LEV	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2OP	California LEV-II LEV Optional	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
U2	California LEV-II ULEV	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
S2	California LEV-II SULEV	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
ZEV	California ZEV	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
OT	Other	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
T1	Federal Tier 1	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
PZEV	California PZEV	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L2LEV160	California LEV-II LEV160	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L2ULEV125	California LEV-II ULEV125	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L2SULEV30	California LEV-II SULEV30	HDV3B0	Federal Tier 3 HD Class 3 Bin 0
L2LEV395	California LEV-II LEV395	L4SULEV100	California LEV-IV SULEV100
L2ULEV340	California LEV-II ULEV340	L4SULEV125	California LEV-IV SULEV125
L2LEV630	California LEV-II LEV630	L4SULEV15	California LEV-IV SULEV15
L2ULEV570	California LEV-II ULEV570	L4SULEV150	California LEV-IV SULEV150
L3LEV160	California LEV-III LEV160	L4SULEV170	California LEV-IV SULEV170
L3ULEV125	California LEV-III ULEV125	L4SULEV175	California LEV-IV SULEV175
L3ULEV70	California LEV-III ULEV70	L4SULEV20	California LEV-IV SULEV20
L3ULEV50	California LEV-III ULEV50	L4SULEV200	California LEV-IV SULEV200
L3SULEV30	California LEV-III SULEV30	L4SULEV230	California LEV-IV SULEV230
L3SULEV20	California LEV-III SULEV20	L4SULEV25	California LEV-IV SULEV25
L3LEV395	California LEV-III LEV395	L4SULEV30	California LEV-IV SULEV30
L3ULEV340	California LEV-III ULEV340	L4SULEV75	California LEV-IV SULEV75
L3ULEV250	California LEV-III ULEV250	L4SULEV85	California LEV-IV SULEV85
L3ULEV200	California LEV-III ULEV200	L4ULEV125	California LEV-IV ULEV125

## Certification Summary Information Report

Test Group		VHYXT00.0402	Evaporative/Refueling Family		--
L3SULEV170	California LEV-III SULEV170		L4ULEV200	California LEV-IV ULEV200	
L3SULEV150	California LEV-III SULEV150		L4ULEV250	California LEV-IV ULEV250	
L3LEV630	California LEV-III LEV630		L4ULEV270	California LEV-IV ULEV270	
L3ULEV570	California LEV-III ULEV570		L4ULEV40	California LEV-IV ULEV40	
L3ULEV400	California LEV-III ULEV400		L4ULEV400	California LEV-IV ULEV400	
L3ULEV270	California LEV-III ULEV270		L4ULEV50	California LEV-IV ULEV50	
L3SULEV230	California LEV-III SULEV230		L4ULEV60	California LEV-IV ULEV60	
L3SULEV200	California LEV-III SULEV200		L4ULEV70	California LEV-IV ULEV70	
<b>Transmission Type Code</b>					
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)	
<b>Drive System Code</b>					
4	4-Wheel Drive		P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front		A	All Wheel Drive	
R	2-Wheel Drive, Rear				
<b>Additional Terms and Acronyms</b>					
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	