



Application for Certification - Part 1

Test Group (CBI)

- **Model Year:** 2027
- **Manufacturer Name:** Hyundai Motor Company
- **Test Group:** VHXYV03.5HT5
- **Test Group Description:** 3.5 Liter / V6 Turbo GDPI / Otto-cycle
- **Durability Group:** VHXYGPGNNHT5
- **Durability Group Description:** Monolith, 2TWC
- **Vehicle Class:** LDV
- **Applicable Standards:** FED: Interim Tier-4 Bin 50 / Tier-4 Evap
CAL: LEV-IV ULEV 50 / LEV-IV Evap
- **Vehicles Tested:** EDV-RG3U4L5TA173A/0 (Exh)
EDV-RG3U1L5TA082A/0 (Evap)
FEDV- RG3U6L5TA014A/0, RG3U4L5TA137A/0
- **Carlines Covered by Certificate:** G80 AWD
- **EPA Response Requested by:** February 6, 2026
- **For Questions, Contact:** Stephanie Wright
734-273-1904
E-mail: swright@hatci.com

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01.00 Correspondence and Communications

Please refer to Common Section 01.00.

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

02.00 Durability Group Description

1. Durability Group Name : VHYXGPGNNHT5
2. Combustion Cycle : Otto cycle / four stroke
3. Engine Type : Piston / Water cooled
4. Fuel Used : Gasoline
5. Basic Fuel Metering System : Direct & Port 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

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: VHYXR0142HPG
(C/O 21MY G80 3.5T)**

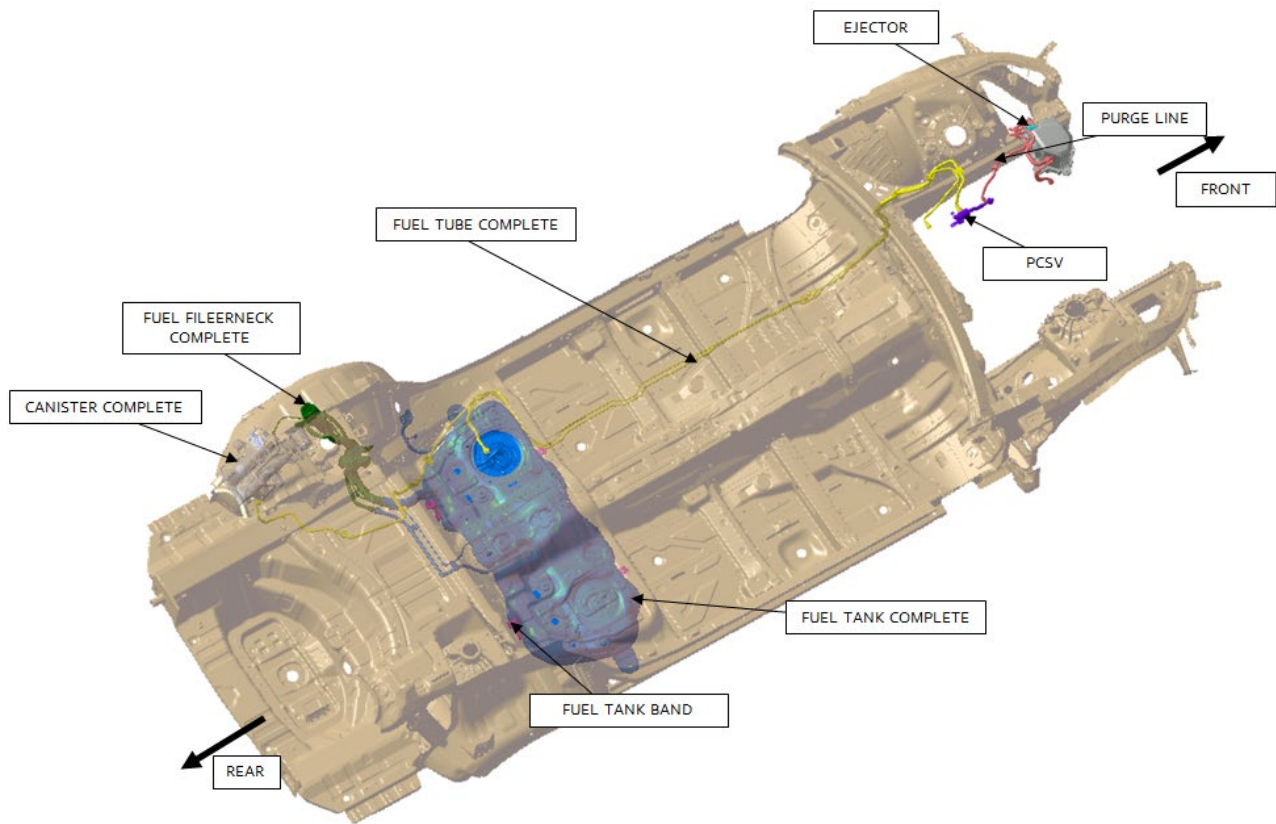
03.00.01.01 Evaporative/Refueling Family Parameters

- 1. Type of Vapor Storage Device: Canister(1EA), Air cleaner(2EA)
- 2. Basic canister design

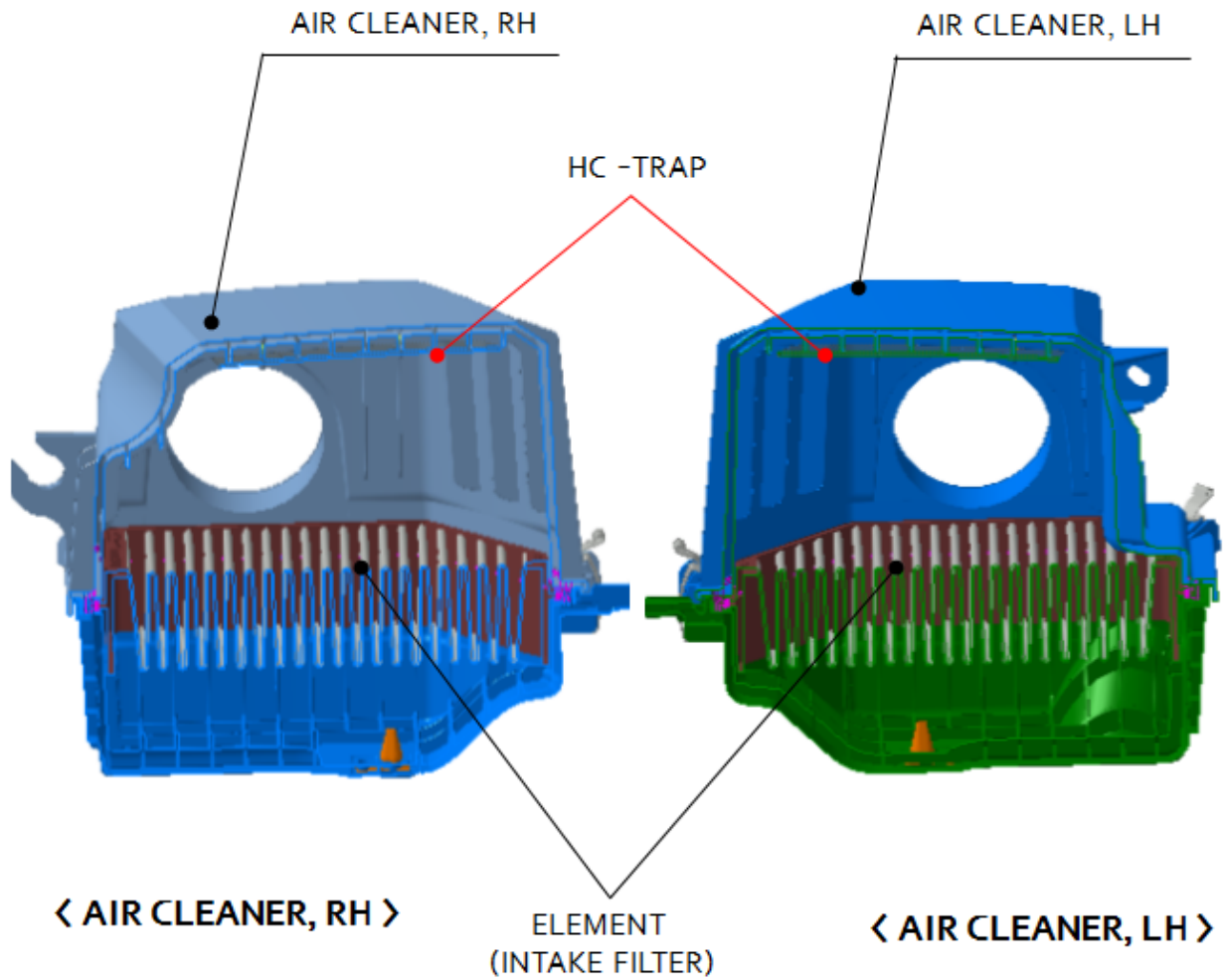
Evap. Code	Absorption Flow Rate (g/hr)	Nominal Working Capacity(g)	Size (cc)	Material	Medium	Nominal Fuel Tank Capacity (gal)
142HPG	15	149	2620	Plastic	Activated Carbon	19.3

- 3. Fuel system: Returnless fuel system
- 4. Type of refueling emission control system: Integrated type
- 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)
 - c. Canister close valve
- 7. Purge control system
 - a. Type of valve: Duty
 - b. Purge control strategy: Controlled by ECU
 - c. High load purge system : Yes
 - d. Active purge system : No
- 8. Vapor hose material: Rubber
- 9. Fuel tank material: Plastic
- 10. HC-Trap
 - 10.1 Media : NON WOVEN FABRICS containing Activated Carbon
 - 10.2 Working capacity: Total 2g (RH: 1g + LH: 1g)

03.00.01.02 Evaporative/Refueling Schematic



03.00.01.03 HC-Trap Schematic



03.01 Evaporative/Refueling General Description

Please refer to Common Section 03.01.

03.02 List of Vehicles in Evaporative Families

Please refer to Common Section 03.02.

05.00 Test Group Description

Test Group Name : VHYXV03.5HT5

Engine Displacement (L) Covered : 3.5L

Arrangement/Number of Cylinders : V6

Vehicle Class(s) Covered : LDV

Sales Location/Emission Standard : FED: Interim Tier-4 Bin 50
CAL: LEV-IV ULEV 50
See CSI report for emission standard levels

06.00 Test Vehicle Description

Exhaust Durability Data Vehicle

Verify Processing Report

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

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

Test Vehicle Information Submission

Test Vehicle Information Details

Information Process Code : N
EPA Manufacturer Code : HYX
Vehicle Identification Text : JX14L5HU008B3
Vehicle Configuration Number : 0

Vehicle Configuration Details

Vehicle Description Details

Manufacturer Vehicle Configuration Number : 0
Test Group Name : SHYXT03.5TT5
Evaporative Refueling Family Name : SHYXR0162TTG
Leak Family Identifier : JX1
Leak Family Name : SHYXR0162TTG-JX1
Model Year : 2025
Actual Test Vehicle Make Text : Genesis
Actual Test Vehicle Model Text : GV80

Drive Source Details

Drive Source Identifier : C
Fuel Identifier : G

Test Drive Code : R
Shift Indicator Light Usage Identifier : 1
Aged Component Usage Identifier : 4

Odometer Correction Details

Correction Initial Value : 0
Correction Factor Value : 1.0003
Correction Sign Identifier : -
Correction Units Code : M

Engine Code Text : G6DS-AC
Engine Rated Horsepower Value : 375
Engine Displacement Value : 3.5

Air Aspiration Details

Air Aspiration Method Identifier : TC
Air Aspiration Device Count : 2
Air Aspiration Configuration Identifier : P

Charge Air Cooler Identifier : L

VHYXV03.5HT5 – Hyundai G80 3.5L – Part 1

Issued : 12-12-2025

Revised:

Vehicle Specifications Details

Curb Weight Value : 5116
Equivalent Test Weight Value : 5500
Gross Vehicle Weight Rating Value : 6173
NV Ratio Value : 25.1
Axle Ratio Value : 3.91

Transmission Specifications Details

Light Duty Transmission Type Identifier : SA
Transmission Lockup Indicator : Y
Transmission Creeper Gear Indicator : N
Transmission Gear Count : 8

Target Set Coefficient Details

Test Procedure Dynamometer Coefficients Category : Cold-CO
Target CoefficientA Value : 47.138
Target CoefficientB Value : 0.54426
Target CoefficientC Value : 0.028993
Set CoefficientA Value : 11.960
Set CoefficientB Value : 0.19940
Set CoefficientC Value : 0.029610

Target Set Coefficient Details

Test Procedure Dynamometer Coefficients Category : C-H-E
Target CoefficientA Value : 42.853
Target CoefficientB Value : 0.49478
Target CoefficientC Value : 0.026357
Set CoefficientA Value : 17.300
Set CoefficientB Value : 0.19659
Set CoefficientC Value : 0.027251

Target Set Coefficient Details

Test Procedure Dynamometer Coefficients Category : US06
Target CoefficientA Value : 42.853
Target CoefficientB Value : 0.49478
Target CoefficientC Value : 0.026357
Set CoefficientA Value : 17.300
Set CoefficientB Value : 0.19659
Set CoefficientC Value : 0.027251

Manufacturer Comment Text : 25MY JX 3.5T AWD 22" (DDV)

EPA Generated Test Vehicle Details

Original Receipt Date : 20231204
Hybrid Vehicle Indicator : N
Adjusted Loaded Vehicle Weight Value : 5644
Loaded Vehicle Weight Value : 5416
Total Road Load Horsepower Value : 17.8

Transaction Status Details

Transaction Status Identifier : ACCEPTED

Exhaust & Evaporative Emission Data Vehicle

Please refer to CSI report in 07.00

07.00 Test Results

07.01.01 EV-CIS Certification Summary Information

Certification Summary Information Report submitted to EV-CIS.

See attachment:

07.02 Litmus Test Sheet

Litmus Test of EDV

EDV	FTP(75°F)	Cold FTP (20°F)	HFET	US06	SC03
BAG1	20.6	18.0	36.4	13.8	19.3
BAG2	18.9	18.8		27.9	
BAG3	23.8	24.0		 	
TOTAL	20.4	 		22.7	

(1) Determining the City FE Method

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

		UNROUNDED	ADJ. ROUNDED	Examination	Decision
CITY FE	MPG BASED	16.40456356	15.7	Applicable	
	5-CYCLE	17.00256812	17.0	Applicable	Selected
	Ratio of 5CYCLE to 0.96 MPG-BASED		108.28		

(2) Determining the Hwy FE Method

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

		UNROUNDED	ADJ. ROUNDED	Examination	Decision
HWY FE	MPG BASED	25.8037	24.5	Not Applicable	
	5-CYCLE	26.0314	26.0	Select This	Selected
	MODIFIED	25.8048	25.8	Not Applicable	
	Ratio of 5CYCLE to 0.95 MPG-BASED		106.12		

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

Model Name		G80 AWD
Vehicle Classification		LDV
Carline		192
Emission Control System Description	Type, Number and Configuration of Catalyst(s)	See Sec. 02.02
	EGR Type	N/A
	Air Pump Type	N/A
	Fuel System Type	DFI, SFI
	Intake Air Aspiration Method	Turbocharger, Charge Air Cooler
	Other	-
Engine Code		G6DS-AC
Number of Valves per Cylinder		4
Engine Displacement (L)		3.5
Sales Area		50-State
Transmission		SA8
SIL		N/A
Tire Size		F:245/40R20, R:275/35R20 (Pirelli) F:245/45R19, R:275/40R19 (Michelin)
N/V Ratios		24.5
ETW(lb)		5000
Elec. Dyno. Target Coefficient	A	Please refer to 12.02.01.
	B	
	C	
Fuel Tank Volume(gal)		19.3

VHYXV03.5HT5 – Hyundai G80 3.5L – Part 1

Issued : 12-12-2025

Revised :

12.02.02 Engine Starting Procedures

Please refer to Common Section 12.02.02.

12.02.03 Shift Schedules

Automatic transmission: 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 VHYXV03.5HT5 /
Evaporative Family VHYXR0142HPG

Dear Ms. Kathryn Kochunas:

Hyundai Motor Company requests that California Air Resources Board (CARB) issue an Executive Order for test group subjected above.

All vehicles within the test group mentioned above comply with the applicable regulations contained in 40 CFR86.1844-01(d), (14) including the provisions of 40 CFR Parts 85, 86 and 600. This test group also complies with California Air Resources Board, Final Regulation Order, Sections 1961.4 and 1961.3 (1962.4 and 1962.3 for zero-emission vehicles) Title 13, California Code of Regulations.

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

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

Sincerely,

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

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

VHYXV03.5HT5 – Hyundai G80 3.5L – Part 1
Issued : 12-12-2025
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
VHYXV03.5HT5 / Evaporative Family VHYXR0142HPG

Dear Ms. Robin U. Lang:

Hyundai Motor Company requests that California Air Resources Board (CARB) issue a Executive Order for the above subject test group.

All vehicles within the above mentioned test group comply with the applicable regulations contained in 40 CFR86.1844-01(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.

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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

15.00 **Other Information**
15.01 **Certification Fee Filing Form**

US EPA Fee Form

[Help and EPA Instructions](#)

* Required Field

General Information

Date: 11/07/2025

Process Code *

Submit New Fee Filing Form

Manufacturer Code *

HYX

Manufacturer Name *

Hyundai

Contact Name *

Jennifer Cherry

Contact Email Address *

jcherry@hatci.com

Contact Phone *

7343372259

Calendar Year complete application submitted to EPA *

2026

PLEASE NOTE: These fees apply to complete certification applications received by EPA from January 1, 2026, through December 31, 2026. The applicable fee is determined by the

calendar year in which the complete certification application is received, not the model year.

Engine Family / Evaporative Family / Test Group *

VHYXV03.5HT5

Certificate Request Type (Industry Sector Code)

Certificate Request Type *

- On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V)
- On-Highway HDE Dyno Cert (Federal) (E, H)
- On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)
- On-Highway Motorcycle (C)
- On-Highway HDV Evap (F)
- On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V)
- On-Highway HDE Dyno Cert (California-Only) (E, H)
- Nonroad CI (L)
- Nonroad SI (B, S)
- Locomotive (G, K)
- All Nonroad Recreational, excluding Marine engines (X, Y)
- All Marine (Including IMO) (M, N, W)
- Component Certification for Evaporative Emissions (P)

IMO Name (Required for dual US/IMO Marine Only)

ICI VIN Number (Required for ICIs Only)

Do you qualify for a Reduced Fee? *

No

Payment Information

Amount Owed

\$32,317.00

Payment Type *

Offline Wire

Comments

EPA Form Number 3520-29


OMB Control No. 2060-0545

Approval expires 7/31/2027

The public reporting and recordkeeping burden for this collection of information is estimated to average 12 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.

The content of this document may contain Sensitive But Unclassified (SBU) data and/or Controlled Unclassified Information (CUI).

15.02 Vehicle Emission Control Information (VECI) Label

	HYUNDAI MOTOR COMPANY VEHICLE EMISSION CONTROL INFORMATION	
Conforms to regulations:		2027 MY
U.S.EPA: Interim T4B50 LDV OBD: CA II Fuel: Gasoline		
California: LEV IV ULEV50 PC OBD: CA II Fuel: Gasoline		
No adjustments needed.	DFI, SFI, 2WR-HO2S, 2HO2S, 2TWC, 2TC, CAC	
Group: VHYXV03.5HT5 Evap.: VHYXR0142HPG		32450-3N123

15.03 ORVR Safety Statement

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

15.04 New Technology System Description

Please refer to Common Section 15.04

15.05 Engine Oil Information

Please refer to Common Section 15.05.

16.00 California ARB Information

16.01 Exhaust Emission Control System (Tune-up label)

Test Group Name	Model	Trans.	Exhaust Emission Control System
VHYXV03.5HT5	G80 AWD	SA8	DFI, SFI, 2WR-HO2S, 2HO2S, 2TWC, 2TC, CAC, OBD-II

Note: HO2S : Heated Oxygen Sensor
WR-HO2S : Wide Range Heated Oxygen Sensor
TWC : Three Way Catalyst
DFI : Direct Fuel Injection
SFI : Sequential multiport Fuel Injection
OBD-II : On-Board Diagnostics II
TC : Turbo Charger
CAC : Charge Air Cooler
(Use abbreviations per SAE J1930 October 08)

16.02 Test Procedures

Please refer to Common Section 16.02

16.03.00 Fill Pipe Access Zones Statement and Specifications

16.03.01 Fill Pipe Access Zones Statement

Please refer to Common Section 16.03.01.

16.04.00 Request for Certificate

Please refer to 14.00.

16.04.01 Statement of Compliance

Please refer to Common Section 16.04.01.

16.04.02 Supplemental Data Sheet

Please refer to E-cert data.

16.05.00 Emission Testing Waiver Statement

Please refer to Common Section 16.05.00.

16.06.00 Projected Sales

Please refer to Common Section 13.00.

16.07.00 OBD-II System Description

Please refer to section 09.00.

16.08.00 New Technology System Description

Please refer to Common Section 15.04.

16.09.00 Environmental Performance Label

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

16.10.00

AECD General Statements

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

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

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

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

16.11.00 California warranty compliance

Please refer to Common Section 16.11.00.

16.12.00 Description of the Propulsion System: Not Applicable

16.13.00 ZEV Compliance: Not Applicable

17.00.00 Service of Process

Please refer to Common Section 01.00.

18.00.00 Attachment

1. CSI Report

Certification Summary Information Report

Manufacturer	Hyundai Motor Company	Manufacturer Code	HYX
Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Certificate Number	--	CARB Executive Order #	--
Certificate Issue Date	--	Certificate Revision Date	--
Certificate Effective Date	--	Conditional Certificate	--
CSI Revision #	--	CSI Submission/Revision Date	12/04/2025 08:42:26 PM
Model Year	2027		

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

Hybrid Indicator	No		
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Multiple Fuel Combustion	--	Off-board Charge Capable Indicator	--
Fuel Cell Indicator	--	EPA Vehicle Class	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	VHYXGPGNNHT5	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	VHYXV03.5HT5
Test Group OBD Compliance Level	Full - no deficiencies	Number of Test Group OBD Deficiencies	0
OBD Deficiencies Comments	--		
Mfr Test Group Comments	The fuel for Litmus test is E0. Litmus result(Value/Threshold):City(17.0/15.7),HWY(26.0/24.5)-2MODE but select 5MODE Test No:SHYX91005786(FTP),SHYX91005789(HWY),SHYX91005788(US06),SHYX91005787(SC03),SHYX10083764(Cold)		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG				
Evaporative/Refueling Family Information							
Evaporative Summary Information Type	New	Submission/Correction Date	12/03/2025 01:18:48 AM				
Integrated ORVR?	Yes	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)	142	Number of Primary Canisters	1				
Number of Bleed Canisters	0	Bleed Canister Total Working Capacity (grams)	--				
Mfr Evaporative/Refueling Family Comments	--						
Leak Family Details							
Leak Family Indicator	Yes						
Canister Bleed Test Indicator	Yes	Applicability of Evaporative Canister Bleed Test	50 State				
Evaporative Canister Bleed Test Comments	--						
CARB Fuel Only (Rig) Test Indicator	No	Applicability of CARB Fuel Only (Rig) Test	--				
CARB Fuel Only (Rig) Test Comments	--						
	Applicability of Leak Family Requirements	Leak Family Standard (inches)	Leak Family Description				
Leak Family Name	50 State	0.02	--				
VHYXR0142HPG-RG3							
Models Covered by this Certificate							
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Hyundai Motor Company	2 - GENESIS	192 - G80 AWD	California + CAA Section 177 states	All Wheel Drive	Semi-Automatic	8	Yes
Hyundai Motor Company	2 - GENESIS	192 - G80 AWD	Federal	All Wheel Drive	Semi-Automatic	8	Yes
Engine Description							
Hybrid Type	--		Hybrid Description	--			
Engine Type	4-Stroke Spark Ignition		Mfr Engine Description	--			
Engine Block Arrangement	V-shaped engine		Mfr Engine Block Arrangement Description	--			
Camless Valvetrain Indicator	No		Oil Viscosity/Classification	SAE 0W30			
Number of Cylinders/Rotors	6		Mechanically Variable Compression Ratio Indicator	N			

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG							
After Treatment Device(s) (ATD)										
ATD Number	ATD Type	ATD Precious Metal	Substrate Material							
1	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic							
2	Three-way catalyst	Platinum + Palladium + Rhodium	Ceramic							
Mfr After Treatment Device (ATD) Comments										
--										
Direct Ozone Reduction (DOR) Device										
Not Equipped										
Mfr Emission Control Device Comments										
--										
Engine Configuration Number 1										
Engine Displacement (liters)	3.5	Engine Rated Horsepower	375							
Number of Inlet Valves Per Cylinder	2	Number of Exhaust Valves Per Cylinder	2							
Air Aspiration Method	Turbocharged	Number of Air Aspiration Devices	2							
Air Aspiration Device Configuration	Parallel	Charge Air Cooler Type	Liquid							
Air Aspiration Drive Method(s)	Mechanical									
Cylinder Deactivation	No									
Cylinder Deactivation Description	--									
Variable Valve Timing	Yes									
Variable Valve Timing System Description	Fixed3									
Variable Valve Lift?	No									
Variable Valve Lift System Description	--									
Number of Knock Sensors	2	Number of Air/Fuel Sensors	4							
Air/Fuel Sensor # 1 Type	Other	Air/Fuel Sensor # 1 Description	WR-H2OS							
Air/Fuel Sensor # 2 Type	Heated oxygen	Air/Fuel Sensor # 2 Description	--							
Air/Fuel Sensor # 3 Type	Other	Air/Fuel Sensor # 3 Description	WR-H2OS							
Air/Fuel Sensor # 4 Type	Heated oxygen	Air/Fuel Sensor # 4 Description	--							
Mfr Air/Fuel Sensor Comments	--									
Exhaust Gas Recirculation	No	Cooled Exhaust Gas Recirculation	No							
EGR Type	--	Exhaust Gas Recirculation Description if 'Other'	--							
Closed Loop Air Injection System	No									
Air Injection Type	--	Air Injection Type if 'Other'	--							
Mfr Engine Configuration Comments	--									
Official Test Numbers										
Test Group	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	SHYX91005837	SHYX91005836	SHYX10083756	SHYX10083759	SHYX91005835	85.0	228.2	999.9	286.1	--

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
SFTP LEV-III Official Test Numbers			
Test Group Fuel	FTP	US06	SC03
Gasoline	SHYX91005837	SHYX91005836	SHYX10083756

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
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Emission Data Vehicle Information

Vehicle ID / Configuration	RG3U1L5TA082A / 0	Manufacturer Vehicle Configuration Number	0
Original Test Group Name	MHYXV03.5HT5	Original Evaporative/Refueling Family	MHYXR0142HTG
Original Test Vehicle Model Year	2021		

Vehicle Model

Represented Test Vehicle Make	Genesis	Represented Test Vehicle Model	G80
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Leak Family Details

Leak Family Identifier	RG3	Leak Family Name	MHYXR0142HTG-RG3
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Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline

Hybrid Indicator	No	Multiple Fuel Combustion	--
Multiple Fuel Storage	--	Rechargeable Energy Storage System Indicator	--
Fuel Cell Indicator	--	Rechargeable Energy Storage System, if 'Other'	--
Rechargeable Energy Storage System	--		
Off-board charge Capable Indicator	--		
Odometer Correction -- Initial	0	Odometer Correction Factor	0.9948
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	G6DS-AC	Rated Horsepower	375
Displacement (liters)	3.5		
Air Aspiration Method	Turbocharged	Air Aspiration Method, if 'Other'	
Number of Air Aspiration Devices	2	Air Aspiration Device Configuration	Parallel
Charge Air Cooler Type	Liquid	Drive Mode While Testing	2-Wheel Drive, Rear
Shift Indicator Light Usage	Not equipped	Aged Emission Components	4,000 (mi)
Curb Weight (lbs)	4497	Equivalent Test Weight (pounds)	4750
GVWR (lbs)	5567	N/V Ratio	24.8
Axle Ratio	3.54		
Transmission Type	Semi-Automatic	# of Transmission Gears	8
Transmission Lockup	Yes	Creeper Gear	No

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	44.566	0.44728	0.017087	21.698	0.14745	0.018759	14.6

Emission Control Device Comments --

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
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Manufacturer Test Vehicle Comments 21MY RG3 3.5T EVAP AWD 20"

Test #	MHYX10062524	Test Procedure	38 - CA fuel 3-day evap.
Exhaust Test # for this Evap Test	MHYX10062521	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/22/2019	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	4238	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.1919	--

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750)-3DBL

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.1919	0	0.192	0.300	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.1919	0	0.192	0.300	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	MHYX91004651	Test Procedure	27 - California fuel 2-day evap
Exhaust Test # for this Evap Test	MHYX91004650	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	10/22/2020	Fuel	Gasoline
Fuel Batch ID	26757	Fuel Calibration Number	1
Vehicle Class	N/A	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	5077.1	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.207219	--

Manufacturer Test Comments Hot_Soak_HC_(g) = 0.044611, Diurnal (gHC) = 0.162608

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	0.2072	0	0.207	0.300	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.2072	0	0.207	0.300	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	MHYX10062526	Test Procedure	37 - California Fuel Running Loss
Exhaust Test # for this Evap Test	MHYX10062521	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/22/2019	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	4238	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.001	--

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750) CA E10-RL

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.001	0	0.00	0.05	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.001	0	0.00	0.05	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	MHYX10062527	Test Procedure	24 - Federal fuel refueling test (ORVR)
Exhaust Test # for this Evap Test	MHYX10062523	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	11/06/2019	Fuel	Gasoline
Fuel Batch ID	18T-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	4102	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	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)	0.006	--

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750) FED E10-ORVR

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.006	0.003	0.01	0.20	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.006	0.003	0.01	0.20	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	MHYX10062528	Test Procedure	65 - Evap Canister Bleed Test
Exhaust Test # for this Evap Test	--	Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline
Test Date	11/28/2019	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	4257	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL (Total Hydrocarbon)	0.0148	--

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750) CA E10-Bleed

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL	0.0148	0	0.015	0.020	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL	0.0148	0	0.015	0.020	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
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Test #	MHYX10062680	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	12/02/2019	Fuel	Gasoline
Fuel Batch ID	18T-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	4257	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

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

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750) FED E10-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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	MHYX10062681	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	12/02/2019	Fuel	Gasoline
Fuel Batch ID	18T-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	4257	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	No

Test Results

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

Manufacturer Test Comments 21MY RG3 3.5L 20"(ETW:4750) FED E10-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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
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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	41.277	0.66044	0.014898	3.593	0.70741	0.013318	14.9
Cold CO	45.405	0.72648	0.016388	-1.256	0.70182	0.014719	N/A
US06	41.277	0.66044	0.014898	3.593	0.70741	0.013318	N/A

Emission Control Device Comments

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Manufacturer Test Vehicle Comments

25MY RG3 PE 3.5T EDV AWD 20" Pirelli

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX10083758	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	11/30/2023	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	4677	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.3732	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.37	--
DT-EER (Drive Trace Energy Economy Rating)	0.62	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	2.75	--
MFR FE (Manufacturer Fuel Economy)	19.5214	19.5214
NOX (Nitrogen Oxide)	0.0108	--
HC-NM (Non-methane Hydrocarbon)	0.032	--
NMOG (Non-methane organic gases)	0.0352	--
HC-TOTAL (Total Hydrocarbon)	0.03877	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	427.8387	--

Manufacturer Test Comments

25MY RG3 PE 3.5T AWD 20" PIRELLI(ETW:5000) COMFORT E10-50F

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 ULEV50	CO	0.37	--	--	--	--	--	0.4	1.7	Pass
CA	4,000 miles	California LEV-IV ULEV50	NMOG	0.0352	--	1.10	--	--	--	0.035	99.999	Pass
CA	4,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0460	--	--	--	--	--	0.046	0.100	Pass
CA	4,000 miles	California LEV-IV ULEV50	NOX	0.0108	--	--	--	--	--	0.011	99.999	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX10083759	Test Procedure	11 - Cold CO
Exhaust Test # for this Evap Test	--	Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)
Test Date	11/15/2023	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	4299	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	513.573	--
FE BAG 1 (Bag 1 Fuel Economy)	16.6938	16.6938
CO2 BAG 2 (Bag 2 Carbon Dioxide)	472.9323	--
FE BAG 2 (Bag 2 Fuel Economy)	18.3008	18.3008
CO2 BAG 3 (Bag 3 Carbon Dioxide)	368.7376	--
FE BAG 3 (Bag 3 Fuel Economy)	23.4429	23.4429
CO (Carbon Monoxide)	0.4126	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.08	--
DT-EER (Drive Trace Energy Economy Rating)	-1.25	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.37	--
MFR FE (Manufacturer Fuel Economy)	19.0663	19.0663
NOX (Nitrogen Oxide)	0.014	--
HC-NM (Non-methane Hydrocarbon)	0.1083	--
HC-TOTAL (Total Hydrocarbon)	0.12173	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	452.7183	--

Manufacturer Test Comments

25MY RG3 PE 3.5T AWD 20" PIRELLI(ETW:5000) COMFORT E10-20F

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CO	0.41	--	--	--	0.14	--	0.6	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	HC-NM	0.11	--	--	--	0.0029	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-IV ULEV50	CO	0.41	--	--	--	0.14	--	0.6	10.0	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX10083765	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	11/17/2023	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	4407	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	550.072	--
FE BAG 1 (Bag 1 Fuel Economy)	16.1774	16.1774
CO2 BAG 2 (Bag 2 Carbon Dioxide)	595.5753	--
FE BAG 2 (Bag 2 Fuel Economy)	14.9631	14.9631
CO2 BAG 3 (Bag 3 Carbon Dioxide)	489.5995	--
FE BAG 3 (Bag 3 Fuel Economy)	18.1815	18.1815
METHANE (CH4 - Methane)	0.0035	--
CO (Carbon Monoxide)	0.2526	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.56	--
DT-EER (Drive Trace Energy Economy Rating)	-0.76	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.92	--
MFR FE (Manufacturer Fuel Economy)	15.9996	15.9996
NOX (Nitrogen Oxide)	0.012	--
N2O (Nitrous Oxide)	0.0012	--
HC-NM (Non-methane Hydrocarbon)	0.0047	--
NMOG (Non-methane organic gases)	0.0049	--
HC-TOTAL (Total Hydrocarbon)	0.00791	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	557.4182	557

Certification Summary Information Report

Test Group		VHYXV03.5HT5			Evaporative/Refueling Family				VHYXR0142HPG			
		Test Result Name		Unrounded Test Result		Verify Calculated CO2						
		Carbon dioxide		557.0623		--						
Manufacturer Test Comments		25MY RG3 PE 3.5T AWD 20" PIRELLI(ETW:5000) SPORT+ E0-FTP										
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 50	CREE	557	--	--	--	0.446570	--	557	--	--
Fed	120,000 miles	Federal Tier 3 Bin 50	METHANE	0.0035	--	--	--	0.0068	--	0.010	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	N2O	0.0012	--	--	--	0.0008	--	0.002	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.25	--	--	--	0.44	--	0.7	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0049	--	1.10	--	0.0040	--	0.009	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0169	--	--	--	--	--	0.021	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0120	--	--	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.25	--	--	--	0.44	--	0.7	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0049	--	1.10	--	0.0040	--	0.009	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0169	--	--	--	--	--	0.021	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0120	--	--	--	0.0000	--	0.012	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX91005786	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	02/29/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5014	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	431.5569153	--
FE BAG 1 (Bag 1 Fuel Economy)	20.588623	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	471.5057678	--
FE BAG 2 (Bag 2 Fuel Economy)	18.9020901	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	374.0921326	--
FE BAG 3 (Bag 3 Fuel Economy)	23.7979774	--
METHANE (CH4 - Methane)	0.0038454	--
CO (Carbon Monoxide)	0.2284193	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.9714448	--
DT-EER (Drive Trace Energy Economy Rating)	0.3726182	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.4181889	--
MFR FE (Manufacturer Fuel Economy)	20.399538	--
NOX (Nitrogen Oxide)	0.0123976	--
N2O (Nitrous Oxide)	0.0009987	--
HC-NM (Non-methane Hydrocarbon)	0.0064318	--
NMOG (Non-methane organic gases)	0.0066891	--
HC-TOTAL (Total Hydrocarbon)	0.0102899	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	437

Certification Summary Information Report

Test Group		VHYXV03.5HT5			Evaporative/Refueling Family				VHYXR0142HPG			
		Test Result Name		Unrounded Test Result			Verify Calculated CO2					
		Carbon dioxide		436.5066528			--					
Manufacturer Test Comments		None										
Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	120,000 miles	Federal Tier 3 Bin 50	CREE	437	--	--	--	0.446570	--	437	--	--
Fed	120,000 miles	Federal Tier 3 Bin 50	METHANE	0.0038	--	--	--	0.0068	--	0.011	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	N2O	0.0010	--	--	--	0.0008	--	0.002	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.23	--	--	--	0.44	--	0.7	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0067	--	1.10	--	0.0040	--	0.011	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0191	--	--	--	--	--	0.023	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0124	--	--	--	0.0000	--	0.012	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.23	--	--	--	0.44	--	0.7	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0067	--	1.10	--	0.0040	--	0.011	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0191	--	--	--	--	--	0.023	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0124	--	--	--	0.0000	--	0.012	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX91005837	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	03/22/2024	Fuel	Gasoline
Fuel Batch ID	28637	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5084	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	419.9039001	--
FE BAG 1 (Bag 1 Fuel Economy)	999	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	450.1409912	--
FE BAG 2 (Bag 2 Fuel Economy)	999	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	365.1292114	--
FE BAG 3 (Bag 3 Fuel Economy)	999	--
METHANE (CH4 - Methane)	0.0048113	--
CO (Carbon Monoxide)	0.1890561	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.2478287	--
DT-EER (Drive Trace Energy Economy Rating)	0.2992804	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.0825406	--
MFR FE (Manufacturer Fuel Economy)	999	--
NOX (Nitrogen Oxide)	0.0094917	--
N2O (Nitrous Oxide)	0.0014547	--
HC-NM (Non-methane Hydrocarbon)	0.0118146	--
NMOG (Non-methane organic gases)	0.0129766	--
PM (Particulate Matter)	0.0007702	--
HC-TOTAL (Total Hydrocarbon)	0.0165034	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	999

Certification Summary Information Report

Test Group		VHYXV03.5HT5			Evaporative/Refueling Family				VHYXR0142HPG			
Test Result Name		Unrounded Test Result			Verify Calculated CO2							
Carbon dioxide		420.6380615			--							
Manufacturer Test Comments		None Unrounded Result for the following test results were modified by Verify: FE BAG 1, FE BAG 3, MFR FE, FE BAG 2										
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 50	CREE	999	--	--	--	0.446570	--	999	--	--
Fed	120,000 miles	Federal Tier 3 Bin 50	METHANE	0.0048	--	--	--	0.0068	--	0.012	0.030	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	N2O	0.0015	--	--	--	0.0008	--	0.002	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.19	--	--	--	0.44	--	0.6	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	CO-COMP	0.96	--	--	--	0	--	1.0	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0130	--	1.10	--	0.0040	--	0.017	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0225	--	--	--	--	--	0.026	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX-COMP	0.0274	--	--	--	0	--	0.027	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0095	--	--	--	0.0000	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	PM	0.0008	--	--	--	0.0003	--	0.001	0.003	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.19	--	--	--	0.44	--	0.6	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0130	--	1.10	--	0.0040	--	0.017	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0225	--	--	--	--	--	0.026	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0095	--	--	--	0.0000	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	PM	0.0008	--	--	--	0.0003	--	0.001	0.003	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX10086397	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	04/10/2024	Fuel	Gasoline
Fuel Batch ID	180769	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	6800 Geddes Road		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5208	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.1902	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.08	--
DT-EER (Drive Trace Energy Economy Rating)	0.27	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.24	--
MFR FE (Manufacturer Fuel Economy)	24.5954	24.5954
NOX (Nitrogen Oxide)	0.006	--
HC-NM (Non-methane Hydrocarbon)	0.0053	--
NMOG (Non-methane organic gases)	0.0055	--
HC-TOTAL (Total Hydrocarbon)	0.0121	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	361.3365	361

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	360.7629	--

Manufacturer Test Comments

25MY RG3 PE 3.5T AWD 20" PIRELLI(ETW:5000) SPORT+ E0-HWY MCT

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CREE	361	--	--	--	0.446570	--	361	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0055	--	1.03	--	0.0040	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0115	--	--	--	--	--	0.016	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0060	--	--	--	0.0000	--	0.006	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0055	--	1.03	--	0.0040	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0115	--	--	--	--	--	0.016	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0060	--	--	--	0.0000	--	0.006	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX91005789	Test Procedure	3 - HWFE
Exhaust Test # for this Evap Test	--	Test Fuel Type	61 - Tier 2 Cert Gasoline
Test Date	02/29/2024	Fuel	Gasoline
Fuel Batch ID	29351	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5025	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0004342	--
CO (Carbon Monoxide)	0.1012859	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.8652954	--
DT-EER (Drive Trace Energy Economy Rating)	-0.0729545	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	8.8516493	--
MFR FE (Manufacturer Fuel Economy)	36.3288574	--
NOX (Nitrogen Oxide)	0.0037975	--
N2O (Nitrous Oxide)	0.0000505	--
HC-NM (Non-methane Hydrocarbon)	0.0002692	--
NMOG (Non-methane organic gases)	0.00028	--
HC-TOTAL (Total Hydrocarbon)	0.0007048	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	245

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	245.1676025	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CREE	245	--	--	--	0.446570	--	245	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0003	--	1.03	--	0.0040	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0041	--	--	--	--	--	0.008	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0038	--	--	--	0.0000	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0003	--	1.03	--	0.0040	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0041	--	--	--	--	--	0.008	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0038	--	--	--	0.0000	--	0.004	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX91005835	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	03/22/2024	Fuel	Gasoline
Fuel Batch ID	28637	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5095	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0006405	--
CO (Carbon Monoxide)	0.1515456	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	5.348825	--
DT-EER (Drive Trace Energy Economy Rating)	0.4513578	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	6.9190111	--
MFR FE (Manufacturer Fuel Economy)	35.9562683	--
NOX (Nitrogen Oxide)	0.0045288	--
N2O (Nitrous Oxide)	0.0000515	--
HC-NM (Non-methane Hydrocarbon)	0.0000894	--
NMOG (Non-methane organic gases)	0.0000921	--
HC-TOTAL (Total Hydrocarbon)	0.0007209	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	9999.9999999	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	240.9295502	--

Manufacturer Test Comments None

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CREE	999	--	--	--	0.446570	--	999	--	--
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0001	--	1.03	--	0.0040	--	0.004	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0046	--	--	--	--	--	0.009	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0045	--	--	--	0.0000	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0001	--	1.03	--	0.0040	--	0.004	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0046	--	--	--	--	--	0.009	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0045	--	--	--	0.0000	--	0.004	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	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX91005836	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	03/22/2024	Fuel	Gasoline
Fuel Batch ID	28637	Fuel Calibration Number	1
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Determined
Verify Test Lab ID	--		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5115	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	625.0285034	--
FE BAG 1 (Bag 1 Fuel Economy)	999	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	302.6760254	--
FE BAG 2 (Bag 2 Fuel Economy)	999	--
METHANE (CH4 - Methane)	0.0059102	--
CO (Carbon Monoxide)	0.7495705	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-3.4200201	--
DT-EER (Drive Trace Energy Economy Rating)	-3.03298	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-6.1209044	--
MFR FE (Manufacturer Fuel Economy)	999	--
NOX (Nitrogen Oxide)	0.0092547	--
N2O (Nitrous Oxide)	0.0003337	--
HC-NM (Non-methane Hydrocarbon)	0.0172296	--
NMOG (Non-methane organic gases)	0.0177465	--
PM (Particulate Matter)	0.0023229	--
HC-TOTAL (Total Hydrocarbon)	0.023057	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	374.4957275	--

Manufacturer Test Comments

None Unrounded Result for the following test results were modified by Verify: MFR FE, FE BAG 1, FE BAG 2

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CO	0.7496	--	--	--	0.44	--	1.190	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0177	--	1.03	--	0.0040	--	0.022	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0270	--	--	--	--	--	0.031	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0093	--	--	--	0.0000	--	0.009	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	PM	0.0023	--	--	--	0.0003	--	0.003	0.006	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.75	--	--	--	0.44	--	1.2	9.6	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0177	--	1.03	--	0.0040	--	0.022	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0270	--	--	--	--	--	0.031	0.060	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0093	--	--	--	0.0000	--	0.009	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	PM	0.0023	--	--	--	0.0003	--	0.003	0.006	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Test #	SHYX10083756	Test Procedure	95 - SC03
Exhaust Test # for this Evap Test	--	Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)
Test Date	12/01/2023	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	4708	Odometer Units	M
4WD Test Dyno	No	Diesel Adjustment Factor Usage	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO (Carbon Monoxide)	0.6598	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.51	--
DT-EER (Drive Trace Energy Economy Rating)	-0.95	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.23	--
MFR FE (Manufacturer Fuel Economy)	17.841	17.841
NOX (Nitrogen Oxide)	0.0155	--
HC-NM (Non-methane Hydrocarbon)	0.0059	--
NMOG (Non-methane organic gases)	0.0061	--
HC-TOTAL (Total Hydrocarbon)	0.0136	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	468.4955	--

Manufacturer Test Comments

25MY RG3 PE 3.5T AWD 20" PIRELLI(ETW:5000) COMFORT E10-SC03

Certification Summary Information Report

Test Group		VHYXV03.5HT5				Evaporative/Refueling Family				VHYXR0142HPG		
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 50	CO	0.6598	--	--	--	0.44	--	1.100	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0061	--	1.03	--	0.0040	--	0.010	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0216	--	--	--	--	--	0.026	99.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0155	--	--	--	0.0000	--	0.016	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	CO	0.66	--	--	--	0.44	--	1.1	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG	0.0061	--	1.03	--	0.0040	--	0.010	99.999	Pass
CA	150,000 miles	California LEV-IV ULEV50	NMOG+NOX	0.0216	--	--	--	--	--	0.026	0.050	Pass
CA	150,000 miles	California LEV-IV ULEV50	NOX	0.0155	--	--	--	0.0000	--	0.016	99.999	Pass

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Fuel Properties			
Fuel Batch ID	23T-01	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	09/29/2022
Fuel Batch Calibration Effective Date	08/07/2023	Fuel Batch Calibration Ineffective Date	08/07/2026
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.74
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18779
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.824	Weight Fraction CO2	--
Fuel Batch ID	22D-01	Fuel Calibration Number	1
Test Fuel Type	28 - Cold CO E10 Regular Gasoline (Tier 3)	Fuel Batch Calibration Date	07/29/2021
Fuel Batch Calibration Effective Date	05/10/2022	Fuel Batch Calibration Ineffective Date	05/10/2025
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	9.9	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17925
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.828	Weight Fraction CO2	--
Fuel Batch ID	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	18T-03	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	12/10/2018
Fuel Batch Calibration Effective Date	12/11/2018	Fuel Batch Calibration Ineffective Date	12/11/2021
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.745
Fuel Ethanol Volume Percent (%)	10.1	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17781
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.83	Weight Fraction CO2	--
Fuel Batch ID	29351	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	05/03/2023
Fuel Batch Calibration Effective Date	05/03/2023	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18439
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	Weight Fraction CO2	--
Fuel Batch ID	28637	Fuel Calibration Number	1
Test Fuel Type	48 - Tier 3 E10 Regular Gasoline (9 RVP @Low Alt.)	Fuel Batch Calibration Date	08/26/2021
Fuel Batch Calibration Effective Date	08/26/2021	Fuel Batch Calibration Ineffective Date	--
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.75
Fuel Ethanol Volume Percent (%)	9.6	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17894
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.825	Weight Fraction CO2	--
Fuel Batch ID	180769	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	02/01/2024
Fuel Batch Calibration Effective Date	02/02/2024	Fuel Batch Calibration Ineffective Date	01/11/2026
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.742
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18479
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.865	Weight Fraction CO2	--

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Fuel Batch ID	22M-01	Fuel Calibration Number	1
Test Fuel Type	61 - Tier 2 Cert Gasoline	Fuel Batch Calibration Date	02/14/2022
Fuel Batch Calibration Effective Date	02/14/2022	Fuel Batch Calibration Ineffective Date	02/14/2025
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.743
Fuel Ethanol Volume Percent (%)	--	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	18435
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.867	Weight Fraction CO2	--
Fuel Batch ID	26757	Fuel Calibration Number	1
Test Fuel Type	46 - CARB LEV3 E10 Regular Gasoline	Fuel Batch Calibration Date	07/27/2017
Fuel Batch Calibration Effective Date	07/27/2017	Fuel Batch Calibration Ineffective Date	07/27/2032
Carbon Weight Fraction NMHC	--	Carbon Weight Fraction HC	--
Exhaust Carbon Weight Fraction	--	Fuel Methanol Volume Fraction	--
Fuel Density (grams/cubic ft)	--	Fuel Specific Gravity	0.749
Fuel Ethanol Volume Percent (%)	9.8	Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)	17958
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	Fuel Carbon Mass Fraction (E10)	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.827	Weight Fraction CO2	--

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
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Consolidated List of Standards

Exhaust Standards

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	California LEV-IV ULEV50
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	--	--	--	--	--	--	0.44	1.7
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0040	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0003	0.003

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	California LEV-IV ULEV50
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	--	--	--	--	--	--	0.14	10.0

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	California LEV-IV ULEV50
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	--	--	--	--	--	--	0.44	1.7
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0040	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	Federal Tier 3 Bin 50
Fuel	Gasoline	Test Procedure	Federal fuel 2-day exhaust (w/can load)

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
120,000 miles	CREE	--	--	--	--	--	--	0.446570	999
120,000 miles	METHANE	--	--	--	--	--	--	0.0068	0.030
120,000 miles	N2O	--	--	--	--	--	--	0.0008	0.010
150,000 miles	CO	--	--	--	--	--	--	0.44	1.7
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	HCHO	--	--	--	--	--	--	--	0.004
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0040	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.050
150,000 miles	NMOG+NOX-COMP	--	--	--	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0003	0.003

Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	Federal Tier 3 Bin 50
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	--	--	--	--	--	--	0.44	99.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0040	99.999
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999
150,000 miles	PM	--	--	--	--	--	--	0.0003	0.006

Certification Summary Information Report

Test Group		VHYXV03.5HT5			Evaporative/Refueling Family			VHYXR0142HPG		
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50		
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	--	--	--	--	--	--	--	1.7	
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016	
4,000 miles	NMOG	--	--	1.10	--	--	--	--	99.999	
4,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.100	
4,000 miles	NOX	--	--	--	--	--	--	--	99.999	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50		
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	--	--	--	0.0040	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.050	
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999	

Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			California LEV-IV ULEV50		
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	--	--	--	--	--	--	0.44	9.6	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0040	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.060	
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999	
150,000 miles	PM	--	--	--	--	--	--	0.0003	0.006	

Certification Summary Information Report

Test Group		VHYXV03.5HT5			Evaporative/Refueling Family			VHYXR0142HPG		
Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50		
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	--	--	--	--	--	--	0.14	10.0	
120,000 miles	HC-NM	--	--	--	--	--	--	0.0029	0.3	

Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50		
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	--	--	--	--	--	--	0.44	99.999	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0040	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	99.999	
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999	

Cert Region		Federal			Cert/In-Use Code			Cert		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 50		
Fuel		Gasoline			Test Procedure			HWFE		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
120,000 miles	CREE	--	--	--	--	--	--	0.446570	999	
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0040	99.999	
150,000 miles	NMOG+NOX	--	--	--	--	--	--	0	0.050	
150,000 miles	NOX	--	--	--	--	--	--	0.0000	99.999	

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG		
Evaporative/Refueling Family	VHYXR0142HPG	Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)		
Cert/In-Use Code	Cert	Standard Level			
Test Procedure	California Fuel Running Loss				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.05	0
Evaporative/Refueling Family	VHYXR0142HPG	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	0.003
Evaporative/Refueling Family	VHYXR0142HPG	Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)		
Cert/In-Use Code	Cert	Standard Level			
Test Procedure	CA fuel 3-day evap.				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.300	0
Evaporative/Refueling Family	VHYXR0142HPG	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
Evaporative/Refueling Family	VHYXR0142HPG	Cert Region	California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)		
Cert/In-Use Code	Cert	Standard Level			
Test Procedure	Federal fuel refueling test (ORVR)				
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.20	0.003

Certification Summary Information Report

Test Group		VHYXV03.5HT5	Evaporative/Refueling Family		VHYXR0142HPG
Evaporative/Refueling Family		VHYXR0142HPG	Cert Region		California + CAA Section 177 states
Cert/In-Use Code		Cert	Standard Level		California LEV-IV Zero Evap (Option 2)
Test Procedure		Evap Canister Bleed Test			
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL	--	0.020	0
Evaporative/Refueling Family		VHYXR0142HPG	Cert Region		California + CAA Section 177 states
Cert/In-Use Code		Cert	Standard Level		California LEV-IV Zero Evap (Option 2)
Test Procedure		Leak Test - Port Near Fuel Pipe			
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0
Evaporative/Refueling Family		VHYXR0142HPG	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		VHYXR0142HPG	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		VHYXR0142HPG	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

Certification Summary Information Report

Test Group		VHYXV03.5HT5		Evaporative/Refueling Family		VHYXR0142HPG	
Evaporative/Refueling Family		VHYXR0142HPG		Cert Region		California + CAA Section 177 states California LEV-IV Zero Evap (Option 2)	
Cert/In-Use Code		Cert		Standard Level			
Test Procedure		Leak Test - Port Near Canister					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	LEAK-DIA	--	0.02	0		
Evaporative/Refueling Family		VHYXR0142HPG		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		VHYXR0142HPG		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		VHYXR0142HPG		Cert Region		Federal	
Cert/In-Use Code		Cert		Standard Level		Federal Tier 3 Evap	
Test Procedure		Evap Canister Bleed Test					
Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF		
Gasoline	150,000 miles	HC-TOTAL	--	0.020	0		

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
Glossary			
Useful Life			
4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		
Emission Name			
HC-TOTAL	Total Hydrocarbon	AS-VOLT	Average System Voltage
CO	Carbon Monoxide	CO2 BAG 1	Bag 1 Carbon Dioxide
CO2	Carbon dioxide	CO2 BAG 2	Bag 2 Carbon Dioxide
CREE	Carbon-Related Exhaust Emissions	CO2 BAG 3	Bag 3 Carbon Dioxide
OPT-CREE	Optional Carbon-Related Exhaust Emissions	CO2 BAG 4	Bag 4 Carbon Dioxide
NOX	Nitrogen Oxide	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
PM	Particulate Matter	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
PM-COMP	SFTP Composite Particulate Matter	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM	Non-methane Hydrocarbon	DT-ASCR	Drive Trace Absolute Speed Change Rating
OMHCE	Organic material Hydrocarbon Equivalent	DT-EER	Drive Trace Energy Economy Rating
OMNMHCE	Organic material non-methane HC equivalent	COMB-CREE	Combined Carbon-Related Exhaust Emissions
NMOG	Non-methane organic gases	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
HCHO	Formaldehyde	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
H3C2HO	Acetaldehyde	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	LEAK-DIA	Effective Leak Diameter (inches)
CO-COMP	SFTP Composite Carbon Monoxide	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
ETHANOL	C2H5OH - Ethanol	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
FE BAG 1	Bag 1 Fuel Economy	KW-HRS	Integrated DC KW-HRS
FE BAG 2	Bag 2 Fuel Economy	CH4 BAG 1	Bag 1 Methane
FE BAG 3	Bag 3 Fuel Economy	CH4 BAG 2	Bag 2 Methane
FE BAG 4	Bag 4 Fuel Economy	CH4 BAG 3	Bag 3 Methane
MFR FE	Manufacturer Fuel Economy	CH4 BAG 4	Bag 4 Methane
HC	Hydrocarbon for Running Loss and ORVR	CO BAG 1	Bag 1 Carbon Monoxide
METHANE	CH4 - Methane	CO BAG 2	Bag 2 Carbon Monoxide
METHANOL	CH3OH - Methanol	CO BAG 3	Bag 3 Carbon Monoxide
N2O	Nitrous Oxide	CO BAG 4	Bag 4 Carbon Monoxide
SPITBACK	Spitback Hydrocarbon in grams	NMOG BAG 1	Bag 1 Non-methane organic gases
AMP-HRS	Integrated Amp-hours	NMOG BAG 2	Bag 2 Non-methane organic gases
START-SOC	System Start State of Charge Watt-hours	NMOG BAG 3	Bag 3 Non-methane organic gases
END-SOC	System End State of Charge Watt-hours	NMOG BAG 4	Bag 4 Non-methane organic gases
ACT-DISTANCE	Actual Distance Driven (miles)		
Certification Region			

Certification Summary Information Report

Test Group	VHYXV03.5HT5	Evaporative/Refueling Family	VHYXR0142HPG
CA	California + CAA Section 177 states	FA	Federal
Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	T3B160	Federal Tier 3 Bin 160
B2	Federal Tier 2 Bin 2	T3B125	Federal Tier 3 Bin 125
B3	Federal Tier 2 Bin 3	T3B110	Federal Tier 3 Transitional Bin 110
B4	Federal Tier 2 Bin 4	T3B85	Federal Tier 3 Transitional Bin 85
B5	Federal Tier 2 Bin 5	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover
B6	Federal Tier 2 Bin 6	T3B70	Federal Tier 3 Bin 70
B7	Federal Tier 2 Bin 7	T3B50	Federal Tier 3 Bin 50
B8	Federal Tier 2 Bin 8	T3B30	Federal Tier 3 Bin 30
B9	Federal Tier 2 Bin 9	T3B20	Federal Tier 3 Bin 20
B10	Federal Tier 2 Bin 10	T3B0	Federal Tier 3 Bin 0
B11	Federal Tier 2 Bin 11	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
L2	California LEV-II LEV	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
L2OP	California LEV-II LEV Optional	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
U2	California LEV-II ULEV	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
S2	California LEV-II SULEV	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
ZEV	California ZEV	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
OT	Other	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
T1	Federal Tier 1	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
PZEV	California PZEV	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
L2LEV160	California LEV-II LEV160	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
L2ULEV125	California LEV-II ULEV125	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
L2SULEV30	California LEV-II SULEV30	HDV3B0	Federal Tier 3 HD Class 3 Bin 0
L2LEV395	California LEV-II LEV395	L4SULEV100	California LEV-IV SULEV100
L2ULEV340	California LEV-II ULEV340	L4SULEV125	California LEV-IV SULEV125
L2LEV630	California LEV-II LEV630	L4SULEV15	California LEV-IV SULEV15
L2ULEV570	California LEV-II ULEV570	L4SULEV150	California LEV-IV SULEV150
L3LEV160	California LEV-III LEV160	L4SULEV170	California LEV-IV SULEV170
L3ULEV125	California LEV-III ULEV125	L4SULEV175	California LEV-IV SULEV175
L3ULEV70	California LEV-III ULEV70	L4SULEV20	California LEV-IV SULEV20
L3ULEV50	California LEV-III ULEV50	L4SULEV200	California LEV-IV SULEV200
L3SULEV30	California LEV-III SULEV30	L4SULEV230	California LEV-IV SULEV230
L3SULEV20	California LEV-III SULEV20	L4SULEV25	California LEV-IV SULEV25
L3LEV395	California LEV-III LEV395	L4SULEV30	California LEV-IV SULEV30
L3ULEV340	California LEV-III ULEV340	L4SULEV75	California LEV-IV SULEV75
L3ULEV250	California LEV-III ULEV250	L4SULEV85	California LEV-IV SULEV85
L3ULEV200	California LEV-III ULEV200	L4ULEV125	California LEV-IV ULEV125

Certification Summary Information Report

Test Group		VHXYV03.5HT5	Evaporative/Refueling Family	VHXYR0142HPG
L3SULEV170	California LEV-III SULEV170		L4ULEV200	California LEV-IV ULEV200
L3SULEV150	California LEV-III SULEV150		L4ULEV250	California LEV-IV ULEV250
L3LEV630	California LEV-III LEV630		L4ULEV270	California LEV-IV ULEV270
L3ULEV570	California LEV-III ULEV570		L4ULEV40	California LEV-IV ULEV40
L3ULEV400	California LEV-III ULEV400		L4ULEV400	California LEV-IV ULEV400
L3ULEV270	California LEV-III ULEV270		L4ULEV50	California LEV-IV ULEV50
L3SULEV230	California LEV-III SULEV230		L4ULEV60	California LEV-IV ULEV60
L3SULEV200	California LEV-III SULEV200		L4ULEV70	California LEV-IV ULEV70
Transmission Type Code				
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual	
A	Automatic	OT	Other	
AM	Automated Manual	SA	Semi-Automatic	
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code				
4	4-Wheel Drive	P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front	A	All Wheel Drive	
R	2-Wheel Drive, Rear			
Additional Terms and Acronyms				
AFC	Alternative Fuel Converter	ICI	Independent Commercial Importer	
CSI	Certificate Summary Information	ORVR	Onboard Refueling Vapor Recovery	
DF	Deterioration Factor	SIL	Shift Indicator Light	
Evap	Evaporation, Evaporative	Trans	Transmission	