Application for Emissions Certification

Model Year:	2027
Test Group:	VASXV04.0AEH
Evaporative Families:	VASXR0138T3V
Durability Group:	VASXGHGVNE26
Certification Summary Information Report #'s (CSI)	VASXV04.0AEH-VASXR0138T3V
Durability Group Description:	Four Stroke, Otto Cycle Gasoline Direct Fuel Injection, Pressure Charged Induction, Catalyst Code: E26 Ceramic Monolith, Pd/Rh Catalyst, GPF
Test Group Description:	4.0 litre, 2WU-TWC/2TWCcGPF/2WR-H02S/2HO2S/2TC/2CAC/DFI
Applicable Standards:	50 state - EPA T3 Bin70, CARB LEV4 ULEV 70
Car Lines Covered:	303 - Valhalla

Vehicles Tested:	EDV	Config	Test	VERIFY Test Number
Exhaust		00	UDDS	TASX10092339
			HWFET	TASX10092361
			Cold CO	TASX10092362
			SC03	TASX10092363
			US06 - 2 bag	TASX10092364
			50F	TASX10092365
			UDDS CD	TASX10092672
			HWY CD	TASX10092673

EPA Response Requested By: May 15, 2026

For questions, Contact: Sean Giffels (501) 454 1800

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1. Correspondence and Communications

1.1. Authorized Persons

1.1.1. Persons situated in the United Sates and authorized to communicate with EPA and CARB

Name	First Name	Area of responsibility	Phone Number	E-Mail
Giffels	Sean	Product Planning Executive	(501) 454 1800	sean.giffels@astonmartin.com

The preceding representative can be reached under:

Aston Martin North America
Product Planning
11 West 42nd Street, 22nd Floor
New York, NY10036
USA

Fax-No.: (949) 379 3140

1.1.2. Generic email Address

Email address for transmitting information relevant to the Application and for delivering electronic certificates.

amlegiscert@astonmartin.com

1.1.3. Persons situated in the manufacturers home office and authorized to communicate with EPA and CARB

Name	First Name	Area of responsibility	Phone Number	E-Mail
Naughton	Simon	Head of Legislation & Certification	00 44 1926 644090	simon.naughton@astonmartin.com
Gillibrand	Karl	Manager Powertrain Certification	00 44 1926 644159	karl.gillibrand@astonmartin.com
Haggett	Martin	Powertrain Certification Expert	00 44 7484 676255	martin.haggett@astonmartin.com
Johnson	Philip	Project Engineer Legislation & Certification.	00 44 1926 644159	philip.johnson@astonmartin.com
Ames	Peter	Project Engineer Legislation & Certification.	00 44 1926 644051	peter.ames@astonmartin.com

The preceding representatives can be reached under:

Aston Martin Lagonda Ltd
Legislation & Certification Dept
Banbury Road, Gaydon
Warwick CV35 0DB
U.K.

Fax-No. 00 44 1926 644001

1.2. Certificate Information

1.2.1. Corporate Name and Address that should appear on the Certificate of Conformity and on the Executive Order

Aston Martin Lagonda Ltd
Banbury Road, Gaydon
Warwick
CV35 0DB
U.K.

1.2.2. Name and Address of the person to whom the Certificate and the Executive Order should be mailed

Aston Martin Lagonda Ltd
Legislation & Certification Dept
Banbury Road, Gaydon
Warwick CV35 0DB
U.K.

Electronic certificates can be e-mailed to: amlegiscert@astonmartin.com

1.3. Primary Certification Contact:

Primary Certification Contact See Section 1.1.1.

2. Durability Group Description

2.1.	Durability Group Name	VASXGHGVNE26
2.2.	Combustion Cycle	Four stroke, Otto cycle, piston
2.3.	Engine Type	V8 Turbocharged PHEV
2.4.	Fuel	Gasoline
2.5.	Basic Fuel Metering System	Direct fuel injection
2.6.	Catalyst Construction	Ceramic primary catalysts and secondary 3 way catalysts with intermediate GPFs
2.7.	Precious Metals in Catalyst	Palladium and Rhodium 3-Way
2.8.	Range of Catalyst Grouping Statistic	7.8g/litre (determined from grouping statistic equation).

3. Evaporative/Refueling Family Description

3.1. Evaporative/Refueling Family VASXR0138T3V

3.2. Evaporative/Refueling Family Parameters specified in 40 CFR § 86.1821-01:

3.2.1.	Type of vapor storage device	Canister
3.2.2.	Canister Parameters:	
	Basic canister design	Tapered oval cylinder with buffer, integral end plates, with bleed control function
	Working capacity	138 g
	System configuration	Single canister
	Canister geometry, construction and materials	Oval cylinder, center buffer, bleed control function, nylon 2 piece body with integral end plates, fittings with multi o-ring quickfit connections to vapor lines
3.2.3.	Fuel system	Non-return type
3.2.4.	Type of refueling emission control system	Non Integrated, controlled venting to carbon canister
3.2.5.	Fill pipe seal mechanism	Liquid seal
3.2.6.	Vapor control system	Sealed system with controlled vent to carbon canister, fill limit vent valve, rollover valves and vent lines internal to the fuel tank
3.2.7.	Purge control system	Twin PWM control purge valves with feedback
3.2.8.	Vapor hose material	Nylon multi-layer with PVDF barrier
3.2.9.	Fuel tank material	Aluminum, polycarbonate outer casing

3.3. ORVR Statement

Refuelling family reviewed by EPA / NHTSA

Date of EPA/NHTSA Submittal	Date of EPA/NHTSA Approval	Refuelling Family	Vehicle Models	Model Year
08/11/2004	08/17/2004	5ASXR0160803	DB9	2005

To be certified for Model Year 2027:

Date of EPA Part 1 Submittal	Evaporative/Refuelling Family	Respective ORVR Vehicle Model
04/24/2026	VASXR0138T3V (in combination with Test Group VASXV04.0AEH)	Valhalla

We herewith certify, that compared with the reviewed certification of the refuelling family mentioned above, there are no changes regarding the refuelling emission system design on Valhalla that requires a new or significantly revised refuelling family to be created.

The evaporative/refuelling family to be certified for model year 2027 includes the use of EPA assigned deterioration factors (DFs) as published in CD 2023-01 and as advised the use of these factors for Tier 3 and Tier 4 certifications.

There have been no in-use problems or defects related to Aston Martin ORVR systems that required action by Aston Martin Lagonda Ltd.

There have been no service notifications, campaigns, instructions or bulletins to dealers or field personal or changes in production procedures or components. No safety-related defect campaigns have been conducted related to the Aston Martin ORVR systems.

This information covers all the required items of CCD-05-03.

4. Durability Procedure Description

4.1. Description of Durability process used:

4.1.1.	Durability Program for Exhaust Emissions:	Manufacturer conducted ADP with manufacturer assigned DFs
4.1.2.	Durability Program for Evaporative/Refueling Emissions:	Not applicable - use of EPA assigned DFs from 2022MY onward

4.2. Deterioration Factors

4.2.1.	Exhaust Emissions:	Manufacturer assigned additive deterioration factors. For deterioration factors refer to the confidential information in Section 16 and to the Summary Sheet enclosed in Section 7 of this application.
4.2.2	Evaporative/Refueling Emissions:	EPA assigned deterioration factors. - as shown in CD-2023-01.

5. Test Group Description

5.1.	**Test Group Name**	VASXV04.0AEH
5.2.	**Certification Summary Information Report # (CSI)**	VASXV04.0AEH-VASXR0138T3V
5.3.	**Engine Displacement**	3982cm³ (243 in.³).
5.4.	**Arrangement and number of cylinders:**	
5.4.1.	Arrangement of cylinders	V - Configuration
5.4.2.	Number of cylinders	8
5.5.	**Emission Standards**	
5.5.1.	Vehicle class covered	EPA - LDV California and green states - PC
5.5.2.	Emission Standards class	50 state Tier 3 Bin70, LEV4 ULEV70
5.5.3.	EVAP Emissions Standards Class	Tier 3/LEV 4
5.5.4.	Applicable Emission Standards	Refer to the CSI in Section 7 and section 17.7

6. Test Vehicle Description

6.1. Test Vehicles

Line No.	EDV/FEDV	Config No.	Engine Displ (cm^3)	Emission Control System	Engine Code	Trans	ETW	Axle Ratio	Remarks
1	003PP0362	00	3982	2WU-TWC/2TWCcGPF/2WR-H02S/2HO2S/2TC/2CAC/DFI	AE26	DCT8	4500	4.24	EDV – UDDS, HWFET, Cold CO, US06, SC03 and 50F EDV - UDDS & HWY FCT FEDV - UDDS & HWFET (Tier 2 fuel)
2	003PP0360	00	3982	2WU-TWC/2TWCcGPF/2WR-H02S/2HO2S/2TC/2CAC/DFI	AE26	DCT8	4500	4.24	EDV - Evaporative Tests

For complete vehicle descriptions, refer to the Summary Sheet enclosed in Section 7 of this application.

6.2. EDV Selection

003PP0362

All the vehicle configurations certified are covered by data from the above EDV(s)

6.3. VERIFY Test Numbers:

EDV No.	Type of Test	VERIFY Test No.
003PP0362	UDDS	TASX10092339
	HWFET	TASX10092361
	COLD CO (20F)	TASX10092362
	SC03	TASX10092363
	US06 - 2 bag test	TASX10092364
	50F	TASX10092365
	UDDS CD	TASX10092672
	HWY CD	TASX10092673
003PP0360	2 Day Evap	TASX10092390
	3 Day Evap	TASX10092404
	ORVR	TASX10092394
	Leak Family	TASX10092445

7. Certification Summary Information Reports

For requested information refer to the attached CSI Sheets processed by EVCIS:

Enclosure No.	CSI Report #	Date
1	VASXV04.0AEH-VASXR0138T3V	04/24/2026

The CSI report is appended following this page:

(47 pages)

Certification Summary Information Report

Manufacturer	Aston Martin Lagonda	**Manufacturer Code**	ASX
Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	03/31/2026 09:18:18 AM
Model Year	2027		

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test Group Information

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

Drive Sources and Fuel(s)

Drive Source #1: Electric Motor

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Electricity	--	No

Drive Source #2: Combustion Engine

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

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	Yes
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	Yes
Fuel Cell Indicator	No	**EPA Vehicle Class**	LDV
Federal Clean Fuel Vehicle	Yes	**Federal Clean Fuel Vehicle Standard**	ULEV
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	No
Durability Group Name	VASXGPGNNE26	**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**	--
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	VASXJ04.0AEX
Test Group OBD Compliance Level	Partial - with deficiencies	**Number of Test Group OBD Deficiencies**	1
OBD Deficiencies Comments	OBD on UDS		
Mfr Test Group Comments	Carryover application for 2027 model year		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Evaporative/Refueling Family Information

Evaporative Summary Information Type	Update for Correction	**Submission/Correction Date**	03/31/2026 09:12:51 AM
Integrated ORVR?	No	**Fuel(s)**	Electricity, Gasoline
Multiple Fuel Storage	Fuels Stored Separately		
Bladder Fuel Tank?	No		
Fuel Tank Material	Metal	**Fuel Tank Material Description**	Aluminum
Fill Pipe Seal Type	Liquid seal		
Air Intake System Vapor Storage Device?	No	**Air Intake System Vapor Storage Device Description**	--
Fuel System Vapor Storage Canister?	Yes	**Other Vapor Storage**	--
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	138	**Number of Primary Canisters**	1
Number of Bleed Canisters	0	**Bleed Canister Total Working Capacity (grams)**	--
Mfr Evaporative/Refueling Family Comments	Specific NIRCOS Evap Family, so integrated ORVR=No		

Leak Family Details

Leak Family Indicator	Yes		
Canister Bleed Test Indicator	No	**Applicability of Evaporative Canister Bleed Test**	--
Evaporative Canister Bleed Test Comments	--		
CARB Fuel Only (Rig) Test Indicator	No	**Applicability of CARB Fuel Only (Rig) Test**	--
CARB Fuel Only (Rig) Test Comments	--		

Leak Family Name	Applicability of Leak Family Requirements	Leak Family Standard (inches)	Leak Family Description
VASXR0138T3V-001	50 State	0.02	Valhalla specific family

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
Aston Martin Lagonda	1 - Aston Martin Lagonda Ltd	303 - Valhalla	Federal	All Wheel Drive	Automatic	8	Yes
Aston Martin Lagonda	1 - Aston Martin Lagonda Ltd	303 - Valhalla	California + CAA Section 177 states	All Wheel Drive	Automatic	8	Yes

Engine Description

Hybrid Type	IC Engine/Electric Motor	**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**	0W40
Number of Cylinders/Rotors	8	**Mechanically Variable Compression Ratio Indicator**	N

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
2	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
3	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
4	Three-way catalyst	Palladium + Rhodium	Ceramic	Monolith
5	Other	Uncoated GPF	Ceramic	Monolith
6	Other	Uncoated GPF	Ceramic	Monolith

Mfr After Treatment Device (ATD) Comments	Warm up primary element per bank, separate GPF plus a secondary element per bank.
Direct Ozone Reduction (DOR) Device	Not Equipped
Mfr Emission Control Device Comments	--

Engine Configuration Number 1

Engine Displacement (liters)	4.0	**Engine Rated Horsepower**	818
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**	Air
Air Aspiration Drive Method(s)	Hydraulic		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	Yes		
Variable Valve Timing System Description	Inlet and Exhaust Cam Phasing		
Variable Valve Lift?	No		
Variable Valve Lift System Description	--		
Number of Knock Sensors	4	**Number of Air/Fuel Sensors**	4
Air/Fuel Sensor # 1 Type	Heated oxygen	**Air/Fuel Sensor # 1 Description**	--
Air/Fuel Sensor # 2 Type	Heated oxygen	**Air/Fuel Sensor # 2 Description**	--
Air/Fuel Sensor # 3 Type	Heated oxygen	**Air/Fuel Sensor # 3 Description**	--
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	Not Applicable	**Air Injection Type if 'Other'**	--
Mfr Engine Configuration Comments	--		

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

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	TASX10092339	TASX10092364	TASX10092363	TASX10092362	TASX10092361	--	--	--	--	--
Gasoline	TASX10092339	TASX10092364	TASX10092363	TASX10092362	TASX10092361	13.5	13.3	18.8	17.7	--

SFTP LEV-III Official Test Numbers

Test Group Fuel	FTP	US06	SC03
Gasoline	TASX10092339	TASX10092364	TASX10092363
Electricity	TASX10092339	TASX10092364	TASX10092363

Official Charge Depleting Test Numbers

Test Group Fuel	UDDS	Highway
Electricity	TASX10092672	TASX10092673
Gasoline	TASX10092672	TASX10092673

Hybrid Electric Vehicle And Fuel Cell Information

Rechargable Energy Storage System	Battery(s)	**Rechargable Energy Storage System, if Other**	--
Battery Type	Lithium Ion	**Number of Battery Packs**	1
Total Voltage of Battery Packs	409	**Battery Energy Capacity**	15
Battery Specific Energy	67	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Front Wheels	**Driver Controlled Regenerative Braking**	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	3		
Motor/Generator Type 1	AC Interior permanent magnet	**Rated Motor/Generator Power**	112
Motor/Generator Type 2	AC Interior permanent magnet	**Rated Motor/Generator Power**	155
Motor/Generator Type 3	AC Interior permanent magnet	**Rated Motor/Generator Power**	112
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	Front P4 LH, Front P4 RH plus P2.5 Rear integrated into transmission		

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Emission Data Vehicle Information

Vehicle ID / Configuration	003PP0360 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	TASXV04.0AEH	**Original Evaporative/Refueling Family**	TASXR0138T3V
Original Test Vehicle Model Year	2026		

Vehicle Model

Represented Test Vehicle Make	Aston Martin	**Represented Test Vehicle Model**	Valhalla

Leak Family Details

Leak Family Identifier	001	**Leak Family Name**	TASXR0138T3V-001

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline
2	Electric Motor	Electricity

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	Yes		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	0.9999
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	AE26/	**Rated Horsepower**	818
Displacement (liters)	4		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Air	**Drive Mode While Testing**	4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	3980	**Equivalent Test Weight (pounds)**	4500
GVWR (lbs)	--	**N/V Ratio**	25.9
Axle Ratio	4.24		
Transmission Type	Dual Clutch Transmission	**# of Transmission Gears**	8
Transmission Lockup	Yes	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	60.92	0.6491	0.0185	8.25	0.1036	0.0206	18.6
Cold CO	67.02	0.7138	0.0203	-1.06	0.4761	0.0272	N/A
US06	60.92	0.6491	0.0185	8.25	0.1036	0.0206	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments 2026MY Valhalla 8 speed DCT

Test #	**TASX10092390**	**Test Procedure**	**23 - 2-day evap**
Exhaust Test # for this Evap Test	TASX10092389	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	07/29/2025	**Fuel**	Gasoline
Fuel Batch ID	67414	**Fuel Calibration Number**	3406
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3760	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.321	--

Manufacturer Test Comments 2026MY Valhalla 2DD Evap

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	0.3210	0.0030	0.324	0.375	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3210	0.0030	0.324	0.400	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092404**	**Test Procedure**	**34 - Federal fuel 3-day evap**
Exhaust Test # for this Evap Test	TASX10092395	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/15/2025	**Fuel**	Gasoline
Fuel Batch ID	67414	**Fuel Calibration Number**	3406
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3801	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.3445	--

Manufacturer Test Comments 2026MY Valhalla 3DD evap

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	0.3445	0.0067	0.351	0.375	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.3445	0.0067	0.351	0.400	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092394**	**Test Procedure**	**24 - Federal fuel refueling test (ORVR)**
Exhaust Test # for this Evap Test	TASX10092389	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	10/02/2025	**Fuel**	Gasoline
Fuel Batch ID	67414	**Fuel Calibration Number**	3406
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	3875	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.009	--

Manufacturer Test Comments 2026MY Valhalla ORVR Test

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	0.01	0.005	0.0	0.2	Pass
CA	150,000 miles	California LEV-IV Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.01	0.005	0.0	0.2	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092403**	**Test Procedure**	**32 - Federal Fuel Running Loss**
Exhaust Test # for this Evap Test	TASX10092395	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/15/2025	**Fuel**	Gasoline
Fuel Batch ID	67414	**Fuel Calibration Number**	3406
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3801	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0009	--

Manufacturer Test Comments 2026MY Valhalla RLS

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	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092445**	**Test Procedure**	**66 - Leak Test - Evap Fuel System OBD**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	10/09/2025	**Fuel**	Gasoline
Fuel Batch ID	67414	**Fuel Calibration Number**	3406
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	3890	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

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

Manufacturer Test Comments Valhalla Leak Test family

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

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Emission Data Vehicle Information

Vehicle ID / Configuration	003PP0362 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	TASXV04.0AEH	**Original Evaporative/Refueling Family**	TASXR0138T3V
Original Test Vehicle Model Year	2026		

Vehicle Model

Represented Test Vehicle Make	Aston Martin	**Represented Test Vehicle Model**	Valhalla

Leak Family Details

Leak Family Identifier	001	**Leak Family Name**	TASXR0138T3V-001

Drive Sources and Fuel System Details

Drive Source and Fuel#	Drive Source	Fuel
1	Combustion Engine	Gasoline
2	Electric Motor	Electricity

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	--
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	Yes		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	0.9999
Odometer Correction Sign	- = System Miles is equal to (Test odometer reading - Initial system miles) * Correction factor		
Odometer Correction Units	Miles		
Engine Code	AE26/	**Rated Horsepower**	818
Displacement (liters)	4		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Air	**Drive Mode While Testing**	4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	3980	**Equivalent Test Weight (pounds)**	4500
GVWR (lbs)	--	**N/V Ratio**	25.9
Axle Ratio	4.24		
Transmission Type	Dual Clutch Transmission	**# of Transmission Gears**	8
Transmission Lockup	Yes	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Dynamometer Coefficients:

Coefficient Category	Target Coefficients A (lbf)	Target Coefficients B (lbf/mph)	Target Coefficients C (lbf/mph**2)	Set Coefficients A (lbf)	Set Coefficients B (lbf/mph)	Set Coefficients C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients
City/Highway/Evap	60.92	0.6491	0.0185	8.25	0.1036	0.0206	18.6
Cold CO	67.02	0.7138	0.0203	-1.06	0.4761	0.0272	N/A
US06	60.92	0.6491	0.0185	8.25	0.1036	0.0206	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments 2026MY Valhalla 8 speed DCT

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092339**	**Test Procedure**	**21 - Federal fuel 2-day exhaust (w/can load)**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/03/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4233	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	567.908	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.609	--
FE BAG 1 (Bag 1 Fuel Economy)	15.2506	15.2506
CH4 BAG 1 (Bag 1 Methane)	0.004	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.022	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	466.633	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.444	--
FE BAG 2 (Bag 2 Fuel Economy)	18.5663	18.5663
CH4 BAG 2 (Bag 2 Methane)	0	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0011	--
METHANE (CH4 - Methane)	0.002	--
CO (Carbon Monoxide)	0.515	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.75	--
DT-EER (Drive Trace Energy Economy Rating)	-0.36	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.48	--
HCHO (Formaldehyde)	0.0007	--
MFR FE (Manufacturer Fuel Economy)	16.6522	16.6522
NOX (Nitrogen Oxide)	0.004	--
N2O (Nitrous Oxide)	0.004	--
HC-NM (Non-methane Hydrocarbon)	0.009	--
NMOG (Non-methane organic gases)	0.0099	--
PM (Particulate Matter)	0.00081	--
HC-TOTAL (Total Hydrocarbon)	0.011	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	510	511

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	510.182	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 70	CO	0.52	--	--	--	0.07	--	0.6	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	CO-COMP	0.65	--	--	--	0	--	0.6	4.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	511	--	--	--	0.000	--	511	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	HCHO	0.0007	--	--	--	0.0003	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	METHANE	0.002	--	--	--	0.000	--	0.00	0.03	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	N2O	0.004	--	--	--	0.0043	--	0.01	0.01	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG	0.0099	1	1.10	--	0.0026	--	0.012	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	0.0139	--	1.10	--	--	--	0.021	0.070	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX-COMP	0.0126	--	1.10	--	0	--	0.013	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NOX	0.0040	--	--	--	0.0043	--	0.008	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	PM	0.0008	--	--	--	0	--	0.001	0.003	Pass
CA	150,000 miles	California LEV-IV ULEV70	CO	0.52	--	--	--	0.07	--	0.6	1.7	Pass
CA	150,000 miles	California LEV-IV ULEV70	CREE	511	--	--	--	0.000	--	511	--	--
CA	150,000 miles	California LEV-IV ULEV70	HCHO	0.0007	--	--	--	0.0003	--	0.001	0.004	Pass
CA	150,000 miles	California LEV-IV ULEV70	METHANE	0.002	--	--	--	0.000	--	0.00	0.03	Pass
CA	150,000 miles	California LEV-IV ULEV70	N2O	0.004	--	--	--	0.004	--	0.01	0.01	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG	0.0099	1	1.10	--	0.0026	--	0.012	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG+NOX	0.0139	--	1.10	--	--	--	0.021	0.070	Pass
CA	150,000 miles	California LEV-IV ULEV70	NOX	0.0040	--	--	--	0.0043	--	0.008	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	PM	0.0008	--	--	--	0	--	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	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092362**	**Test Procedure**	**11 - Cold CO**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/20/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4486	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	761.996	--
CO BAG 1 (Bag 1 Carbon Monoxide)	1.46	--
FE BAG 1 (Bag 1 Fuel Economy)	11.3415	11.3415
CH4 BAG 1 (Bag 1 Methane)	0.02	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.2513	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	697.223	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.63	--
FE BAG 2 (Bag 2 Fuel Economy)	12.44	12.44
CH4 BAG 2 (Bag 2 Methane)	0	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	556.583	--
CO BAG 3 (Bag 3 Carbon Monoxide)	0.51	--
FE BAG 3 (Bag 3 Fuel Economy)	15.5829	15.5829
CH4 BAG 3 (Bag 3 Methane)	0.001	--
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--
METHANE (CH4 - Methane)	0.005	--
CO (Carbon Monoxide)	0.43	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.59	--
DT-EER (Drive Trace Energy Economy Rating)	-0.01	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.6	--
MFR FE (Manufacturer Fuel Economy)	12.8961	12.8961
NOX (Nitrogen Oxide)	0.017	--
HC-NM (Non-methane Hydrocarbon)	0.047	--
NMOG (Non-methane organic gases)	0.0517	--
HC-TOTAL (Total Hydrocarbon)	0.0515	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	671.987	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

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 70	CO	0.4	--	--	--	0	--	0	10	Pass
Fed	50,000 miles	Federal Tier 3 Bin 70	HC-NM	0.05	--	--	--	0.000	--	0.0	0.3	Pass
CA	50,000 miles	California LEV-IV ULEV70	CO	0.4	--	--	--	0	--	0	10	Pass
CA	50,000 miles	California LEV-IV ULEV70	HC-NM	0.05	--	--	--	0.000	--	0.0	0.3	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092365**	**Test Procedure**	**51 - CA fuel 50 Deg(F) exhaust test**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/17/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4423	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	696.392	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.751	--
FE BAG 1 (Bag 1 Fuel Economy)	12.4362	12.4362
CH4 BAG 1 (Bag 1 Methane)	0.006	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0385	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	504.987	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.402	--
FE BAG 2 (Bag 2 Fuel Economy)	17.1604	17.1604
CH4 BAG 2 (Bag 2 Methane)	0.001	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--
METHANE (CH4 - Methane)	0.003	--
CO (Carbon Monoxide)	0.55	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-1.21	--
DT-EER (Drive Trace Energy Economy Rating)	-1.16	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-1.33	--
HCHO (Formaldehyde)	0.00056	--
MFR FE (Manufacturer Fuel Economy)	14.2726	14.2726
NOX (Nitrogen Oxide)	0.007	--
HC-NM (Non-methane Hydrocarbon)	0.0151	--
NMOG (Non-methane organic gases)	0.0166	--
HC-TOTAL (Total Hydrocarbon)	0.0178	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	587	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	587.292	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	50,000 miles	California LEV-IV ULEV70	CO	0.55	--	--	--	0	--	0.6	1.7	Pass
CA	50,000 miles	California LEV-IV ULEV70	HCHO	0.0006	--	--	--	0	--	0.001	0.016	Pass
CA	50,000 miles	California LEV-IV ULEV70	NMOG	0.0166	--	--	--	0	--	0.017	999.999	Pass
CA	50,000 miles	California LEV-IV ULEV70	NMOG+NOX	0.0236	1	1.10	--	--	--	0.02	0.14	Pass
CA	50,000 miles	California LEV-IV ULEV70	NOX	0.0070	--	--	--	0	--	0.007	999.999	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092361**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/03/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4249	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0004	--
CO (Carbon Monoxide)	0.3	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	4.48	--
DT-EER (Drive Trace Energy Economy Rating)	-0.27	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	5.5	--
MFR FE (Manufacturer Fuel Economy)	25.5	25.5
NOX (Nitrogen Oxide)	0	--
NMOG (Non-methane organic gases)	0	--
HC-TOTAL (Total Hydrocarbon)	0.0002	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	339	339

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	339.4374	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	339	--	--	--	0.00	--	339	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG	0.0000	--	1.03	--	0.0026	--	0.003	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	0.0000	--	1.03	--	--	--	0.007	0.070	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NOX	0.0000	--	--	--	0.0043	--	0.004	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	CREE	339	--	--	--	0.00	--	339	--	--
CA	150,000 miles	California LEV-IV ULEV70	NMOG	0.0000	--	1.10	--	0.0026	--	0.003	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG+NOX	0.0000	--	1.10	--	--	--	0.007	0.070	Pass
CA	150,000 miles	California LEV-IV ULEV70	NOX	0.0000	--	--	--	0.0043	--	0.004	999.999	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	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092364**	**Test Procedure**	**90 - US06**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/08/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4345	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	709.9	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.93	--
FE BAG 1 (Bag 1 Fuel Economy)	12.2	12.2
CH4 BAG 1 (Bag 1 Methane)	0.006	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0052	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	425.6	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.67	--
FE BAG 2 (Bag 2 Fuel Economy)	20.3	20.3
CH4 BAG 2 (Bag 2 Methane)	0.01	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.0113	--
METHANE (CH4 - Methane)	0.0089	--
CO (Carbon Monoxide)	0.73	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.62	--
DT-EER (Drive Trace Energy Economy Rating)	-1.6	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-4.2	--
MFR FE (Manufacturer Fuel Economy)	17.6	17.6
NOX (Nitrogen Oxide)	0.002	--
HC-NM (Non-methane Hydrocarbon)	0.01	--
NMOG (Non-methane organic gases)	0.0103	--
PM (Particulate Matter)	0.0032	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.012	--
HC-TOTAL (Total Hydrocarbon)	0.0175	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	493.201	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 70	CO	0.73	--	--	--	0.07	--	0.8	9.6	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG	0.0103	--	1.03	--	0	--	0.010	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	0.0123	--	1.03	--	--	--	0.012	0.084	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NOX	0.0020	--	--	--	0	--	0.002	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	CO	0.73	--	--	--	0.07	--	0.8	9.6	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG	0.0103	--	1.03	--	0	--	0.010	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG+NOX	0.0123	--	1.03	--	--	--	0.012	0.084	Pass
CA	150,000 miles	California LEV-IV ULEV70	NOX	0.0020	--	--	--	0	--	0.002	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	PM	0.0032	--	--	--	0	--	0.003	0.006	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092363**	**Test Procedure**	**95 - SC03**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/20/2025	**Fuel**	Gasoline
Fuel Batch ID	60626	**Fuel Calibration Number**	2739
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4527	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0035	--
CO (Carbon Monoxide)	0.509	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.54	--
DT-EER (Drive Trace Energy Economy Rating)	-1.58	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-2.24	--
MFR FE (Manufacturer Fuel Economy)	17.1	17.1
NOX (Nitrogen Oxide)	0.004	--
HC-NM (Non-methane Hydrocarbon)	0.0009	--
NMOG (Non-methane organic gases)	0.001	--
HC-NM+NOX (SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03)	0.0045	--
HC-TOTAL (Total Hydrocarbon)	0.0042	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	505.7825	--

Manufacturer Test Comments 2026MY Valhalla EDV

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 70	CO	0.51	--	--	--	0.07	--	0.6	3.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG	0.0010	--	1.03	--	0	--	0.001	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	0.0050	--	1.03	--	--	--	0.00	0.07	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NOX	0.0040	--	--	--	0	--	0.004	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	CO	0.51	--	--	--	0.07	--	0.6	3.2	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG	0.0010	--	1.03	--	0	--	0.001	999.999	Pass
CA	150,000 miles	California LEV-IV ULEV70	NMOG+NOX	0.0050	--	1.03	--	--	--	0.00	0.07	Pass
CA	150,000 miles	California LEV-IV ULEV70	NOX	0.0040	--	--	--	0	--	0.004	999.999	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092672**	**Test Procedure**	**81 - Charge Depleting UDDS**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	12/17/2025	**Fuel**	Gasoline
Fuel Batch ID	70811	**Fuel Calibration Number**	7042
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4820	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	409	**Recharge Event Energy (kiloWatt-hours)**	3.543
Charge Depleting Range (Calculated miles)	8.11	**Charge Depleting Range (Actual miles)**	8.11
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	2017
All Electric Range Unadjusted (miles)	8.11	**Equivalent All Electric Range (miles)**	5.97
Number of Charge Depleting Bags/Phases Conducted	3	**Transition Bag/Phase Number**	2

Charge Depleting Bag/Phase #1

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.44
Average System Voltage	413.36
CH4 - Methane	0.0057
Carbon Monoxide	0.48
Carbon dioxide	94.1
Carbon-Related Exhaust Emissions	94
Drive Trace Absolute Speed Change Rating	-0.803
Drive Trace Energy Economy Rating	-0.777
Drive Trace Inertia Work Ratio Rating	-1.113
Integrated Amp-hours	8.76
Manufacturer Fuel Economy	94.14
Nitrogen Oxide	0.006
Non-methane Hydrocarbon	0.0244
Non-methane organic gases	0.0268
Non-methane organic gases plus Nitrogen Oxides	999.999
Particulate Matter	0.0004
Total Hydrocarbon	0.0295

Charge Depleting Bag/Phase #2

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.42
Average System Voltage	400.55
CH4 - Methane	0.0018
Carbon Monoxide	0.43
Carbon dioxide	474.9
Carbon-Related Exhaust Emissions	475
Drive Trace Absolute Speed Change Rating	-0.472
Drive Trace Energy Economy Rating	-0.532
Drive Trace Inertia Work Ratio Rating	-0.27
Integrated Amp-hours	8.76
Manufacturer Fuel Economy	18.77
Nitrogen Oxide	0.001
Non-methane Hydrocarbon	0.0018
Non-methane organic gases	0.002
Non-methane organic gases plus Nitrogen Oxides	999.999
Particulate Matter	0.001
Total Hydrocarbon	0.0034

Charge Depleting Bag/Phase #3

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	7.43
Average System Voltage	400.53
CH4 - Methane	0.0013
Carbon Monoxide	0.41
Carbon dioxide	465.5
Carbon-Related Exhaust Emissions	466
Drive Trace Absolute Speed Change Rating	-0.835
Drive Trace Energy Economy Rating	-0.651
Drive Trace Inertia Work Ratio Rating	-1.035
Integrated Amp-hours	8.76
Manufacturer Fuel Economy	19.15
Nitrogen Oxide	0.001
Non-methane Hydrocarbon	0.0005
Non-methane organic gases	0.0006
Non-methane organic gases plus Nitrogen Oxides	999.999
Particulate Matter	0.0005
Total Hydrocarbon	0.0017

Manufacturer Test Comments 2026MY Valhalla EDV Correction for E0 70811 Batch based UDDS FCT test

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 70	CREE	94	--	--	--	0	--	94	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	466	--	--	--	0	--	466	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	475	--	--	--	0	--	475	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Test #	**TASX10092673**	**Test Procedure**	**84 - Charge Depleting Highway**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	01/22/2026	**Fuel**	Gasoline
Fuel Batch ID	70811	**Fuel Calibration Number**	7042
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA Automotive Technology SA		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	5015	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	409	**Recharge Event Energy (kiloWatt-hours)**	3.472
Charge Depleting Range (Calculated miles)	10.27	**Charge Depleting Range (Actual miles)**	8.16
Charge Depleting Range Highway (Calculated miles)	--	**Derived 5-Cycle Coefficient Model Year**	2017
All Electric Range Unadjusted (miles)	8.16	**Equivalent All Electric Range (miles)**	7.5
Number of Charge Depleting Bags/Phases Conducted	4	**Transition Bag/Phase Number**	2

Charge Depleting Bag/Phase #1

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.27
Average System Voltage	412.01
CH4 - Methane	0.0042
Carbon Monoxide	0.35
Carbon dioxide	92.8
Carbon-Related Exhaust Emissions	93
Drive Trace Absolute Speed Change Rating	5.44
Drive Trace Energy Economy Rating	0.521
Drive Trace Inertia Work Ratio Rating	7.011
Integrated Amp-hours	8.7
Manufacturer Fuel Economy	95.58
Nitrogen Oxide	0.005
Non-methane Hydrocarbon	0.0196
Non-methane organic gases	0.0216
Non-methane organic gases plus Nitrogen Oxides	999.999
Total Hydrocarbon	0.0234

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Charge Depleting Bag/Phase #2

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.27
Average System Voltage	404.7
CH4 - Methane	0.0003
Carbon Monoxide	0.26
Carbon dioxide	344.4
Carbon-Related Exhaust Emissions	344
Drive Trace Absolute Speed Change Rating	6.881
Drive Trace Energy Economy Rating	0.261
Drive Trace Inertia Work Ratio Rating	9.088
Integrated Amp-hours	8.7
Manufacturer Fuel Economy	25.89
Nitrogen Oxide	0
Non-methane Hydrocarbon	0.0009
Non-methane organic gases	0.001
Non-methane organic gases plus Nitrogen Oxides	999.999
Total Hydrocarbon	0.0011

Charge Depleting Bag/Phase #3

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.27
Average System Voltage	405.08
CH4 - Methane	0.0003
Carbon Monoxide	0.25
Carbon dioxide	327
Carbon-Related Exhaust Emissions	327
Drive Trace Absolute Speed Change Rating	7.561
Drive Trace Energy Economy Rating	0.448
Drive Trace Inertia Work Ratio Rating	9.504
Integrated Amp-hours	8.7
Manufacturer Fuel Economy	27.27
Nitrogen Oxide	0
Non-methane Hydrocarbon	0.001
Non-methane organic gases	0.0011
Non-methane organic gases plus Nitrogen Oxides	999.999
Total Hydrocarbon	0.0013

Charge Depleting Bag/Phase #4

Certification Summary Information Report

Test Group VASXV04.0AEH **Evaporative/Refueling Family** VASXR0138T3V

Test Result/Emission Name	Unrounded Test Result
Actual Distance Driven (miles)	10.26
Average System Voltage	405.18
CH4 - Methane	0.0001
Carbon Monoxide	0.27
Carbon dioxide	329.3
Carbon-Related Exhaust Emissions	329
Drive Trace Absolute Speed Change Rating	5.155
Drive Trace Energy Economy Rating	0.025
Drive Trace Inertia Work Ratio Rating	6.076
Integrated Amp-hours	8.7
Manufacturer Fuel Economy	27.07
Nitrogen Oxide	0
Non-methane Hydrocarbon	0.0013
Non-methane organic gases	0.0014
Non-methane organic gases plus Nitrogen Oxides	999.999
Total Hydrocarbon	0.0023

Manufacturer Test Comments 2026MY Valhalla EDV E0 FCT

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NMHC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	93	--	--	--	0	--	93	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	327	--	--	--	0	--	327	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	344	--	--	--	0	--	344	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	CREE	329	--	--	--	0	--	329	--	--
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass
Fed	150,000 miles	Federal Tier 3 Bin 70	NMOG+NOX	999.9990	--	--	--	--	--	999.999	999.999	Pass

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Fuel Properties

Fuel Batch ID	**67414**	**Fuel Calibration Number**	**3406**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	11/19/2024
Fuel Batch Calibration Effective Date	11/19/2024	**Fuel Batch Calibration Ineffective Date**	11/19/2027
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.829	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.754
Fuel Ethanol Volume Percent (%)	9.7	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.775	**Fuel Carbon Mass Fraction (E10)**	0.829
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	**Weight Fraction CO2**	--

Fuel Batch ID	**60626**	**Fuel Calibration Number**	**2739**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	12/11/2023
Fuel Batch Calibration Effective Date	12/11/2023	**Fuel Batch Calibration Ineffective Date**	12/11/2026
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.825	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.754
Fuel Ethanol Volume Percent (%)	9.7	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	--
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.72	**Fuel Carbon Mass Fraction (E10)**	0.825
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	**Weight Fraction CO2**	--

Fuel Batch ID	**70811**	**Fuel Calibration Number**	**7042**
Test Fuel Type	61 - Tier 2 Cert Gasoline	**Fuel Batch Calibration Date**	03/07/2025
Fuel Batch Calibration Effective Date	03/07/2025	**Fuel Batch Calibration Ineffective Date**	03/07/2028
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.868	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.741
Fuel Ethanol Volume Percent (%)	--	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18405
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.868	**Weight Fraction CO2**	--

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

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 ULEV70
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	--	--	--	--	--	--	0.07	1.7
150,000 miles	CREE	--	--	--	--	--	--	0.000	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0003	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.000	0.03
150,000 miles	N2O	--	--	--	--	--	--	0.004	0.01
150,000 miles	NMOG	--	1	1.10	--	--	--	0.0026	999.999
150,000 miles	NMOG+NOX	--	--	1.10	--	--	--	0.007	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0043	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
Fuel	Gasoline	**Test Procedure**	Charge Depleting Highway

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	--	--	--	--	--	--	--	999.999
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	HC-NM	--	--	--	--	--	--	--	999.999
150,000 miles	HC-TOTAL	--	--	--	--	--	--	--	999.999
150,000 miles	MFR FE	--	--	--	--	--	--	--	999.999
150,000 miles	NMOG	--	--	--	--	--	--	--	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	999.999
150,000 miles	NOX	--	--	--	--	--	--	--	999.999

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
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	--	--	--	--	--	--	0.07	9.6
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0	999.999
150,000 miles	NMOG+NOX	--	--	1.03	--	--	--	0.007	0.084
150,000 miles	NOX	--	--	--	--	--	--	0	999.999
150,000 miles	PM	--	--	--	--	--	--	--	0.006

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
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	--	--	--	--	--	--	0.07	3.2
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0	999.999
150,000 miles	NMOG+NOX	--	--	1.03	--	--	--	0.007	0.07
150,000 miles	NOX	--	--	--	--	--	--	0	999.999

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-IV ULEV70
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	--	--	--	--	--	--	0.07	3.2
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0	999.999
150,000 miles	NMOG+NOX	--	--	1.03	--	--	--	0.007	0.07
150,000 miles	NOX	--	--	--	--	--	--	0	999.999

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V
Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
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	--	--	--	--	--	--	0.07	1.7
150,000 miles	CO-COMP	--	--	--	--	--	--	0	4.2
150,000 miles	CREE	--	--	--	--	--	--	0.000	999.999
150,000 miles	HCHO	--	--	--	--	--	--	0.0003	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0.000	0.03
150,000 miles	N2O	--	--	--	--	--	--	0.0043	0.01
150,000 miles	NMOG	--	1	1.10	--	--	--	0.0026	999.999
150,000 miles	NMOG+NOX	--	--	1.10	--	--	--	0.007	0.070
150,000 miles	NMOG+NOX-COMP	--	--	1.10	--	--	--	0	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0043	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.003

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
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	CREE	--	--	--	--	--	--	0.00	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0.0026	999.999
150,000 miles	NMOG+NOX	--	--	1.03	--	--	--	0.007	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0043	999.999

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-IV ULEV70
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	--	--	--	--	--	--	0.07	9.6
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	NMOG	--	--	1.03	--	--	--	0	999.999
150,000 miles	NMOG+NOX	--	--	1.03	--	--	--	0.007	0.084
150,000 miles	NOX	--	--	--	--	--	--	0	999.999
150,000 miles	PM	--	--	--	--	--	--	0	0.006

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-IV ULEV70
Fuel	Gasoline	**Test Procedure**	CA fuel 50 Deg(F) exhaust test

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	1.7
50,000 miles	CREE	--	--	--	--	--	--	0	999.999
50,000 miles	HCHO	--	--	--	--	--	--	0	0.016
50,000 miles	NMOG	--	--	--	--	--	--	0	999.999
50,000 miles	NMOG+NOX	--	1	1.10	--	--	--	0	0.14
50,000 miles	NOX	--	--	--	--	--	--	0	999.999

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-IV ULEV70
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	10
50,000 miles	CREE	--	--	--	--	--	--	0	999.999
50,000 miles	HC-NM	--	--	--	--	--	--	0.000	0.3

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
Fuel	Gasoline	**Test Procedure**	Charge Depleting UDDS

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	--	--	--	--	--	--	--	999.999
150,000 miles	CREE	--	--	--	--	--	--	0	999.999
150,000 miles	HC-NM	--	--	--	--	--	--	--	999.999
150,000 miles	HC-TOTAL	--	--	--	--	--	--	--	999.999
150,000 miles	MFR FE	--	--	--	--	--	--	--	999.999
150,000 miles	NMOG	--	--	--	--	--	--	--	999.999
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	999.999
150,000 miles	NOX	--	--	--	--	--	--	--	999.999

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 70
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	10
50,000 miles	CREE	--	--	--	--	--	--	0	999.999
50,000 miles	HC-NM	--	--	--	--	--	--	0.000	0.3

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-IV ULEV70
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	CREE	--	--	--	--	--	--	0.00	999.999
150,000 miles	NMOG	--	--	1.10	--	--	--	0.0026	999.999
150,000 miles	NMOG+NOX	--	--	1.10	--	--	--	0.007	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0043	999.999

Evaporative/Refueling Standards

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal Tier 3 Evap
Test Procedure	Federal 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	VASXR0138T3V	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
Test Procedure	Federal fuel refueling test (ORVR)		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.2	0.005

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
Test Procedure	Federal fuel 3-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0067

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal Tier 3 Evap
Test Procedure	Federal fuel 3-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.375	0.0067

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal Tier 3 Evap
Test Procedure	2-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.375	0.0030

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
Test Procedure	Federal Fuel 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	VASXR0138T3V	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal Tier 3 Evap
Test Procedure	Leak Test - Evap Fuel System OBD		

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

Evaporative/Refueling Family	VASXR0138T3V	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-IV Zero Evap (Option 2)
Test Procedure	2-day evap		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.400	0.0030

Evaporative/Refueling Family	VASXR0138T3V	**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	--	0.2	0.005

Evaporative/Refueling Family	VASXR0138T3V	**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 - Evap Fuel System OBD		

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

Certification Summary Information Report

Test Group	VASXV04.0AEH	Evaporative/Refueling Family	VASXR0138T3V

Glossary

Useful Life

4	4,000 miles	120	120,000 miles
50	50,000 miles	150	150,000 miles
100	100,000 miles		

Emission Name

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

Certification Summary Information Report

Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V
ACT-DISTANCE	Actual Distance Driven (miles)	WATT-HRS BAG 3	Bag 3 Watt Hours
AS-VOLT	Average System Voltage	WATT-HRS BAG 4	Bag 4 Watt Hours
CO2 BAG 1	Bag 1 Carbon Dioxide	WATT-HRS	Watt Hours
CO2 BAG 2	Bag 2 Carbon Dioxide	HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon
CO2 BAG 3	Bag 3 Carbon Dioxide	HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon
CO2 BAG 4	Bag 4 Carbon Dioxide	HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides	HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides	N2O BAG 1	Bag 1 Nitrous Oxide
DT-IWRR	Drive Trace Inertia Work Ratio Rating	N2O BAG 2	Bag 2 Nitrous Oxide
DT-ASCR	Drive Trace Absolute Speed Change Rating	N2O BAG 3	Bag 3 Nitrous Oxide
DT-EER	Drive Trace Energy Economy Rating	N2O BAG 4	Bag 4 Nitrous Oxide

Certification Region			
CA	California + CAA Section 177 states	FA	Federal

Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
B2	Federal Tier 2 Bin 2	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
B3	Federal Tier 2 Bin 3	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
B4	Federal Tier 2 Bin 4	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
B5	Federal Tier 2 Bin 5	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
B6	Federal Tier 2 Bin 6	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
B7	Federal Tier 2 Bin 7	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
B8	Federal Tier 2 Bin 8	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
B9	Federal Tier 2 Bin 9	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
B10	Federal Tier 2 Bin 10	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
B11	Federal Tier 2 Bin 11	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV3B0	Federal Tier 3 HD Class 3 Bin 0
L2	California LEV-II LEV	L4SULEV100	California LEV-IV SULEV100
L2OP	California LEV-II LEV Optional	L4SULEV125	California LEV-IV SULEV125
U2	California LEV-II ULEV	L4SULEV15	California LEV-IV SULEV15
S2	California LEV-II SULEV	L4SULEV150	California LEV-IV SULEV150
ZEV	California ZEV	L4SULEV170	California LEV-IV SULEV170
OT	Other	L4SULEV175	California LEV-IV SULEV175
T1	Federal Tier 1	L4SULEV20	California LEV-IV SULEV20
PZEV	California PZEV	L4SULEV200	California LEV-IV SULEV200
L2LEV160	California LEV-II LEV160	L4SULEV230	California LEV-IV SULEV230
L2ULEV125	California LEV-II ULEV125	L4SULEV25	California LEV-IV SULEV25
L2SULEV30	California LEV-II SULEV30	L4SULEV30	California LEV-IV SULEV30
L2LEV395	California LEV-II LEV395	L4SULEV75	California LEV-IV SULEV75

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L2ULEV340	California LEV-II ULEV340	L4SULEV85	California LEV-IV SULEV85
L2LEV630	California LEV-II LEV630	L4ULEV125	California LEV-IV ULEV125
L2ULEV570	California LEV-II ULEV570	L4ULEV200	California LEV-IV ULEV200
L3LEV160	California LEV-III LEV160	L4ULEV250	California LEV-IV ULEV250
L3ULEV125	California LEV-III ULEV125	L4ULEV270	California LEV-IV ULEV270
L3ULEV70	California LEV-III ULEV70	L4ULEV40	California LEV-IV ULEV40
L3ULEV50	California LEV-III ULEV50	L4ULEV400	California LEV-IV ULEV400
L3SULEV30	California LEV-III SULEV30	L4ULEV50	California LEV-IV ULEV50
L3SULEV20	California LEV-III SULEV20	L4ULEV60	California LEV-IV ULEV60
L3LEV395	California LEV-III LEV395	L4ULEV70	California LEV-IV ULEV70
L3ULEV340	California LEV-III ULEV340	T4B170	Federal Tier 4 MDV Bin 170
L3ULEV250	California LEV-III ULEV250	T4B150	Federal Tier 4 MDV Bin 150
L3ULEV200	California LEV-III ULEV200	T4B125	Federal Tier 4 MDV Bin 125
L3SULEV170	California LEV-III SULEV170	T4B100	Federal Tier 4 MDV Bin 100
L3SULEV150	California LEV-III SULEV150	T4B85	Federal Tier 4 MDV Bin 85
L3LEV630	California LEV-III LEV630	T4B75	Federal Tier 4 MDV Bin 75
L3ULEV570	California LEV-III ULEV570	T4B70	Federal Tier 4 Bin 70
L3ULEV400	California LEV-III ULEV400	T4B65	Federal Tier 4 Bin 65
L3ULEV270	California LEV-III ULEV270	T4B60	Federal Tier 4 Bin 60
L3SULEV230	California LEV-III SULEV230	T4B55	Federal Tier 4 Bin 55
L3SULEV200	California LEV-III SULEV200	T4B50	Federal Tier 4 Bin 50
T3B160	Federal Tier 3 Bin 160	T4B45	Federal Tier 4 Bin 45
T3B125	Federal Tier 3 Bin 125	T4B40	Federal Tier 4 Bin 40
T3B110	Federal Tier 3 Transitional Bin 110	T4B35	Federal Tier 4 Bin 35
T3B85	Federal Tier 3 Transitional Bin 85	T4B30	Federal Tier 4 Bin 30
T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover	T4B25	Federal Tier 4 Bin 25
T3B70	Federal Tier 3 Bin 70	T4B20	Federal Tier 4 Bin 20
T3B50	Federal Tier 3 Bin 50	T4B15	Federal Tier 4 Bin 15
T3B30	Federal Tier 3 Bin 30	T4B10	Federal Tier 4 Bin 10
T3B20	Federal Tier 3 Bin 20	T4B5	Federal Tier 4 Bin 5
T3B0	Federal Tier 3 Bin 0	T4B0	Federal Tier 4 Bin 0
HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395		

Transmission Type Code			
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual
A	Automatic	OT	Other
AM	Automated Manual	SA	Semi-Automatic
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)

Drive System Code			
4	4-Wheel Drive	P	Part-time 4-Wheel Drive

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Test Group	VASXV04.0AEH	**Evaporative/Refueling Family**	VASXR0138T3V
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

8. Emission Testing Waiver Statements

8.1. Data submittal waiver for high-altitude exhaust emission compliance

Our engineering evaluation of emissions testing conducted at SGS Engineering, Aurora, CO, allows us to state that all light-duty vehicles included in this application comply with the applicable emission standards at high altitude.
According to 40 CFR § 86.1829-15 (c) we waive the data submittal on the basis of this statement.

8.2. Data submittal waiver for 2DD (Supplemental) Evaporative Loss testing

Not required

8.3. Data submittal waiver for CST exhaust emission compliance

Based on our engineering evaluation of appropriate CST testing and I/M testing we state as the manufacturer that all light-duty vehicles included in the respective applications comply with the applicable CST and I/M emission standards.
According to 40 CFR § 86.1829-01 (b)(4)(ii) we waive the data submittal on the basis of this statement.

8.4. Data submittal waiver for Idle CO Testing

Based on our engineering evaluation of appropriate Idle CO emissions we state as the manufacturer, that all light-duty vehicles included in this applications comply with the applicable idle CO emission standards.
According to 40 CFR § 86.1829-01 (b)(5)(ii) we waive the data submittal on the basis of this statement.

8.5 Data submittal waiver for HCHO (Formaldehyde) Testing

Not specifically required for this test group as relevant UDDS and 50F FTP tests include HCHO data from bag analysis, confirming full compliance with the regulatory criteria pollutant requirements.

9. OBD General Description

OBD II hardware, software, and algorithms are based to the largest degree possible upon approved Bosch Engineering OBD II systems. There are, of course, some unique features of the Aston Martin engine/system that require unique hardware or algorithms. The OBD II system descriptions, thresholds, entry and exit conditions etc., are contained within Section 16 – Confidential Information.

11. AECD Descriptions

The Aston Martin Lagonda Ltd Test Group – VASXV04.0AEH uses a Bosch MG1 control system which is a unique system for Aston Martin. The AECD nomenclature and descriptions are shown in the chart included in Section 16 - Confidential information.

12. Description of Vehicles and Test Parameters Covered by Certificate

12.1. Vehicle Parameters

12.1.1	Carline (s)	303 - Valhalla
12.1.2.	Vehicle Classification	LDV
12.1.3.	Emission Control System Description:	
12.1.3.1.	Catalyst	
	Type:	3 way catalysts plus GPFs
	Number:	4 in 2 containers
	Configuration:	2 catalysts/bank, 1 primary warm up and 1 secondary with GPF
12.1.3.2.	EGR type	Not Applicable
12.1.3.3.	Air pump type	Not Applicable
12.1.3.4.	Fuel system type	Electronic Direct Fuel Injection
12.1.3.5.	Intake air aspiration method	Turbocharged, 1 per bank
12.1.3.6.	Other	Not Applicable
12.1.4.	Engine Code	AE26
12.1.5.	Number of valves per cylinder	4
12.1.6.	Engine Displacement	3982cm³ (243 in.³).

12.1.7.	Sales area	FA & CA
12.1.8.	Transmission and overdrive	DCT8 with integrated P2.5 motor, 2xP4 motors on front axle
12.1.9.	Shift indicator light	Equipped, not shifted by SIL
12.1.10.	Tire Size	Valhalla - 285/30R20(F), 335/30R21(R) Michelin PS5 or Cup 2 tire option
12.1.11.	N/V Ratio	25.9 Valhalla DCT 8
12.1.12.	Equivalent test weight	4500 lbs Valhalla models
12.1.13.	Fuel tank volume	17.1 US Gallons - Valhalla models

12.2. Test Parameters

12.2.1 Engine Start/Stop Procedures

All Transmission types:
Ensure the key fob is present in the vehicle. Check that the parking brake is applied. Depress the brake pedal. The Start button will glow red, indicating the engine is ready for the start. Momentarily press the start button to start. With sufficient High Voltage SoC a second start press will allow EV drive.

To stop the engine, select P and push the start button. The engine will stop and the steering lock will engage soon after. Remove the key fob from the vehicle to prevent battery drain when the vehicle is not in use. Taking the key fob away from the vehicle while the engine is running will not stop the engine, but if the engine is stopped by pressing the start button, it cannot be re-started until the key fob is again in the proximity of the vehicle interior.

12.2.2. Shift Schedules

12.2.2.1. The shift schedules are in accordance with 40 CFR §86.128-79 and A/C No. 72 A.

EPA Shift Schedules:

Valhalla 8 speed DCT Config 00 - program auto shift schedule Hybrid Sport

12.2.3. Dynamometer Loading Information

For Emissions and Fuel Economy:

Model	ETW (lbs)	Tire Size	Target Coefficients (lbs)			Set Coefficients (lbs)		
			A	B	C	a	b	c
Valhalla	4500	335/30R21	60.92	0.6491	0.0185	8.25	0.1036	0.0206

12.2.4. Evaporative / Refuelling Families VASXR0138T3V

Fuel Tank Temperature Profile

DriveTrace Timestamp	TBulkFuel Mid Point - in test	TBulkFuel Mid Point Corrected to Profile Start	TVapor Space Reference - in test
Seconds	°C	°C	°C
1	33.8	35	36
60	33.8	35	36
120	34.2	35.4	36
180	34.2	35.4	36
240	34.2	35.4	36
300	34.2	35.4	36
360	34.2	35.4	36
420	34.2	35.4	36
480	34.6	35.8	36
540	34.6	35.8	36
600	34.6	35.8	36
660	34.6	35.8	36
720	34.6	35.8	36
780	34.6	35.8	37
840	34.6	35.8	37
900	34.9	36.1	37
960	34.9	36.1	37
1020	34.9	36.1	37
1080	34.9	36.1	37
1140	34.9	36.1	37
1200	35.3	36.5	37
1260	35.3	36.5	37
1320	35.3	36.5	37
1380	35.3	36.5	37
1440	35.7	36.9	37
1500	35.7	36.9	37
1560	35.7	36.9	37
1620	35.7	36.9	38
1680	36.1	37.3	38
1740	36.1	37.3	38
1800	36.1	37.3	38
1860	36.1	37.3	38
1920	36.1	37.3	38
1980	36.3	37.5	38
2040	36.5	37.7	38
2100	36.5	37.7	38
2160	36.5	37.7	39
2220	36.9	38.1	39
2280	36.9	38.1	39
2340	36.9	38.1	39
2400	36.9	38.1	39
2460	37	38.2	39
2520	37.3	38.5	39
2580	37.3	38.5	39
2640	37.3	38.5	39
2700	37.6	38.8	39
2760	37.6	38.8	40
2820	37.6	38.8	40
2880	37.6	38.8	40
2940	37.6	38.8	40
3000	37.6	38.8	40
3060	38	39.2	40
3120	38	39.2	40
3180	38	39.2	40
3240	38	39.2	41
3300	38.4	39.6	41
3360	38.4	39.6	41
3420	38.4	39.6	41
3480	38.4	39.6	41
3540	38.4	39.6	41
3600	38.8	40	41
3660	38.8	40	41
3720	38.8	40	41
3780	38.8	40	41
3840	38.8	40	42
3900	39.2	40.4	42
3960	39.2	40.4	42
4020	39.2	40.4	42
4080	39.2	40.4	42
4140	39.5	40.7	42
4200	39.6	40.8	42
4260	39.6	40.8	42
4302	39.6	40.8	42

13. Projected Sales

Confidential information, refer to Section 16, page 4.

14. Request for Certification

14.1. Statements of Compliance

This test group is certified under the small volume manufacturer provisions contained in 40CFR 86.1811-17(h) where we aim to utilise the extended Tier 3 phase in period to meet the compliance levels required therein for model years 2017 thru 2021, model years 2022 thru 2026, Tier 3 SVM from 2027MY and then meeting the final Tier 4 NMOG+NOx standard in model year 2032.

Aston Martin Lagonda Ltd states that any element of design, system or emission control device installed on or incorporated in Aston Martin's new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not to the best of Aston Martin Lagonda Ltds information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk of public health or welfare except as specifically permitted by the standards described under section 202 of the Clean Air Act.

Aston Martin Lagonda Ltd further states that any element of design, system, or emission control device installed on or incorporated in Aston Martin's new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of Aston Martin's information and belief, cause or contribute to an unreasonable risk to the public safety.

The term pollutant means:

(a) Diesel particulates
(b) Nickel
(c) MMT combustion products
(d) Ammonia
(e) Sulphates
(f) Hydrogen sulphide
(g) Hydrogen cyanide
(h) Ruthenium combustion products
(i) Nitrosamines

Or any other pollutant which Aston Martin Lagonda Ltd has identified which can reasonably be expected to be emitted from these vehicles.
All vehicles have been tested in accordance with good engineering practice to ascertain that such test vehicles meet the requirement of this section for the useful life of the vehicle.

The test vehicles with respect to which data are submitted are in all material respects as described in the application for certification, have been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the application for certification, they meet the requirements of such tests, and on the basis of such tests, they conform to the requirements of the regulations in 40CFR, Part 86 Subpart S and later requirements contained in 40CFR Part 1066 subpart I.

The test vehicles for which certification is requested conform to the requirements in § 86.1810-01 (a), 86.1810-09 and 86.1810-17 and the description of tests performed to ascertain compliance with the general standards contained therein and the data derived from such tests are available.

The testing described under 86.1824-08 has been designed and conducted in accordance with good engineering practice to assure that the vehicles covered by a certificate issued under 86.1848-01 and -10 will meet the Tier 3 evaporative emission standards as detailed in 86.1813-17(h) from model year 2022.

Further, in accordance with § 86.1810–01 (c)(1), Aston Martin Lagonda Ltd states that all test data that are derived from testing described under § 86.098-21(b)(4)(I) designed and conducted in accordance with good engineering practice to assure that the vehicles covered by a certificate issued under § 86.1848-10 will meet the Tier 3 evaporative emission standards for the useful life of the vehicle.

COLD CO Compliance

Aston Martin states that the vehicles described herein have been tested in accordance 40CFR part1066 Subpart H and on the basis of these tests are in conformance with that subpart. See the test group CSI in section 7 for further information.

Compliance with cold CO requirements has been achieved by extending the feedback control temperature to a lower value and optimizing fuelling for after-start enrichment.

CONTINUITY OF EMISSIONS IN THE 20° F to 86° F TEMPERATURE RANGES

Aston Martin states that there is no discontinuity in emissions of NMOG, NOx or CO measured on the federal test procedure in the 20° F to 86° F temperature ranges.

Aston Martin states that the air to fuel ratio is no richer than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), plus a tolerance of four percent, except for the purposes of component protection as petitioned for by Aston Martin and as approved by the Administrator.

LEAK FREE EXHAUST

In accordance with the requirements set out in 40 CFR 86.1844-01(d)(16) Aston Martin attests that the exhaust system design facilitates leak free assembly at first installation and subsequent installations neccessitated by service needs. The catalyst downpipe assemblies are single piece with welded joints and carry industry standard oxygen sensor mountings.The joint systems employed between cylinder head and manifold and the joint face post catalyst are deformable gasket materials that are designed for the full useful life of the vehicle.

A/C DURABILITY

In accordance with the requirements of 40CFR 86.1823-08(m)(4) Aston Martin attests that the system design facilitates leak free assembly at first installation and subsequent installations neccessitated by service needs. All joints use latest industry standard features and materials and all flexible sections are optimised for surface area. System leak control capability is defined by the specifications in SAE J2727 and measured using same.

14.2. **Request for Certificate**

Aston Martin Lagonda Ltd herewith applies for a Federal Certificate of Conformity for Test Group VASXV04.0AEH

Aston Martin Lagonda Ltd herewith also applies for a California ARB Executive Order for Test Group VASXV04.0AEH

This Test Group complies with all applicable regulations contained in Title 40, Code of Federal Regulations, Part 86 and Part 1066, and the California Code of Regulations.

SimonNaughton
Head of Legislation & Certification

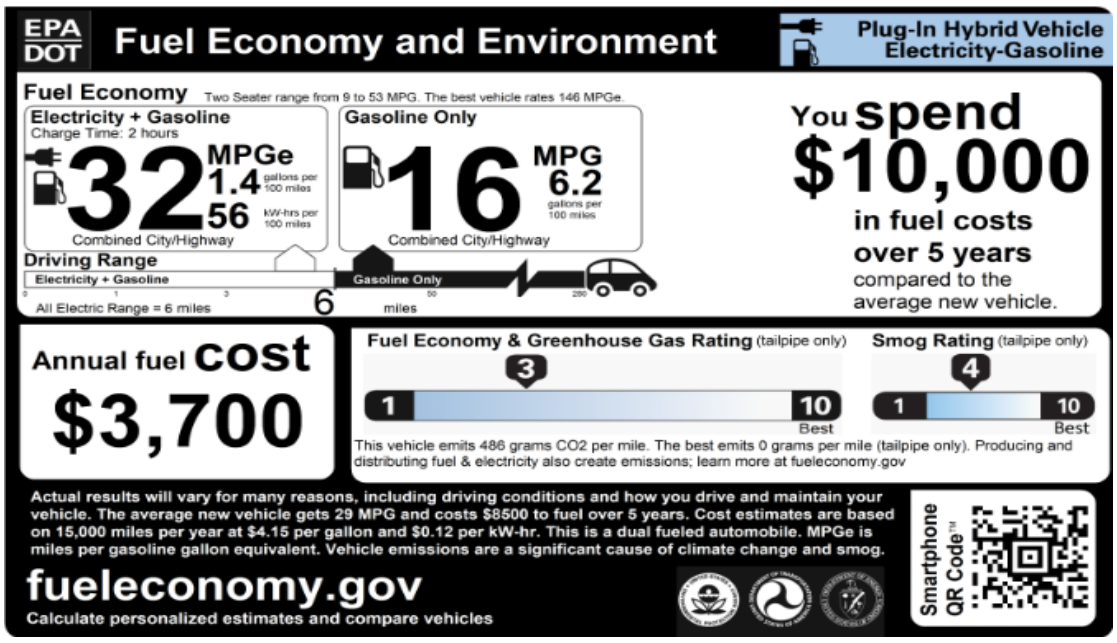
15. Other Information

15.1. Label samples according to 40 CFR § 86.1807-01 and according to California Motor Vehicle Emission Control Label Specifications. Positioned under the hood.

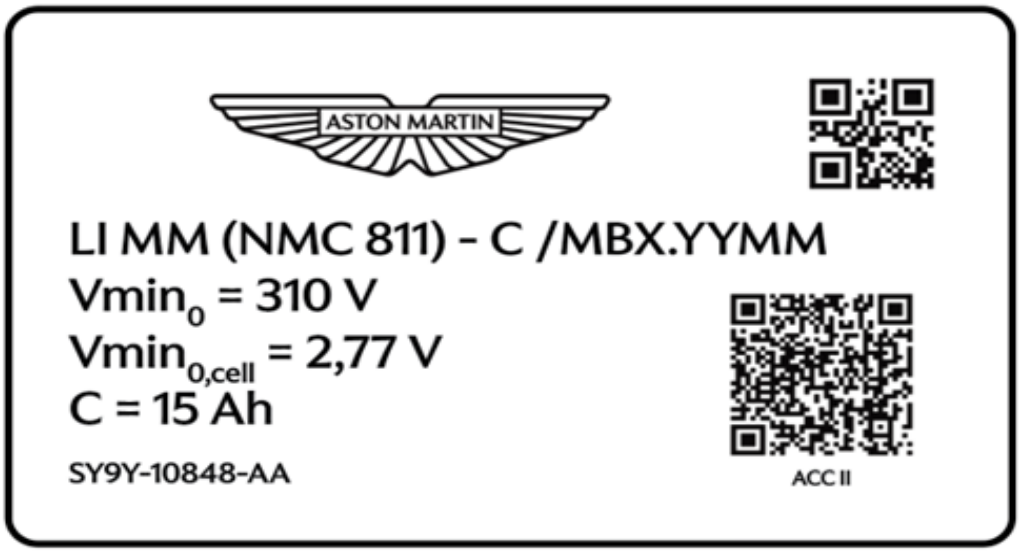
15.2 Environmental Performance Label (included on the Monroney Label)

This test group will adopt the most recent EPA/DOT Fuel Economy and Environment label applicable to a Blended PHEV.

Sample of format in use : - ACTUAL label for this vehicle family



15.3 Battery Information label sample



AM003 CARB ACCII Battery Label

CCR Title 13 §1962.6

15.4. Fee Filling Form - EPA Condensed version

US EPA Fee Form

Help and EPA Instructions

* Required Field

General Information

Date: 02/23/2026

Process Code *
Submit New Fee Filing Form

Manufacturer Code *
ASX

Manufacturer Name *
Aston Martin Lagonda Ltd

Contact Name *
Martin Haggett

Contact Email Address *
martin.haggett@astonmartin.com

Contact Phone *
011447484676255

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 *
VASXV04.0AEH

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

Amount Owed
$32,317.00

Payment Type *
Online ACH

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).

15.5. California Fee Invoice

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
CALIFORNIA AIR RESOURCES BOARD

MOBILE SOURCE CERTIFICATION AND COMPLIANCE FEE PAYMENT FORM FOR ON-ROAD APPLICATIONS ONLY

CARB USE ONLY

Invoice Name	MSF250860
Invoice Date	Feb 23, 2026

COMPANY INFORMATION

Company Name	Aston Martin Lagonda Ltd
Address	Banbury Road
City	Gaydon
State	Warwickshire
Zip	CV35 0DB
Country	United Kingdom
Contact Name	Martin Haggett
Contact Telephone Number	011447484676255
Contact Email	martin.haggett@astonmartin.com
CARB Customer Number	CCAM000006

APPLICATION INFORMATION

Payment Row Number	Product Description or File Name	Model Year/Calendar Year	Unique Application Identifier: Test Group, Engine Family, Trailer Family, Vehicle Family, ZEP Family, if applicable (ID listed in payment row must match the unique identifier given to the certification application)	Category Type	Fee Type	Amount
1	CBI_VASXV04.0AEH_APPIP1	Model Year 2027	VASXV04.0AEH	Light-duty vehicle test group and medium-duty vehicle test group	Carry-Over	$ 12,577.00

Total Due	$ 12,577.00

I, _____, attest that any information provided is true, accurate, and complete.

(Responsible Party Signature Here)

17. California ARB Information

17.1. Statements

17.1.1. Label Durability

Aston Martin states that the tune up labels are designed to be durable for the vehicle's total expected life, under the conditions in the area where the labels are attached. Typical vehicle environmental conditions shall include, but are not limited to, exposure to engine lubricants and coolants, brake fluid, under hood temperatures, steam cleaning, and paints or paint solvents.

17.1.2. Fill Pipe

Aston Martin states that all vehicles meet the requirements of Title 13 Section 2235 and/or ISO13331-1995

17.1.3. Production Vehicles versus Test Vehicles

Aston Martin states that in regard to emission control systems, and all related parameters, production vehicles will be identical to the test vehicles that were used for certification testing.

17.1.4. Continuity of emissions in the temperature range of 20 to 86 Degrees F

Aston Martin states that there is no discontinuity in emissions of NMOG, CO and NOx measured on the Federal Test Procedure in the temperature range of 20 to 86 degrees F.

17.1.5. I/M Test Procedure Statement

Based on our engineering evaluation all light-duty vehicles comply with the I/M requirements at ambient temperature from 35 to 68 degrees F. (Refer to Section 8, Item 8.3, also MAC 99-05)

17.1.6. High Altitude Requirements

The computer-controlled multipoint fuel injection system meters fuel based on air mass flow and is self-compensating. Therefore all Aston Martin test groups comply with the high altitude requirements. (ref. Mail Out 86-23 & 40 CFR 86.1829.15)

17.1.7. Test and Service Accumulation Fuel

All fuels used for emissions certification testing (EPA Tier 3 Premium reference fuel) or service accumulation fuels comply with applicable regulations.

17.1.8. Lubricants

All lubricants used in test vehicles comply with applicable regulations. There are no differences between actual test vehicle lubricants and proposed production vehicle lubricants.

17.1.9. Test Facilities and Equipment

The facilities and equipment to be used for mileage accumulation and emissions testing comply with all applicable regulations.

17.1.10. Unscheduled Maintenance

17.1.10.1. Diagnostic Procedures

In the event that unscheduled maintenance on one of the certification test vehicles becomes necessary, Aston Martin uses the on-board and service diagnostic system.

17.1.10.2. Procedures for Evaluating Drivability

During mileage accumulation of certification test vehicles, at the various test facilities, all personnel involved are instructed to report any abnormal vehicle performance.

17.1.10.3. Blanket Approval List

We do not anticipate any allowable unscheduled maintenance on items, other than those listed in MSAPC Advisory Circular No. 4A 1.

17.1.11. Warranty Statement

Our statement with regard to the Emission Control System Warranty complies with the Paragraphs contained in the provisions of CCR Title 13, Chapter 1, Article 6.

17.1.12. Environmental Performance Label

This test group will adopt the most recent EPA/DoT Fuel Economy and Environment label. Refer to label example in Section 15.

17.2. Fill Pipe Specification - applicable to Valhalla

The nomenclature and symbols used below are the same as those defined in "Specifications for fill pipes and openings of 2015 and subsequent motor vehicle fuel tanks" amended March 22, 2012 (Ref: ISO13331-1995(E) as adopted Jun 1995)

General Specifications	ARB Specification	Manufacturer Specification*
(1) Angle α in degrees	-10° ≤α≤ 20°	1°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane)	30° (min)	68.8° (44°)
(3) Test nozzle penetration of Restrictor	22.5 mm (min)	30.85
(4) Angle β in degrees	none	2°

Fill Pipe Specifications	ARB Specification	Manufacturer Specification*
(1) Fill pipe surface in TIR	0.25 mm	0.1
(2) Fill pipe face outside diameter	57.5 mm (max)	5.4 cm
	52.0 mm (min)	5.3
(3) Internal locking lip in degrees of the inside circumference	100° (min)	153°
(a) degrees extending each side of reference plane	35° (min)	LS** 95°, RS*** 85°
(4) Height of lip measured from fill pipe inside wall; or	2.5 mm (min)	3
height of lip measured from fill pipe outside wall for outside diameters between 52 and 57.5mm	8.5 mm (min)	
(5) Depth of lip (D)	4 ≤ D ≤ 10 mm	6.85

Offset A	None	none
Offset B	None	none
(6) Fill pipe face clearance (Axial)	2.5 mm (min)	2.7
(7) Fill pipe face clearance (Radial)	40mm (min)	46
(8) Fill pipe face inside diameter	49.8mm (max)	35.5
(9) Bench Leak Test ***(SVM from 2024MY)***	2.5L/min (Max) at 500Pa Vacuum	0.7 max
(10) Capped or capless		capless
(11) seal - mechanical or liquid		liquid
(12) Disruption in the fill pipe face		None
(13) ORVR Design (I/NI/NIRCO/NO)****		NIRCO
(14) Type - Threaded, Bayonet or Capless		Capless
(15) Usage of Design (evap family or model)		*ASXR0138T3V
(16) Total vehicle model year sales		xx

* Dimension should include adverse tolerance condition

** LS = Left side of reference plane

*** RS = Right side of reference plane

**** ORVR Design: Integrated (I), Non-integrated (NI), Non-integrated Refuelling Canister only (NIRCO), Non ORVR (NO)

17.3. Projected Sales

Confidential information – refer to section 16, page 3

17.4. Evaporative Emission Deterioration

17.4.1. Evaporative Family Identification VASXR0138T3V

17.4.2. Parameters of Evaporative Family Refer to Section 3.1

17.4.3 Fuel Tank Temperature and Pressure Profile and Ambient Conditions

The temperature correction was conducted in accordance with the Federal Evaporative Emission Standards and Test Procedures after the following equation:

$$Ti\ ,profile = Ti - To$$

Ti is the series of observed liquid fuel temperature during the drive (°F) where i is the incremental measurement in time.

To is the liquid fuel temperature observed at the start of the specified driving schedule (°F).

Ti ,profile is the series of temperatures that comprise the relative temperature profile for table of Ti refer to Enclosure 1 of Section 12.

17.5. Supplemental Data Sheets

17.5.1. Common

Manufacturer	Aston Martin Lagonda Ltd
Vehicle Model(s)	Valhalla V8 PHEV
Test Group	VASXV04.0AEH
Evaporative Family	VASXR0138T3V
Engine Type	V8 Gasoline
Liters (CID)	4.0 (243 in.³).
Drive System	Mid engine, four wheel drive - P2.5 rear integrated motor, 2 x P4 front mid motors

17.5.2. Abbreviations

17.5.2.1. Ignition System

ECM	Engine Control Module
EI	Electronic Ignition
KS	Knock Sensor

17.5.2.2. Exhaust Emission Control System

2WU-TWC/2TWCcGPF	One Primary catalyst and one Secondary catalyst with GPF in series per bank
2WR-HO2S/2HO2S	One Heated Oxygen Sensor and one Monitor Sensor on each primary Three Way Catalyst.

17.5.2.3. Special Features

OBD II, 2TC, 2CAC	On-Board Diagnostics II, 2 turbochargers, 2 charge air coolers

17.5.2.4. Fuel System

DFI	Direct Fuel Injection

17.5.3. 2027 Air Resources Board Supplemental Data Sheet Passenger Cars, Light Duty Truck and Medium Duty Vehicles

Manufacturer	Aston Martin	Test Group:	VASXV04.0AEH	Evaporative Family	VASXR0138T3V

All Eng. Codes in test group CA X 49S ___ 50S X AB965 ___ ORVR Yes X No ___

Veh class PC X LDT1 ___ MDV1 ___ MDV2 ___ MDV3 ___ MDV4 ___ MDV5 ___

Single Cert. Std. for Multi-Class Test Group: N/A

Fuel Type(s): Dedicated ___ Flex-Fuel ___ Dual Fuel ___ Bi-Fuel ___ Gasoline X Diesel ___
CNG ___ LNG ___ LPG ___ M85 ___ Other (Specify) PHEV

Emission Test Fuel (s): Indo ___ CBG ___ G ___ LPG ___ M85 ___ Other (Specify) Tier 3 E10 Premium
Diesel: 13 CCR 2282 ___ 40 CFR 86.113-90 ___ 40 CFR 86.113-94

Evaporative Test Procedure: California ___ Federal X

Service Accum: Std. AMA X Mod AMA ___ Mfr ADP ___ Other (Specify ___

NMOG Test Procedure: N/A ___ Std X Equiv ___ **R/L Test Proc** SHED ___ Pt Source X

Engine Configuration: V8 Displacement 4.0 Liters 243 Cubic Inches

Valves per Cylinder: 4 Rated HP 818 @ 6700 RPM Valhalla

Engine: Front ___ Mid X Rear ___ **Drive:** D ___ RWD ___ 4WD-FT ___ 4WD-PT X

Exhaust ECS: 2WU-TWC/2TWCcGPF/2WR-HO2S/2HO2S/2TC/2CAC/DFI

Engine Code	Vehicle Model	Trans Type	ETW (lbs.)	ECM CAL ID	TCM CAL ID	Catalytic Converter Part #'s
AE26	Valhalla	DCT8	4500	1D260B#	#Y9Y-14D206-A#	#Y9Y-5L230-A# LH assembly #Y9Y-5L236-A# RH assembly

17.5.4. 2027 Model Year Air Resources Board Certification Review Sheet Passenger Cars, Light Duty Truck and Medium Duty Vehicles

Manufacturer: Aston Martin **Test Group:** VASXV04.0AEH **Evap. Family:** VASXR0138T3V

All Eng. Codes in Test Group: CA X 49S 50S X AB965 **ORVR:** Yes X No

Exhaust Std: LEV ULEV X V V US EPA T3 Equiv

Evap Std.: 50K Useful Life with R/L X **In-use Exh. Std:** Full in-use X Alt in-use

Veh class PC X LDT1 MDV1 MDV2 MDV3 MDV4 MDV5

Single Cert. Std. for Multi-Class Test: Y

Fuel Type(s): Dedicated Flex-Fuel Dual Fuel Bi-Fuel Gasoline X Diesel

CNG LNG LPG M85 Other (Specify

Emission Test Fuel (s): Indo CBG G LPG M85 Other (Specify EPA T3 E10 Premium

Diesel: 13 CCR 2282 40 CFR 86.113-90 40 CFR 86.113-94

Evaporative Test Procedure: California Federal X

Service Accum: Std. AMA X Mod AMA Mfr ADP Other (Specify

NMOG Test Procedure: N/A Std X Equiv **R/L Test Proc** SHED Pt Source X

Engine Configuration: V8 Displacement 4.0 Liters 243 Cubic Inches

Valves per Cylinder: 4 Rated HP 818 @ 6700 RPM

Engine: Front Mid X Rear **Drive:** D RWD 4WD-FT 4WD-PT X

Exhaust ECS: 2WU-TWC/2TWC/2WR-HO2S/2HO2S/2TC/2CAC/DFI

		Chapt			Chapter
1	Authorized Representative	Sec 1	22	Gen. Std, Increase in Emissions	
2	Fuel Specifications	Sec		Safety, Meets all Requirements	Sec 14 + 17
3	Test Equipment	Sec	23	Driveability Statement	Sec 17
4	Test Procedure	Sec	24	Adjustable Parameters	None
5	Mileage Accumulation Route	Dyno	25	Tamper Resistance Method(s)	N/A.
6	Emiss.Warranty Statement	Sec	26	Fill Pipe Specifications	Sec 17
7	Maint: Cert/Req'd/Recm'd	Sec	27	High Altitude Compliance	Sec 17
8	Emiss.Label/Vac. Hose Diag.	Sec	28	OBD Sys.incl.Marked Revisions	Sec 9
9	Evap. Control System	Sec 3	29	I&M Test Procedure & Data	Sec 17
10	Engine Parameters	Sec 7	30	50 Degree F Compliance	Sec 17
11	Fuel System	Sec 3	31	Manufacturer's RAF	N/A.
12	Ignition System	N/A	32	Phase In Sched: ORVR Cert Std	100%
13	Exhaust Control Systems	N/A		Full Range Misfire Monitoring	Sec 9
14	Projected Sales (LDT/MDV Split)	Sec		LEV CAT Monitoring - 1.5 x Std	Sec 9
15	Vehicle Description	Sec 6		0.020“ Orifice-Based Leak Chk	Sec 9
16	Evap. Bench Test Procedure	Sec		MDV VEC Calculation	N/A.
17	R/L Temp & Press Profiles	Sec	33	NMOG Fleet Average Calculation	Sec 16
18	EDV Selection	Sec 2	34	AB965 Credits/Withdrawals	N/A.
19	Prod.Veh.same as Test Veh.St.	Sec	35	EPA Certificate	Not yet
20	Emiss. Label Durability St.	Sec	36	Equiv. NMOG Proc--ARB Approval	Yes

21

Test Vehicle Information	Durability Data	Emission Data Vehicle	Evap Emission Data	FEDV
C/O or C/A	C/O			-----
MY & ID	N/A	2026, 003PP0362	2026, 003PP0360	2026, 003PP0362
Vehicle Log Page(s)				-----
Zero Mile Book Page(s)	-----	-----	-----	-----
Maint. Logs & Engr. Eval.	N/A	N/A	N/A	-----

17.5.4. 2027 Model Year Certification Review Sheet Passenger Cars, Light Duty Truck and Medium Duty Vehicles

Manufacturer: Aston Martin Lagonda Ltd.
Test Group: VASXV04.0AEH
Evaporative Families: VASXR0138T3V

Emission Data Vehicle ID	Engine Code & Displ.	Test Location	Trans	ETW (lbs)	DPA (hp)	MPG	
						City	Hwy
003PP0362	AE26 3982cc	Manufacturer	DCT8	4500	N/A	16.7	26.6

PROJECTED EMISSIONS (1) (2)

(grams/mile, except, grams/test for D+HS, grams/gallon for ORVR)

Test Fuel: EPA T3 E10 Premium **Test Fuel Evap:** EPA T3 E10 Premium		FTP NMOG+ NOx	CO	NOx	HCHO (mg/mi)	20°F CO	HFET NMOG+ NOx	CO_2 City/Hwy	3day D+HS	2day D+HS	R/L	Re-Fuelling
Mileage	50k					0.43		510/339	-	-	-	-
	150k	0.0209	0.58	0.008	0.729		0.0070		0.351	0.324	0.001	0.006

	The Emissions Data vehicle(s) above comply with standards as follows:											
(1)	at 50k of					10						
	at 150k of	0.070	1.7	-	4		0.07	FEL>	0.40	0.40	0.05	0.20
	and include additive DFs:											
	at 150k of	0.0070	0.07	0.0043	-	N/A	0.0070					
(2)	Evaporative 150k DFs of								0.0067	0.0030	0.000	0.005

SFTP TEST RESULTS

(grams/mile)

Mileage	Measurable	Emissions Cert Level	Emissions Standard
150k	US06 -NMOG+NOx	0.0194	0.084
150k	US06 - CO	0.8	9.6
150k	SC03 - NMOG+NOx	0.012	0.07
150k	SC03 - CO	0.58	1.7
4k	CO_2 - US06	493.201	
4k	CO_2 - SC03	505.782	

	50k	CO (g/mi)	NMOG+Nox (g/mi)	HCHO (mg/mi)	
ULEV 50° F emissions (w/RAF but w/o DFs)		0.55	0.0236	0.559	Exempted
ULEV 50° F standards		1.70	0.140	16	Exempted

The NMOG values include Reactivity Adjustment Factor(s) (RAF) of N/A _____ NMOG ___1____ CNG/LNG __N/A__

Remarks: _____

_____

Application Processed by: _____ Date _____ Reviewed By: _____ Date _____

17.6. Vehicle Weights

17.6.1 Curb Weight 4156 lbs Valhalla EDV

17.6.2 Equivalent test weight 4500 lbs at Loaded Vehicle Weight - Valhalla

17.7. Exhaust and Evaporative Standards to which this test group is certified

Applicable Standards: 50 state - EPA T3 Bin70,
CARB LEV4 ULEV 70

	4k	50k	150k	
FTP NMOG+NOx			0.07	g/mi.
CO			1.7	g/mi.
HCHO			4	mg/mi.
HFET NMOG+NOx			0.07	g/mi.
Cold CO		10 (12.5 LDT)		g/mi.
Cold NMHC Fleet			0.3	g/mi.
			150k	
Evap 3d	-		0.3 (0.5 LDT)	g/test
Supplem. 2d	-		0.3 (0.5 LDT)	g/test
Running Loss	-		0.05	g/mi.
ORVR	-		0.2	g/gal
50F - NMOG+NOx	0.14	-		g/mi.
50F - CO	1.7	-		g/mi.
50F - HCHO	16	-		mg/mi.
US06 NMOG+NOx	0.084	-		g/mi.
US06 CO	9.6	-		g/mi.
SC03 NMOG+NOx	0.07	-		g/mi.
SC03 CO	1.7	-		g/mi.
				g/mi.

17.8. California Assembly Line Test Procedure – NMOG to NMHC Ratios

The following were used during the certification process:

NMHC:NMOG cold	1:1.10
NMHC:NMOG hot	1:1.03