Acknowledgement of certification fee payment

CARB Application 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	MSF251037-1
Invoice Date	May 20, 2026

COMPANY INFORMATION

Company Name	CZV Inc.
Address	19601 Hamilton Avenue
City	Torrance
State	California
Zip	90502
Country	United States
Contact Name	Craig Knight
Contact Telephone Number	4245377209
Contact Email	cknight@czinger.com
CARB Customer Number	CCF000659

APPLICATION INFORMATION

Row Number	Previous Unique Application Identifier	Previously Selected Category Type	Previously Selected Fee Type	Paid Amount	Corrected Unique Application Identifier	Corrected Category Type	Corrected Fee Type	Corrected Amount	Amount Due
1	VCZVV02.9CJP	Light-duty vehicle test group and medium-duty vehicle test group	Carry-Over	$ 12,577.00	VCZVV02.9CJP	Light-duty vehicle test group and medium-duty vehicle test group	Partial Carry-Over	$ 25,155.00	$ 12,578.00

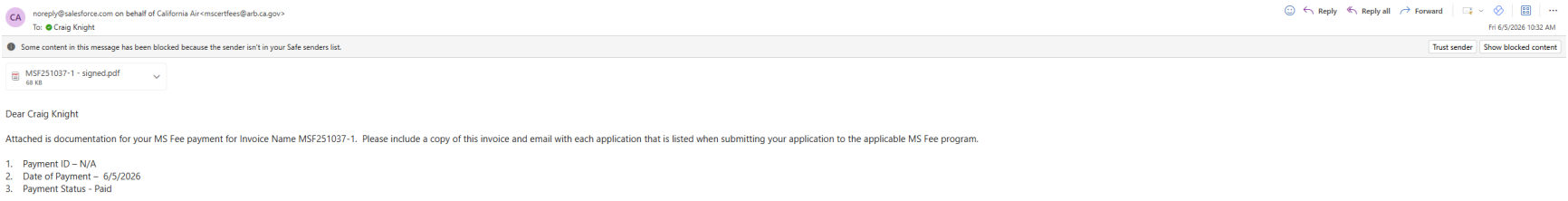
Total Invoice (MSF251037) Paid	$ 12,577.00	**Total Corrected**	$ 25,155.00
		Total Due	$ 12,578.00

Notes
Changed fee type from Carryover to Partial Carryover.

I, Craig Knight _, attest that any information provided is true, accurate, and complete.

(Responsible Party Signature Here)

CARB Application Fee Receipt Confirmation



Dear Craig Knight

Attached is documentation for your MS Fee payment for Invoice Name MSF251037-1. Please include a copy of this invoice and email with each application that is listed when submitting your application to the applicable MS Fee program.

1. Payment ID – N/A
2. Date of Payment – 6/5/2026
3. Payment Status - Paid

Application Checklist

On-Road Light Duty	
✓	**Checklist**
✓	Signature Letter (FYWC)
✓	DMS Workflow
✓	E-Cert Application*
✓	Statement of Compliance
✓	Warranty Statement
✓	Adjustable Parameters/Tamper Resistance*
✓	Catalyst Information*
✓	VECI Label
✓	EP Label*
✓	Emission Related Parts List
✓	AECD*
	Sensor Table*
✓	NMOG/VEC Compliance Plan
✓	Justification for Carryover/Carryacross*
✓	Test Vehicle Description
✓	Durability/Test Log
	Durability Procedure (Approval Number)*
	DOR Approval*
	OBD or EMD Approval **
	Modified Test Procedure*
✓	Evap. Control System Description *
✓	ECS Description
✓	Running Loss Fuel Temperature Profile (all models)
	Confirmatory Test Results*
	EPA Certificate of Conformity*

* - If Applicable

** - OBD approval is not needed to accept an application for filing. However, it is required to issue an EO.

Chief
Emissions Compliance, Automotive Regulations and Science Division
California Air Resources Board
4001 Iowa Avenue
Riverside, CA 92507

Subject: 2027 Model Year Carryover Application Request

CZV, Inc is requesting the Air Resources Board approve the following Carryover Application for VCVV02.9CJP based on carryover data from TCZVV02.9CJP and Executive Order number A-534-0002.

By Signing this letter, CZV, Inc is certifying that this model year's application package:

1. Includes no change of the emission standards/FELs, regulation requirements, emission characteristics of the engine, or test procedures.

2. The 2027 application package differs from the 2026 application package only by:

   - ✓ Model year
   - ✓ Test Group/Engine/Vehicle/Evaporative family name
     Manufacturer contact information
   - ✓ Projected sales data

3. All other information in the 2027 application package is identical to the 2026 application package (incorporates all approved running changes to date).

4. The documentation package is complete and named correctly using the appropriate Document Management System (DMS) file and workflow naming conventions and submitted using the correct workflow process.

If you have any questions regarding this request, please contact Craig Knight at +1(424)537-7209 or cknight@czinger.com.

Sincerely,

CZV Inc
Application for Certification – Part 1
2027 Model Year 21C / 21C VMax / 21C Spyder

Test Group:	VCZVV02.9CJP
Evaporative/Refueling Family:	VCZVR0130AA1
Durability Group:	VCZVHHGNNCJP
Durability Group Description:	Hybrid Propulsion, Four Stroke, Otto Cycle, Gasoline Fueled, Multipoint/Sequential Port Fuel Injection, Metallic Three-way Catalyst
Ceramic Monolith:	See CBI report version
Test Group Description:	2.9 liter turbocharged V8 Hybrid LDV
Applicable Standards:	50 State, Tier 4 BIN 50 / LEV-III ULEV 50
Model Covered:	21C / 21C VMax / 21C Spyder
Issue Date:	04/15/26
Authority Response Date:	As soon as possible

Vehicle and Test Numbers

VID	Test Type & Number	
PP04	FTP75 75F	SCZV10088240
PP03	FTP75 50F	SCZV10088235
PP03	Cold CO	SCZV10088234
PP04	Highway	SCZV10088238
PP04	SC03	SCZV10088233
PP04	US06	SCZV10088239
PP04	3-Day EVAP	SCZV10088243
Option C	BETP	SCZV10088246
PP04	Running Loss	SCZV10088245
PP04	ORVR	SCZV10088244

Correspondence and Communications

Company HQ and Mailing Address

CZV, Inc.
19601 Hamilton Avenue
Torrance
Los Angeles, CA
90502

Authorized Persons and Contact Information

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Organization: CZV, Inc
Title: Chief Engineer (CAO)
Email: ebaldry@czinger.com
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Cell: +1(424)542-2480

Name: Craig Knight
Organization: CZV, Inc
Title: Principal Powertrain Homologation Engineer (CROMERR, Submitter)
Email: cknight@czinger.com
Address: 19601 Hamilton Avenue, Torrance, CA 90502
Cell: +1(424)537-7209

Name: Jim Maher
Organization: CZV, Inc
Title: Vice President, Powertrain
Email: jmaher@czinger.com
Address: 19601 Hamilton Avenue, Torrance, CA 90502
Cell: +1(424)499-7054

Name: Ed Ponagai
Organization: Vehicle Environmental Engineering LLC
Title: Director, VEHEE LLC (Submitter)
Email: Ed@VEHEE.com
Address: 19601 Hamilton Avenue, Torrance, CA 90502
Cell: +1(517)414-2145

Agent for Service

CZV Inc's Agent for Service is nominated as follows.

Name:	Mattew Stern
Organization:	CZV, Inc
Title:	Senior Corporate Counsel
Email:	mstern@divergent3d.com
Address:	19601 Hamilton Avenue, Torrance, CA 90502
Cell:	+1(424)844-6296

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Introduction

The 2027MY Czinger 21C is the first hybrid vehicle manufactured by CZV, Inc. dba Czinger, Czinger Vehicles, Torrance, California. This document describes the emissions control systems of this vehicle, which is certified to Federal TIER 4 BIN 50 and CARB LEV-III ULEV50 standards.

Use, publication or release of this confidential information by unauthorized persons is not permitted without the express written consent of CZV, Inc.

Confidential Information

Statement of Confidentiality:

CZV Inc considers sections 2 to 20 as confidential.

All pages constitute confidential business information and trade secrets of CZV Inc.

DURATION OF CONFIDENTIALITY

FOI Application until issuance of Certificate of Conformity / Executive Order.

CBI Application Permanent.

Anyone who interacts with this document and information is applied the confidentiality. ALL PORTIONS OF THIS DOCUMENT, AND ALL INFORMATION CONTAINED HEREIN, ARE DEEMED CONFIDENTIAL INFORMATION OF CZV, INC.

Use, publication or release of this confidential information by unauthorized persons is not permitted without the express written consent of CZV, Inc.

Section 86.1844(d)(2) - Durability Group Description

Durability Group Name:	VCZVV02.9CJP
Combustion Cycle:	4-Stroke Engine
Type:	Piston
Fuel Used:	Gasoline
Basic Fuel Metering System:	multipoint/sequential port fuel injection
Catalyst Construction and General Location:	Three-way catalyst of metallic substrate. Four catalyst bricks; one pre-cat and one main-cat for each cylinder bank
Precious Metals in Catalyst:	See CBI report version
Precious Metal Loading (each brick) for all Catalysts in the Durability Group:	See CBI report version
Range of Catalyst Grouping Statistics:	8.1
Battery Type:	Rechargeable
Battery Pack Voltage:	806 V
Battery Pack Energy Capacity:	4.2 kWh
Number of Drive Motors/Generators:	3
Motor/Generator Type:	3-Phase Radial Flux Permanent Magnet Synchronous Motor/Generator
Rated Continuous Horsepower for each motor:	MGU (1 pc): 150 kW Wheel motors (2 pcs): 200 kW each
Battery Pack Weight (dry):	77 kg
Battery Chemistry:	Lithium Nickel Cobalt Aluminum Oxide
Battery Manufacturer:	See CBI report version
Battery Construction:	See CBI report version
Description of the Thermal Management System:	Three hybrid system cooling fluid circuits: - Inverters + DC/DC converter circuit -HV battery circuit -Electric motors circuit, also cooled with ambient air.
Drive Source Identifier:	Combustion Engine, Electric Motors
Fuel Identifier:	Gasoline

CZV has selected the option that is available for small-volume manufactures and small-volume test groups to use assigned deterioration factors that the Administrator determined appropriate for Tier III exhaust and evaporative emissions and summarized in EPA CD-23-01 dated January 2023. ARB has approved the use of EPA assigned deterioration factors.

This group complies with EPA TIER 3 BIN 50, CARB LEV-III ULEV 50 exhaust emissions requirements and Tier 3, LEV-III evaporative and refueling emissions requirements.

Section 86.1844(d)(3) - Evaporative/Refueling System Family Description

Evaporative / refueling family:	VCZVR0130AA1
Model:	21C, 21C VMax, 21C Spyder
Type of vapor storage device:	Canister
Working capacity:	130 grams
System configuration:	Single vapor canister
Canister construction and materials:	Plastic case w/activated charcoal adsorber
Fuel system:	Multipoint fuel injection, 8 low and 8 high duty injectors.
Type of refueling emission control system:	Integrated canister
Fill pipe seal system:	Mechanical seal
Purge control system:	Calibrated purge strategy
Vapor hose material:	Multilayer low HC permeability
Fuel tank material:	Aluminum
Air intake HC Adsorbing material:	Ingevity ACS 310X-2LSA
Fuel tank volume:	15 Gallons
Evaporative emission standard or family emission limit (FEL):	LEV-III (0.325g)

The Evaporative Family's Fuel Tank Temperature Profile (FTTP) is determined according to 40 CFR § 86.094-14(b)(1) as approved by EPA and ARB.

CZV as a small volume manufacturer, therefore, believes that the use of assigned evaporative emission Deterioration Factors is appropriate, with reference to EPA mail out CD 23-01.

ORVR System Description

The system was approved as a new implementation by EPA in MY25 as shown by correspondence under compliance statements.

RE: Czinger ORVR System

CD Cullen, Daniel
To Craig Knight
Cc Kimball, Joshua; Ott, William; Wright, DavidA (he/him/his)

Craig,

Thank you for the information. The EPA agrees that this supplied data meets the guidance requirements for the ORVR system. Please upload this into EVCIS with the rest of the documents for your test group.

Please let me know if you have any questions.

Sincerely,

Dan

Section 86.1844(d)(4) - Durability Information

CZV, Inc (CZV) is classified as a Small Volume Manufacturer as the production for, and sales in, the US market is less than 5,000 vehicles per Model Year.

CZV has selected the option that is available for small-volume manufactures and small-volume test groups to use assigned deterioration factors that the Administrator determined appropriate for Tier III exhaust and evaporative emissions and summarized in EPA CD-23-01 dated January 2023 (40 CFR 86.1826-01). ARB has approved the use of EPA assigned deterioration factors.

Based on CZVs good engineering judgment, the vehicles described in this Application for Certification comply with all applicable intermediate and full useful life standards.

Tables 1 and 2

Criteria Pollutant Assigned DF's and CHC Assigned DF's

Criteria Pollutant Assigned DFs							
Tier 3 BIN	Useful Life	CO (g/mile)	HCHO (g/mile)	NMOG (g/mile)	NOx (g/mile)	NMOG+NOx (g/mile)*	PM (g/mile)
0	150,000 miles	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
20	150,000 miles	0.06	0.0001	0.0025	0.0019	0.0043	0.0000
30	150,000 miles	0.11	0.0001	0.0034	0.0024	0.0058	0.0000
50	150,000 miles	0.16	0.0002	0.0062	0.0047	0.0109	0.0000
70	150,000 miles	0.24	0.0003	0.0098	0.0070	0.0168	0.0000
125	150,000 miles	0.38	0.0005	0.0149	0.0115	0.0264	0.0000
160	150,000 miles	0.50	0.0006	0.0198	0.0149	0.0347	0.0000

GHG Assigned DFs			
Tier 3 BIN	Useful Life	N2O (g/mile)	CH4 (g/mile)
0	120,000 miles	0.0000	0.0000
20	120,000 miles	0.0004	0.0010
30	120,000 miles	0.0007	0.0020
50	120,000 miles	0.0011	0.0026
70	120,000 miles	0.0012	0.0027
125	120,000 miles	0.0028	0.0069
160	120,000 miles	0.0034	0.0083

Table 3

Assigned Evaporative DF's

	Hot Soak + 2-day Diurnal DF	Hot Soak + 3-day Diurnal DF	Running Loss DF	ORVR DF
NIRCOS All FEL	**0.0030**	**0.0067**	**0.000**	**0.005**
Integrated system with FEL lower than 0.325	**0.0000**	**0.0021**	**0.000**	**0.006**

Section 86.1844.(d)(5) - Test Group Description

Test group name:	VCZVV02.9CJP
Engine displacement:	2.9 Liter
Cylinder configuration:	V8
Propulsion system:	Hybrid (non plug-in)
Electric motor capacity:	Traction: 200 kW (peak) each MGU: 150 kW
Electric motor voltage:	806 V
Electric motor type:	3-Phase Radial Flux Permanent Magnet Synchronous Motor/Generator
Number of electric motors:	3 in total (2 traction, 1 MGU)
Electric motor weights:	Traction: 18.3 Kg, MGU: 13.3 Kg
Propulsion battery capacity:	4.2 kWh
Propulsion battery voltage:	806 V
Propulsion battery type:	Lithium Nickel Cobalt Aluminum Oxide
Inverters:	3 total, one per motor
Cooling description:	Five separate fluid cooling circuits: High temperature system, for base engine cooling and cabin heating using coolant to air heat exchangers. Medium temperature system for charge air, rear Motor Generator Unit, inverter and DC-DC cooling using coolant to air heat exchangers. Low temperature system for front electric drive units, inverters, and DC-DC cooling using coolant to air heat exchangers. Battery cooling system, immersive cooling the high voltage batteries using dielectric to coolant heat exchangers, interacting with the low temperature system. Transmission oil cooling using oil to air heat exchangers.
Test vehicles numbers:	4C9PBPEKXRL561002, 4C9PBPEKXRL561003
Equivalent test weight (ETW)	3750
Axle ratio:	3.32
Vehicle drive mode while testing:	Sport/Automatic
GVWR:	4076
Engine Code:	SK32
Vehicle class covered:	LDV, Passenger Car
Federal emissions standards class:	Tier 3 Bin 50
California emissions standards:	LEV-III ULEV 50

Section 86.1844(d)(6) - Test Vehicle Description

The test group contains three carlines. Therefore, all requirements in §86.1828-01, Emission data vehicle (EDV) selection, are met using the worst-case vehicle. The vehicles are identified and described below.

Test Group: VCZVV02.9CJP
Evaporative/Refueling Family: VCZVR0130AA1

VID	Config	Vehicle Type	Tests Performed
4C9PBPEKXRL561002	Sport mode	Cert Emissions	FTP75 75°F, HWFET, US06, SC03.
4C9PBPEKXRL561003	Sport Mode	Cert Emissions	Cold CO/NMHC, FTP75 50°F
4C9PBPEKXRL561002	Sport mode	Cert Emissions	ORVR, 3-Day SHED, Running Loss

Section 86.1844(d)(7) - Emission standards and Test Results

Make and model of represented vehicles:	Czinger 21C and variants
Vehicle drive source:	ICE and motors
Fuel:	Gasoline
Rechargeable energy storage system:	Lithium Nickel Cobalt Aluminum Oxide
Off-board charging:	N/A
Engine displacement:	2.9 Liter
Engine code:	SK32
Transmission type and number of gears:	7 speed automated manual selectable
Equivalent test weight (lb):	3750
Axel ratio:	3.32
Vehicle drive mode while testing:	Sport Mode
Dynamometer road load target coefficients	
F_0:	34.8 [lb]
F_1:	1.03255 [lb/(mph)]
F_2:	0.037608 [lb/(mph)^2]
Aged emission components:	Catalysts and sensors SRC aged to 4k miles
Engine rated horsepower:	750 hp @10,500 RPM

The vehicle will be assessed against the applicable standalone test limits for Tier 3 Bin 50 and LEV-III ULEV50 as applicable. The constituent test limits are given as:

Constituent	4K	50K	120K	150K	
FTP75					
NMOG+NOx				0.050	g/mile
CO				1.7	g/mile
HCHO				0.004	g/mile
PM				0.003	g/mile
HWFET					
NMOG+NOx				0.050	g/mile
FTP75 20F Cold CO					
CO		10			g/mile
			0.3		g/mile
US06					
NMOG+NOx				0.050	g/mile
CO				9.6	g/mile
PM				0.06	g/mile
SC03					
NMOG+NOx				0.070	g/mile
CO				3.2	g/mile
FTP75 50F					
NMOG+NOx	0.100				g/mile
CO	10				g/mile
EVAP 3-Day				0.300	g/test
Running Loss				0.05	g/mile
ORVR				0.20	g/test
Canister Bleed				0.020	g/test

EVCIS Report

Date: 04/13/2026 07:52:38 PM

Certification Summary Information Report

Manufacturer	CZV Inc	**Manufacturer Code**	CZV
Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1
Certificate Number	--	**CARB Executive Order #**	--
Certificate Issue Date	--	**Certificate Revision Date**	--
Certificate Effective Date	--	**Conditional Certificate**	--
CSI Revision #	--	**CSI Submission/Revision Date**	04/13/2026 07:49:37 PM
Model Year	2027		

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Group Information

CSI Type	Update for Correction	**Running Change Reference Number**	--
GHG Exempt Status	Small Business Administration Exemption		

Drive Sources and Fuel(s)

Drive Source #1: Combustion Engine

Fuel	Basic Fuel Metering System	Lean Burn Strategy Indicator
Gasoline	Multipoint/sequential fuel injection	No

Drive Source #2: Electric Motor

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

Hybrid Indicator	Yes		
Multiple Fuel Storage	--	**Rechargeable Energy Storage System Indicator**	Yes
Multiple Fuel Combustion	--	**Off-board Charge Capable Indicator**	No
Fuel Cell Indicator	No	**EPA Vehicle Class**	LDV
Federal Clean Fuel Vehicle	No	**Federal Clean Fuel Vehicle Standard**	--
Federal Clean Fuel Vehicle ILEV	No	**California Partial Zero Emissions Vehicle Indicator**	--
Durability Group Name	TCZVHHGNNCJP	**Durability Group Equivalency Factor**	1
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	Not Applicable	**SFTP Tier 2 Composite CO Option**	No
SFTP LEV-III Composite Compliance Indicator	No		
OBD Compliance Type	CARB	**OBD Demonstration Vehicle Test Group**	VCZVV02.9CJP
Test Group OBD Compliance Level	Partial - with deficiencies	**Number of Test Group OBD Deficiencies**	1
OBD Deficiencies Comments	CARB OBD Approval Pending, 2025MY deficiency granted for misfire.		
Mfr Test Group Comments	Czinger will use, according to CFR 86.1811-17, the SFTP stand-alone option specified in 13 CCR 1961.2 (a)(7)(A)1 of the LEV III program to demonstrate compliance with EPA's SFTP standards.		
Mfr Exhaust / Evap Standards Comments	--		

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Evaporative/Refueling Family Information			
Evaporative Summary Information Type	New	**Submission/Correction Date**	04/13/2026 06:43:56 PM
Integrated ORVR?	Yes	**Fuel(s)**	Gasoline
Multiple Fuel Storage	--		
Bladder Fuel Tank?	No		
Fuel Tank Material	Metal	**Fuel Tank Material Description**	--
Fill Pipe Seal Type	Liquid seal		
Air Intake System Vapor Storage Device?	Yes	**Air Intake System Vapor Storage Device Description**	Carbon filter (HC Trap) on air inlet next to air filter
Fuel System Vapor Storage Canister?	Yes	**Other Vapor Storage**	--
Fuel System Vapor Storage Canister(s) Total Working Capacity (grams)	130	**Number of Primary Canisters**	1
Number of Bleed Canisters	0	**Bleed Canister Total Working Capacity (grams)**	--
Mfr Evaporative/Refueling Family Comments	--		
Leak Family Details			
Leak Family Indicator	No		
Canister Bleed Test Indicator	Yes	**Applicability of Evaporative Canister Bleed Test**	50 State
Evaporative Canister Bleed Test Comments	--		
CARB Fuel Only (Rig) Test Indicator	No	**Applicability of CARB Fuel Only (Rig) Test**	--
CARB Fuel Only (Rig) Test Comments	--		

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Models Covered by this Certificate

Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup
CZV Inc	1 - CZINGER	4 - Czinger 21C Spyder	California + CAA Section 177 states	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No
CZV Inc	1 - CZINGER	1 - Czinger 21C	California + CAA Section 177 states	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No
CZV Inc	1 - CZINGER	1 - Czinger 21C	Federal	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No
CZV Inc	1 - CZINGER	2 - Czinger 21C V Max	California + CAA Section 177 states	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No
CZV Inc	1 - CZINGER	4 - Czinger 21C Spyder	Federal	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No
CZV Inc	1 - CZINGER	2 - Czinger 21C V Max	Federal	Part-time 4-Wheel Drive	Automated Manual-Selectable (e.g. Automated Manual with paddles)	7	No

Engine Description

Hybrid Type	IC Engine/Electric Motor	**Hybrid Description**	3-Phase Radial Flux Permanent Magnet Synchronous Motor/Generator 3 in total (2 traction, 1 MGU)
Engine Type	4-Stroke Spark Ignition	**Mfr Engine Description**	Twin turbo, conventional spark ignition internal combustion engine.
Engine Block Arrangement	V-shaped engine	**Mfr Engine Block Arrangement Description**	--
Camless Valvetrain Indicator	No	**Oil Viscosity/Classification**	10W40
Number of Cylinders/Rotors	8	**Mechanically Variable Compression Ratio Indicator**	N

After Treatment Device(s) (ATD)

ATD Number	ATD Type	ATD Precious Metal	Substrate Material	Substrate Construction
1	Three-way catalyst	Palladium + Rhodium	Metal	Monolith
2	Three-way catalyst	Palladium + Rhodium	Metal	Monolith

Mfr After Treatment Device (ATD) Comments	Number of Catalysts: One can per cylinder bank, two cans in total. Each can contains two monolith, one front and one rear.
Direct Ozone Reduction (DOR) Device	Not Equipped
Mfr Emission Control Device Comments	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Engine Configuration Number 1

Engine Displacement (liters)	2.9	**Engine Rated Horsepower**	750
Number of Inlet Valves Per Cylinder	2	**Number of Exhaust Valves Per Cylinder**	1
Air Aspiration Method	Turbocharged	**Number of Air Aspiration Devices**	2
Air Aspiration Device Configuration	Parallel	**Charge Air Cooler Type**	Liquid
Air Aspiration Drive Method(s)	Mechanical		
Cylinder Deactivation	No		
Cylinder Deactivation Description	--		
Variable Valve Timing	No		
Variable Valve Timing System Description	--		
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	Twin turbo. turbos working in parallel - one turbine per bank		

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	SCZV10088240	SCZV10088239	SCZV10088233	SCZV10088234	SCZV10088238	--	--	--	--	--
Gasoline	SCZV10088240	SCZV10088239	SCZV10088233	SCZV10088234	SCZV10088238	13.1	10.3	16.1	286.1	--

SFTP LEV-III Official Test Numbers

Test Group Fuel	FTP	US06	SC03
Gasoline	SCZV10088240	SCZV10088239	SCZV10088233

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
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	806	**Battery Energy Capacity**	5.25
Battery Specific Energy	58.3	**Battery Charger Type**	On-Board
Number of Capacitors	--	**Capacitor Rating (In Farads)**	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Not applicable		
Regenerative Braking Source	--	**Driver Controlled Regenerative Braking**	--
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	2		
Motor/Generator Type 1	AC Induction	**Rated Motor/Generator Power**	200
Motor/Generator Type 2	AC Induction	**Rated Motor/Generator Power**	200
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	**Usable H2 Fill Capacity (kg)**	--
Mfr Hybrid Electric/ Electric Vehicle Comments	3-Phase Radial Flux Permanent Magnet Synchronous Motor/Generator, MGU (1 pc): 201 HP, Wheel motors (2 pcs): 268 HP each 3x Electric Motors (1x Advanced axial flux Motor Generator Unit (MGU) + 2x high output electric motors with torque-vectoring function for efficient wheel control		

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Emission Data Vehicle Information

Vehicle ID / Configuration	4C9PBPEKXRL561002 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	SCZVV02.9CJP	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2025		

Vehicle Model

Represented Test Vehicle Make	Czinger	**Represented Test Vehicle Model**	21C

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

Drive Sources and Fuel System Details

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

Hybrid Indicator	No		
Multiple Fuel Storage	--	**Multiple Fuel Combustion**	Fuels Combusted Separately
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	0
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	SK32	**Rated Horsepower**	750
Displacement (liters)	2.9		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Liquid	**Drive Mode While Testing**	4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	3635	**Equivalent Test Weight (pounds)**	3750
GVWR (lbs)	4076	**N/V Ratio**	3.3
Axle Ratio	3.32		
Transmission Type	Automatic	**# of Transmission Gears**	7
Transmission Lockup	No	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

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	34.823	1.03255	0.037608	4.42	0.8055	0.03798	24.1
Cold CO	34.82	1.0326	0.37608	38.302	1.1363	0.041371	N/A
US06	34.823	1.03255	0.037608	4.42	0.8055	0.03798	N/A

Emission Control Device Comments --

Manufacturer Test Vehicle Comments The vehicle is not defined as a PHEV, Electric motor 3x Electric Motors (1x Advanced axial flux Motor Generator Unit (MGU) + 2x high output electric motors with torque-vectoring function for efficient wheel control)

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Test #	**SCZV10088240**	**Test Procedure**	**31 - Federal fuel 3-day exhaust**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/12/2024	**Fuel**	Gasoline
Fuel Batch ID	175259	**Fuel Calibration Number**	4205
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4176	**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	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	682.815	--
CO BAG 1 (Bag 1 Carbon Monoxide)	0.4487	--
FE BAG 1 (Bag 1 Fuel Economy)	12.691	12.691
CH4 BAG 1 (Bag 1 Methane)	0.01	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0969	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	752.215	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.3763	--
FE BAG 2 (Bag 2 Fuel Economy)	11.529	11.529
CH4 BAG 2 (Bag 2 Methane)	0.0011	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0	--
CO2 BAG 3 (Bag 3 Carbon Dioxide)	521.514	--
CO BAG 3 (Bag 3 Carbon Monoxide)	0.5194	--
FE BAG 3 (Bag 3 Fuel Economy)	16.616	16.616
CH4 BAG 3 (Bag 3 Methane)	0.0052	--
NMOG BAG 3 (Bag 3 Non-methane organic gases)	0	--
CO2 BAG 4 (Bag 4 Carbon Dioxide)	732.364	--
CO BAG 4 (Bag 4 Carbon Monoxide)	0.3166	--
FE BAG 4 (Bag 4 Fuel Economy)	11.843	11.843
CH4 BAG 4 (Bag 4 Methane)	0.0006	--
NMOG BAG 4 (Bag 4 Non-methane organic gases)	0	--
METHANE (CH4 - Methane)	0.0039	--
CO (Carbon Monoxide)	0.4127	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	0.9014	--
DT-EER (Drive Trace Energy Economy Rating)	0.0282	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.7679	--
HCHO (Formaldehyde)	0.00066	--
MFR FE (Manufacturer Fuel Economy)	12.96	12.96
NOX (Nitrogen Oxide)	0.005	--
N2O (Nitrous Oxide)	0.001	--
HC-NM (Non-methane Hydrocarbon)	0.0202	--
NMOG (Non-methane organic gases)	0.02222	--
PM (Particulate Matter)	0.0009	--
HC-TOTAL (Total Hydrocarbon)	0.0232	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	668.9049	670

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	668.9	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

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 50	CO	0.41	--	--	--	0.16	--	0.6	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0007	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0039	--	--	--	0	--	0.004	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.001	--	--	--	0	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0222	--	--	--	0.0062	--	0.028	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0272	--	--	--	--	--	0.038	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.005	--	--	--	0.0047	--	0.01	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	0.41	--	--	--	0.16	--	0.6	1.7	Pass
CA	150,000 miles	California LEV-III ULEV50	HCHO	0.0007	--	--	--	0.0005	--	0.001	0.016	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0222	--	--	--	0.0062	--	0.028	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0272	--	--	--	--	--	0.038	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.005	--	--	--	0.0047	--	0.01	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088241**	**Test Procedure**	**31 - Federal fuel 3-day exhaust**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	08/21/2024	**Fuel**	Gasoline
Fuel Batch ID	A58531	**Fuel Calibration Number**	2351
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4176	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	791.022	--
FE BAG 1 (Bag 1 Fuel Economy)	11.326	11.326
CO2 BAG 2 (Bag 2 Carbon Dioxide)	592.18	--
FE BAG 2 (Bag 2 Fuel Economy)	15.132	15.132
CO2 BAG 3 (Bag 3 Carbon Dioxide)	566.74	--
FE BAG 3 (Bag 3 Fuel Economy)	15.818	15.818
CO2 BAG 4 (Bag 4 Carbon Dioxide)	453.928	--
FE BAG 4 (Bag 4 Fuel Economy)	19.747	19.747
METHANE (CH4 - Methane)	0.0042	--
CO (Carbon Monoxide)	0.4376	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	4.5481	--
DT-EER (Drive Trace Energy Economy Rating)	2.4123	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	7.2335	--
HCHO (Formaldehyde)	0.000696	--
MFR FE (Manufacturer Fuel Economy)	15.31	15.31
NOX (Nitrogen Oxide)	0.0043	--
N2O (Nitrous Oxide)	0.001	--
HC-NM (Non-methane Hydrocarbon)	0.0232	--
NMOG (Non-methane organic gases)	0.02552	--
HC-TOTAL (Total Hydrocarbon)	0.026	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	585.4452	586

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	585.44	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.44	--	--	--	0.16	--	0.6	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0007	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0042	--	--	--	0	--	0.004	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.001	--	--	--	0	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0255	--	--	--	0.0062	--	0.032	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0298	--	--	--	--	--	0.041	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0043	--	--	--	0.0047	--	0.009	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	0.44	--	--	--	0.16	--	0.6	1.7	Pass
CA	150,000 miles	California LEV-III ULEV50	HCHO	0.0007	--	--	--	0.0005	--	0.001	0.016	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0255	--	--	--	0.0062	--	0.032	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0298	--	--	--	--	--	0.041	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0043	--	--	--	0.0047	--	0.009	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	585.44	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.44	--	--	--	0.16	--	0.6	1.7	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	HCHO	0.0007	--	--	--	0.0002	--	0.001	0.004	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	METHANE	0.0042	--	--	--	0	--	0.004	0.030	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	N2O	0.001	--	--	--	0	--	0.001	0.010	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0255	--	--	--	0.0062	--	0.032	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0298	--	--	--	--	--	0.041	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0043	--	--	--	0.0047	--	0.009	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	0.44	--	--	--	0.16	--	0.6	1.7	Pass
CA	150,000 miles	California LEV-III ULEV50	HCHO	0.0007	--	--	--	0.0005	--	0.001	0.016	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0255	--	--	--	0.0062	--	0.032	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0298	--	--	--	--	--	0.041	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0043	--	--	--	0.0047	--	0.009	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088238**	**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	08/23/2023	**Fuel**	Gasoline
Fuel Batch ID	175290	**Fuel Calibration Number**	4205
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4345	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.004	--
CO (Carbon Monoxide)	0.4798	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	6.8618	--
DT-EER (Drive Trace Energy Economy Rating)	0.0355	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	8.8188	--
MFR FE (Manufacturer Fuel Economy)	16.49	16.49
NOX (Nitrogen Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0015	--
NMOG (Non-methane organic gases)	0.00165	--
HC-TOTAL (Total Hydrocarbon)	0.0056	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	525.5441	999

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	525.54	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Summary Information Report

Test Group VCZVV02.9CJP **Evaporative/Refueling Family** VCZVR0130AA1

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 50	NMOG	0.0016	--	--	--	0.0062	--	0.008	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0	--	--	--	0.0047	--	0.005	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0016	--	--	--	0.0062	--	0.008	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0016	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0	--	--	--	0.0047	--	0.005	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test #	**SCZV10088242**	**Test Procedure**	**3 - HWFE**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	61 - Tier 2 Cert Gasoline
Test Date	08/21/2024	**Fuel**	Gasoline
Fuel Batch ID	A58531	**Fuel Calibration Number**	2351
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4213	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
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)	0.004	--
CO (Carbon Monoxide)	0.4125	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	9.0635	--
DT-EER (Drive Trace Energy Economy Rating)	0.2481	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	12.013	--
MFR FE (Manufacturer Fuel Economy)	16.71	16.71
NOX (Nitrogen Oxide)	0	--
HC-NM (Non-methane Hydrocarbon)	0.0007	--
NMOG (Non-methane organic gases)	0.00077	--
HC-TOTAL (Total Hydrocarbon)	0.0048	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	536.394	537

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	536.39	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0008	--	--	--	0.0062	--	0.007	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0008	--	--	--	--	--	0.012	0.050	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0	--	--	--	0.0047	--	0.005	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0008	--	--	--	0.0062	--	0.007	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0008	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0	--	--	--	0.0047	--	0.005	99.000	Pass

Test #	**SCZV10088243**	**Test Procedure**	**34 - Federal fuel 3-day evap**
Exhaust Test # for this Evap Test	SCZV10088240	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/12/2024	**Fuel**	Gasoline
Fuel Batch ID	142145	**Fuel Calibration Number**	5175
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4345	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.303	--

Manufacturer Test Comments E10 Evaporative Test Measurement Method Calculated (1.08 x FID Total Hydrocarbons)

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	0.303	0	0.303	0.325	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.303	0	0.303	0.325	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088244**	**Test Procedure**	**24 - Federal fuel refueling test (ORVR)**
Exhaust Test # for this Evap Test	SCZV10088240	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/06/2024	**Fuel**	Gasoline
Fuel Batch ID	175290	**Fuel Calibration Number**	4205
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4531	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	Yes

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC (Hydrocarbon for Running Loss and ORVR)	0.041	--

Manufacturer Test Comments --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC	0.04	0.006	0	0.2	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC	0.04	0.006	0	0.2	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088245**	**Test Procedure**	**32 - Federal Fuel Running Loss**
Exhaust Test # for this Evap Test	SCZV10088240	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	09/12/2024	**Fuel**	Gasoline
Fuel Batch ID	175290	**Fuel Calibration Number**	4205
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4514	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.04	--

Manufacturer Test Comments E10 Evaporative Test Measurement Method Calculated (1.08 x FID Total Hydrocarbons)

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	0.04	0	0.04	0.05	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.04	0	0.04	0.05	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Test #	**SCZV10088239**	**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	08/23/2024	**Fuel**	Gasoline
Fuel Batch ID	175259	**Fuel Calibration Number**	4205
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4192	**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	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	519.708	--
CO BAG 1 (Bag 1 Carbon Monoxide)	1.0391	--
FE BAG 1 (Bag 1 Fuel Economy)	16.647	16.647
CH4 BAG 1 (Bag 1 Methane)	0.0012	--
NMOG BAG 1 (Bag 1 Non-methane organic gases)	0.0021	--
CO2 BAG 2 (Bag 2 Carbon Dioxide)	645.854	--
CO BAG 2 (Bag 2 Carbon Monoxide)	0.744	--
FE BAG 2 (Bag 2 Fuel Economy)	13.413	13.413
CH4 BAG 2 (Bag 2 Methane)	0.0032	--
NMOG BAG 2 (Bag 2 Non-methane organic gases)	0.00033	--
METHANE (CH4 - Methane)	0.0028	--
CO (Carbon Monoxide)	0.81	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-0.8614	--
DT-EER (Drive Trace Energy Economy Rating)	-0.4974	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	-0.7942	--
HCHO (Formaldehyde)	0	--
MFR FE (Manufacturer Fuel Economy)	14.02	14.02
NOX (Nitrogen Oxide)	0.0007	--
N2O (Nitrous Oxide)	0.0001	--
HC-NM (Non-methane Hydrocarbon)	0.0007	--
NMOG (Non-methane organic gases)	0.00077	--
PM (Particulate Matter)	0.005	--
HC-TOTAL (Total Hydrocarbon)	0.0035	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	617.72	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	0.81	--	--	--	0.16	--	1	9.6	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0008	--	--	--	0.0062	--	0.007	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0015	--	--	--	--	--	0.012	0.120	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0007	--	--	--	0.0047	--	0.005	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	0.81	--	--	--	0.16	--	1	9.6	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0008	--	--	--	0.0062	--	0.007	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0015	--	--	--	--	--	0.012	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0007	--	--	--	0.0047	--	0.005	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088233**	**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	08/29/2023	**Fuel**	Gasoline
Fuel Batch ID	175290	**Fuel Calibration Number**	4205
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	Automotive Testing & Development Services		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4447	**Odometer Units**	M
4WD Test Dyno	Yes	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
METHANE (CH4 - Methane)	0.0061	--
CO (Carbon Monoxide)	1.5067	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	-2.0231	--
DT-EER (Drive Trace Energy Economy Rating)	0.4856	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	0.1383	--
HCHO (Formaldehyde)	0	--
MFR FE (Manufacturer Fuel Economy)	10.76	10.76
NOX (Nitrogen Oxide)	0.0083	--
N2O (Nitrous Oxide)	0.0001	--
HC-NM (Non-methane Hydrocarbon)	0.0001	--
NMOG (Non-methane organic gases)	0.00011	--
HC-TOTAL (Total Hydrocarbon)	0.0061	--

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	803.9	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 50	CO	1.51	--	--	--	0.16	--	1.7	3.2	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG	0.0001	--	--	--	0.0062	--	0.006	99.000	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NMOG+NOX	0.0084	--	--	--	--	--	0.019	0.070	Pass
Fed	150,000 miles	Federal Tier 3 Bin 50	NOX	0.0083	--	--	--	0.0047	--	0.013	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	CO	1.51	--	--	--	0.16	--	1.7	1.7	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG	0.0001	--	--	--	0.0062	--	0.006	99.000	Pass
CA	150,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0084	--	--	--	--	--	0.019	0.050	Pass
CA	150,000 miles	California LEV-III ULEV50	NOX	0.0083	--	--	--	0.0047	--	0.013	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088246**	**Test Procedure**	**65 - Evap Canister Bleed Test**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)
Test Date	04/10/2024	**Fuel**	Gasoline
Fuel Batch ID	175290	**Fuel Calibration Number**	4205
Vehicle Class	N/A	**DF Type**	EPA Assigned
Verify Test Lab ID	IDIADA		
E10 Evaporative Test Measurement Method	Calculated (1.08 x FID Total Hydrocarbons)		
Test Start Odometer Reading	4514	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value
HC-TOTAL-EQUIV (Total Hydrocarbon equivalent - Evap only)	0.0091	--

Manufacturer Test Comments --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	Add DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Evap	HC-TOTAL-EQUIV	0.0091	0	0.009	0.02	Pass
CA	150,000 miles	California LEV-III Zero Evap (Option 2)	HC-TOTAL-EQUIV	0.0091	0	0.009	0.02	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Emission Data Vehicle Information

Vehicle ID / Configuration	4C9PBPEKXRL561003 / 0	**Manufacturer Vehicle Configuration Number**	0
Original Test Group Name	SCZVV02.9CJP	**Original Evaporative/Refueling Family**	--
Original Test Vehicle Model Year	2025		

Vehicle Model

Represented Test Vehicle Make	Czinger	**Represented Test Vehicle Model**	21C

Leak Family Details

Leak Family Identifier	--	**Leak Family Name**	--

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**	Fuels Combusted Separately
Fuel Cell Indicator	No	**Rechargeable Energy Storage System Indicator**	Yes
Rechargeable Energy Storage System	Battery(s)	**Rechargeable Energy Storage System, if 'Other'**	--
Off-board charge Capable Indicator	No		
Odometer Correction -- Initial	0	**Odometer Correction Factor**	0
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles		
Odometer Correction Units	Miles		
Engine Code	1C1-29BH	**Rated Horsepower**	750
Displacement (liters)	2.9		
Air Aspiration Method	Turbocharged	**Air Aspiration Method, if 'Other'**	
Number of Air Aspiration Devices	2	**Air Aspiration Device Configuration**	Parallel
Charge Air Cooler Type	Liquid	**Drive Mode While Testing**	4-Wheel Drive
Shift Indicator Light Usage	Not eqipped	**Aged Emission Components**	4,000 (mi)
Curb Weight (lbs)	3635	**Equivalent Test Weight (pounds)**	3750
GVWR (lbs)	4076	**N/V Ratio**	41.8
Axle Ratio	3.32		
Transmission Type	Automatic	**# of Transmission Gears**	7
Transmission Lockup	No	**Creeper Gear**	No

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

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	34.823	1.03255	0.037608	4.42	0.8055	0.03798	24.1
Cold CO	38.305	1.13581	0.041369	-17.65	0.5131	0.04654	N/A
US06	34.823	1.03255	0.037608	4.42	0.8055	0.03798	N/A

Emission Control Device Comments This Vehicle is not a plug-in Hybrid

Manufacturer Test Vehicle Comments The vehicle is not defined as a PHEV, Electric motor 3x Electric Motors (1x Advanced axial flux Motor Generator Unit (MGU) + 2x high output electric motors with torque-vectoring function for efficient wheel control)

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1

Test #	**SCZV10088234**	**Test Procedure**	**11 - Cold CO**
Exhaust Test # for this Evap Test	--	**Test Fuel Type**	29 - Cold CO E10 Premium Gasoline (Tier 3)
Test Date	10/18/2024	**Fuel**	Gasoline
Fuel Batch ID	S-0377	**Fuel Calibration Number**	722
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	VW Emission Control Test Laboratory		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4589	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	901.378	--
FE BAG 1 (Bag 1 Fuel Economy)	9.5762	9.5762
CO2 BAG 2 (Bag 2 Carbon Dioxide)	633.217	--
FE BAG 2 (Bag 2 Fuel Economy)	13.6822	13.6822
CO2 BAG 3 (Bag 3 Carbon Dioxide)	819.943	--
FE BAG 3 (Bag 3 Fuel Economy)	10.5592	10.5592
METHANE (CH4 - Methane)	0.0124	--
CO (Carbon Monoxide)	0.8138	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.7707	--
DT-EER (Drive Trace Energy Economy Rating)	0.3495	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	3.0475	--
HCHO (Formaldehyde)	0.0033	--
MFR FE (Manufacturer Fuel Economy)	11.6947	11.6947
NOX (Nitrogen Oxide)	0.0163	--
HC-NM (Non-methane Hydrocarbon)	0.1116	--
NMOG (Non-methane organic gases)	0.1226	--
HC-TOTAL (Total Hydrocarbon)	0.1236	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	742	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	739.9857	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	50,000 miles	Federal Tier 3 Bin 50	CO	0.81	--	--	--	0.04	--	0.8	10.0	Pass
Fed	120,000 miles	Federal Tier 3 Bin 50	HC-NM	0.11	--	1.1	--	0.0047	--	0.1	0.3	Pass
CA	50,000 miles	California LEV-III ULEV50	CO	0.81	--	--	--	0.04	--	0.8	10.0	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1
Test #	**SCZV10088235**	**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	10/17/2024	**Fuel**	Gasoline
Fuel Batch ID	S-0437	**Fuel Calibration Number**	2042
Vehicle Class	LDV/Passenger Car	**DF Type**	EPA Assigned
Verify Test Lab ID	VW Emission Control Test Laboratory		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	4561	**Odometer Units**	M
4WD Test Dyno	No	**Diesel Adjustment Factor Usage**	--
State of Charge Delta	--		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	**Road Speed Fan Usage**	No

Test Results

Test Result Name	Unrounded Test Result	Verify Calculated FE Equivalent Value (miles per gallon)
CO2 BAG 1 (Bag 1 Carbon Dioxide)	793.991	--
FE BAG 1 (Bag 1 Fuel Economy)	10.875	10.875
CO2 BAG 2 (Bag 2 Carbon Dioxide)	556.049	--
FE BAG 2 (Bag 2 Fuel Economy)	15.575	15.575
CO2 BAG 3 (Bag 3 Carbon Dioxide)	682.274	--
FE BAG 3 (Bag 3 Fuel Economy)	12.693	12.693
METHANE (CH4 - Methane)	0.0068	--
CO (Carbon Monoxide)	0.4643	--
DT-ASCR (Drive Trace Absolute Speed Change Rating)	1.2017	--
DT-EER (Drive Trace Energy Economy Rating)	0.1158	--
DT-IWRR (Drive Trace Inertia Work Ratio Rating)	1.9702	--
HCHO (Formaldehyde)	0.0017	--
MFR FE (Manufacturer Fuel Economy)	13.6	13.6
NOX (Nitrogen Oxide)	0.012	--
N2O (Nitrous Oxide)	0.0018	--
HC-NM (Non-methane Hydrocarbon)	0.0561	--
NMOG (Non-methane organic gases)	0.0617	--
HC-TOTAL (Total Hydrocarbon)	0.0627	--

Test Result Name	Unrounded Test Result	Verify Calculated CREE/OPT-CREE
Carbon-Related Exhaust Emissions	635	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Test Result Name	Unrounded Test Result	Verify Calculated CO2
Carbon dioxide	634.2992	--

Manufacturer Test Comments FE in miles per gallon. All emissions results in grams per mile. Vehicle driven in sport mode.

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
CA	4,000 miles	California LEV-III ULEV50	CO	0.46	--	--	--	--	--	0.5	1.7	Pass
CA	4,000 miles	California LEV-III ULEV50	HCHO	0.0017	--	--	--	--	--	0.002	0.016	Pass
CA	4,000 miles	California LEV-III ULEV50	NMOG	0.0617	--	1.1	--	--	--	0.062	99.000	Pass
CA	4,000 miles	California LEV-III ULEV50	NMOG+NOX	0.0737	--	1.1	--	--	--	0.074	0.100	Pass
CA	4,000 miles	California LEV-III ULEV50	NOX	0.012	--	--	--	--	--	0.012	99.000	Pass

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Fuel Properties			
Fuel Batch ID	**175290**	**Fuel Calibration Number**	**4205**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	07/18/2023
Fuel Batch Calibration Effective Date	07/18/2023	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.746
Fuel Ethanol Volume Percent (%)	9.8	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	17850
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	**Weight Fraction CO2**	--
Fuel Batch ID	**A58531**	**Fuel Calibration Number**	**2351**
Test Fuel Type	61 - Tier 2 Cert Gasoline	**Fuel Batch Calibration Date**	04/20/2023
Fuel Batch Calibration Effective Date	04/20/2023	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.74
Fuel Ethanol Volume Percent (%)	--	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	17949
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.86	**Weight Fraction CO2**	--
Fuel Batch ID	**S-0437**	**Fuel Calibration Number**	**2042**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	01/26/2023
Fuel Batch Calibration Effective Date	01/26/2023	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.744
Fuel Ethanol Volume Percent (%)	9.9	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	17725
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.823	**Weight Fraction CO2**	--
Fuel Batch ID	**S-0377**	**Fuel Calibration Number**	**722**
Test Fuel Type	29 - Cold CO E10 Premium Gasoline (Tier 3)	**Fuel Batch Calibration Date**	07/22/2022
Fuel Batch Calibration Effective Date	07/22/2022	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.743
Fuel Ethanol Volume Percent (%)	9.7	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18055
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.833	**Weight Fraction CO2**	--
Fuel Batch ID	**175259**	**Fuel Calibration Number**	**4205**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	07/18/2023
Fuel Batch Calibration Effective Date	07/18/2023	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	--	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.746
Fuel Ethanol Volume Percent (%)	9.8	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	17850
Fuel Net Heat of Combustion (E10) (MJ/kg)	41.52	**Fuel Carbon Mass Fraction (E10)**	0.826
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	0.826	**Weight Fraction CO2**	--
Fuel Batch ID	**142145**	**Fuel Calibration Number**	**5175**
Test Fuel Type	49 - Tier 3 E10 Premium Gasoline (9 RVP @Low Alt.)	**Fuel Batch Calibration Date**	10/30/2022
Fuel Batch Calibration Effective Date	09/30/2022	**Fuel Batch Calibration Ineffective Date**	--
Carbon Weight Fraction NMHC	--	**Carbon Weight Fraction HC**	--
Exhaust Carbon Weight Fraction	0.836	**Fuel Methanol Volume Fraction**	--
Fuel Density (grams/cubic ft)	--	**Fuel Specific Gravity**	0.748
Fuel Ethanol Volume Percent (%)	9.5	**Fuel Net Heating Value / Fuel Net Heat of Combustion (E0) (BTU/lb)**	18217
Fuel Net Heat of Combustion (E10) (MJ/kg)	--	**Fuel Carbon Mass Fraction (E10)**	--
Fuel Blend Carbon Weight Fraction / Fuel Carbon Mass Fraction (E0)	--	**Weight Fraction CO2**	--

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Consolidated List of Standards

Exhaust Standards

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 50
Fuel	Gasoline	**Test Procedure**	US06

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.16	9.6
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.120
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 50
Fuel	Gasoline	**Test Procedure**	HWFE

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-III ULEV50
Fuel	Gasoline	**Test Procedure**	SC03

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.16	1.7
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	California LEV-III ULEV50
Fuel	Gasoline	Test Procedure	US06

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CO	--	--	--	--	--	--	0.16	9.6
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Cert Region	Federal	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	Federal Tier 3 Bin 50
Fuel	Gasoline	Test Procedure	Federal fuel 3-day exhaust

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	--	--	--	--	--	--	0.16	1.7
150,000 miles	HCHO	--	--	--	--	--	--	0.0002	0.004
150,000 miles	METHANE	--	--	--	--	--	--	0	0.030
150,000 miles	N2O	--	--	--	--	--	--	--	0.010
150,000 miles	N2O	--	--	--	--	--	--	0	0.010
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Cert Region	California + CAA Section 177 states	Cert/In-Use Code	Cert
Vehicle Class	LDV/Passenger Car	Standard Level	California LEV-III ULEV50
Fuel	Gasoline	Test Procedure	Federal fuel 3-day exhaust

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	--	--	--	--	--	--	0.16	1.7
150,000 miles	HCHO	--	--	--	--	--	--	0.0005	0.016
150,000 miles	N2O	--	--	--	--	--	--	--	0.010
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

Cert Region California + CAA Section 177 states
Vehicle Class LDV/Passenger Car
Fuel Gasoline
Cert/In-Use Code Cert
Standard Level California LEV-III ULEV50
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
4,000 miles	CO	--	--	--	--	--	--	--	1.7
4,000 miles	HCHO	--	--	--	--	--	--	--	0.016
4,000 miles	NMOG	--	--	1.1	--	--	--	--	99.000
4,000 miles	NMOG+NOX	--	--	1.1	--	--	1	--	0.100
4,000 miles	NOX	--	--	--	--	--	--	--	99.000

Cert Region Federal
Vehicle Class LDV/Passenger Car
Fuel Gasoline
Cert/In-Use Code Cert
Standard Level Federal Tier 3 Bin 50
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	--	--	--	--	--	--	0.16	3.2
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.070
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Cert Region California + CAA Section 177 states
Vehicle Class LDV/Passenger Car
Fuel Gasoline
Cert/In-Use Code Cert
Standard Level California LEV-III ULEV50
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	--	--	--	--	--	--	0.04	10.0

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1
Cert Region	Federal	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	Federal Tier 3 Bin 50
Fuel	Gasoline	**Test Procedure**	Cold CO

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
50,000 miles	CO	--	--	--	--	--	--	0.04	10.0
120,000 miles	HC-NM	--	--	1.1	--	--	--	0.0047	0.3

Cert Region	California + CAA Section 177 states	**Cert/In-Use Code**	Cert
Vehicle Class	LDV/Passenger Car	**Standard Level**	California LEV-III ULEV50
Fuel	Gasoline	**Test Procedure**	HWFE

Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	NMOG	--	--	--	--	--	--	0.0062	99.000
150,000 miles	NMOG+NOX	--	--	--	--	--	1	--	0.050
150,000 miles	NOX	--	--	--	--	--	--	0.0047	99.000

Evaporative/Refueling Standards

Evaporative/Refueling Family	VCZVR0130AA1	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-III 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	--	0.325	0

Evaporative/Refueling Family	VCZVR0130AA1	**Cert Region**	Federal
Cert/In-Use Code	Cert	**Standard Level**	Federal Tier 3 Evap
Test Procedure	Evap Canister Bleed Test		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Evaporative/Refueling Family	VCZVR0130AA1	Cert Region	California + CAA Section 177 states
Cert/In-Use Code	Cert	Standard Level	California LEV-III Zero Evap (Option 2)
Test Procedure	Evap Canister Bleed Test		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0

Evaporative/Refueling Family	VCZVR0130AA1	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	--	0.2	0.006

Evaporative/Refueling Family	VCZVR0130AA1	Cert Region	California + CAA Section 177 states
Cert/In-Use Code	Cert	Standard Level	California LEV-III 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	--	0.2	0.006

Evaporative/Refueling Family	VCZVR0130AA1	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	--	0.325	0

Evaporative/Refueling Family	VCZVR0130AA1	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

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
Evaporative/Refueling Family	VCZVR0130AA1	Cert Region	California + CAA Section 177 states
Cert/In-Use Code	Cert	Standard Level	California LEV-III Zero Evap (Option 2)
Test Procedure	Evap Canister Bleed Test		

Fuel	Useful Life	Emission Name	Rounded Result	Std	Add DF
Gasoline	150,000 miles	HC-TOTAL-EQUIV	--	0.020	0

Evaporative/Refueling Family	VCZVR0130AA1	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	--	0.2	0.006

Evaporative/Refueling Family	VCZVR0130AA1	Cert Region	California + CAA Section 177 states
Cert/In-Use Code	Cert	Standard Level	California LEV-III 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	--	0.2	0.006

Evaporative/Refueling Family	VCZVR0130AA1	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	--	0.325	0

Evaporative/Refueling Family	VCZVR0130AA1	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

Certification Summary Information Report

Test Group	VCZVV02.9CJP	**Evaporative/Refueling Family**	VCZVR0130AA1
Evaporative/Refueling Family	VCZVR0130AA1	**Cert Region**	California + CAA Section 177 states
Cert/In-Use Code	Cert	**Standard Level**	California LEV-III 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

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1

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	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
ACT-DISTANCE	Actual Distance Driven (miles)	WATT-HRS BAG 3	Bag 3 Watt Hours
AS-VOLT	Average System Voltage	WATT-HRS BAG 4	Bag 4 Watt Hours
CO2 BAG 1	Bag 1 Carbon Dioxide	WATT-HRS	Watt Hours
CO2 BAG 2	Bag 2 Carbon Dioxide	HC-NM BAG 1	Bag 1 Non-methane Hydrocarbon
CO2 BAG 3	Bag 3 Carbon Dioxide	HC-NM BAG 2	Bag 2 Non-methane Hydrocarbon
CO2 BAG 4	Bag 4 Carbon Dioxide	HC-NM BAG 3	Bag 3 Non-methane Hydrocarbon
NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides	HC-NM BAG 4	Bag 4 Non-methane Hydrocarbon
NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides	N2O BAG 1	Bag 1 Nitrous Oxide
DT-IWRR	Drive Trace Inertia Work Ratio Rating	N2O BAG 2	Bag 2 Nitrous Oxide
DT-ASCR	Drive Trace Absolute Speed Change Rating	N2O BAG 3	Bag 3 Nitrous Oxide
DT-EER	Drive Trace Energy Economy Rating	N2O BAG 4	Bag 4 Nitrous Oxide
Certification Region			
CA	California + CAA Section 177 states	FA	Federal
Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340
B2	Federal Tier 2 Bin 2	HDV2B250	Federal Tier 3 HD Class 2b Bin 250
B3	Federal Tier 2 Bin 3	HDV2B200	Federal Tier 3 HD Class 2b Bin 200
B4	Federal Tier 2 Bin 4	HDV2B170	Federal Tier 3 HD Class 2b Bin 170
B5	Federal Tier 2 Bin 5	HDV2B150	Federal Tier 3 HD Class 2b Bin 150
B6	Federal Tier 2 Bin 6	HDV2B0	Federal Tier 3 HD Class 2b Bin 0
B7	Federal Tier 2 Bin 7	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630
B8	Federal Tier 2 Bin 8	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570
B9	Federal Tier 2 Bin 9	HDV3B400	Federal Tier 3 HD Class 3 Bin 400
B10	Federal Tier 2 Bin 10	HDV3B270	Federal Tier 3 HD Class 3 Bin 270
B11	Federal Tier 2 Bin 11	HDV3B230	Federal Tier 3 HD Class 3 Bin 230
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	HDV3B200	Federal Tier 3 HD Class 3 Bin 200
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	HDV3B0	Federal Tier 3 HD Class 3 Bin 0
L2	California LEV-II LEV	L4SULEV100	California LEV-IV SULEV100
L2OP	California LEV-II LEV Optional	L4SULEV125	California LEV-IV SULEV125
U2	California LEV-II ULEV	L4SULEV15	California LEV-IV SULEV15
S2	California LEV-II SULEV	L4SULEV150	California LEV-IV SULEV150
ZEV	California ZEV	L4SULEV170	California LEV-IV SULEV170
OT	Other	L4SULEV175	California LEV-IV SULEV175
T1	Federal Tier 1	L4SULEV20	California LEV-IV SULEV20
PZEV	California PZEV	L4SULEV200	California LEV-IV SULEV200
L2LEV160	California LEV-II LEV160	L4SULEV230	California LEV-IV SULEV230
L2ULEV125	California LEV-II ULEV125	L4SULEV25	California LEV-IV SULEV25
L2SULEV30	California LEV-II SULEV30	L4SULEV30	California LEV-IV SULEV30
L2LEV395	California LEV-II LEV395	L4SULEV75	California LEV-IV SULEV75

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
L2ULEV340	California LEV-II ULEV340	L4SULEV85	California LEV-IV SULEV85
L2LEV630	California LEV-II LEV630	L4ULEV125	California LEV-IV ULEV125
L2ULEV570	California LEV-II ULEV570	L4ULEV200	California LEV-IV ULEV200
L3LEV160	California LEV-III LEV160	L4ULEV250	California LEV-IV ULEV250
L3ULEV125	California LEV-III ULEV125	L4ULEV270	California LEV-IV ULEV270
L3ULEV70	California LEV-III ULEV70	L4ULEV40	California LEV-IV ULEV40
L3ULEV50	California LEV-III ULEV50	L4ULEV400	California LEV-IV ULEV400
L3SULEV30	California LEV-III SULEV30	L4ULEV50	California LEV-IV ULEV50
L3SULEV20	California LEV-III SULEV20	L4ULEV60	California LEV-IV ULEV60
L3LEV395	California LEV-III LEV395	L4ULEV70	California LEV-IV ULEV70
L3ULEV340	California LEV-III ULEV340	T4B170	Federal Tier 4 MDV Bin 170
L3ULEV250	California LEV-III ULEV250	T4B150	Federal Tier 4 MDV Bin 150
L3ULEV200	California LEV-III ULEV200	T4B125	Federal Tier 4 MDV Bin 125
L3SULEV170	California LEV-III SULEV170	T4B100	Federal Tier 4 MDV Bin 100
L3SULEV150	California LEV-III SULEV150	T4B85	Federal Tier 4 MDV Bin 85
L3LEV630	California LEV-III LEV630	T4B75	Federal Tier 4 MDV Bin 75
L3ULEV570	California LEV-III ULEV570	T4B70	Federal Tier 4 Bin 70
L3ULEV400	California LEV-III ULEV400	T4B65	Federal Tier 4 Bin 65
L3ULEV270	California LEV-III ULEV270	T4B60	Federal Tier 4 Bin 60
L3SULEV230	California LEV-III SULEV230	T4B55	Federal Tier 4 Bin 55
L3SULEV200	California LEV-III SULEV200	T4B50	Federal Tier 4 Bin 50
T3B160	Federal Tier 3 Bin 160	T4B45	Federal Tier 4 Bin 45
T3B125	Federal Tier 3 Bin 125	T4B40	Federal Tier 4 Bin 40
T3B110	Federal Tier 3 Transitional Bin 110	T4B35	Federal Tier 4 Bin 35
T3B85	Federal Tier 3 Transitional Bin 85	T4B30	Federal Tier 4 Bin 30
T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover	T4B25	Federal Tier 4 Bin 25
T3B70	Federal Tier 3 Bin 70	T4B20	Federal Tier 4 Bin 20
T3B50	Federal Tier 3 Bin 50	T4B15	Federal Tier 4 Bin 15
T3B30	Federal Tier 3 Bin 30	T4B10	Federal Tier 4 Bin 10
T3B20	Federal Tier 3 Bin 20	T4B5	Federal Tier 4 Bin 5
T3B0	Federal Tier 3 Bin 0	T4B0	Federal Tier 4 Bin 0
HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395		

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

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

Certification Summary Information Report

Test Group	VCZVV02.9CJP	Evaporative/Refueling Family	VCZVR0130AA1
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

Litmus Calculation

According to 40 CFR Part 86 a Litmus calculation has been performed.

Application for Certification
VCZVV02.9CJP
Litmus Calculation

Enclosed To Certification Summary Information Report

Test	Test Number	Test Procedure	Manuf. F.E.	Bag 1 F.E.	Bag 2 F.E.	Bag 3 F.E.	Bag 4 F.E.
FTP 75	SCZV10088240	31	13.0	12.7	11.5	16.6	11.8
HWFET	SCZV10088238	3	18				
US06	SCZV10088239	90		16.8	14.5		
SC03	SCZV10091914	95	14.1				
Cold CO	SCZV10088234	11	11.7	9.6	13.7	10.6	

Model Specific Calculation (5-Cycle)

City	(mi/gallon)
Start FC	0.0052
Start Fuel 75	0.0739
Start Fuel 20	0.0350
Running FC	0.0839
Label City (5-Cycle)	10.2

Highway	(mi/gallon)
Start FC	0.0004
Start Fuel 75	0.0739
Start Fuel 20	0.0350
Running FC	0.0722
Label City (5-Cycle)	12.5

Derived Calculation (5-Cycle)

Label City (5-Cycle)	10.7
Threshold (96% Derived MPG 5-Cycle)	10.3

Label Highway (5-Cycle)	12.2
Threshold (95% Derived MPG 5-Cycle)	11.6

Model Specific Calculated Label City (5-Cycle)	Threshold City (96% Derived MPG 5-Cycle)	Model Specific Calculated Label Highway (5-Cycle)	Threshold HWY (95% Derived MPG 5-Cycle)
10.2	10.3	12.5	11.6
Result	Litmus Test: **Pass**	Result	Litmus Test: **Pass**

CZV conducted FTP, HWY, US06, and SC03 using Tier3 E10 gasoline and Cold using Cold E10 gasoline for Litmus.

Section 86.1844(d)(8) – Compliance Statements

High Altitude Evaporative/Refueling Emissions
In accordance with 40 CFR 86.1829-15 (c), CZV hereby certifies that, based upon engineering evaluation and development tests, the vehicles of this test group comply with the high altitude evaporative/refueling emissions requirements.

SFTP A/F ratio lean best torque Compliance Statement
Vehicles described in this application are compliant to the SFTP A/F ratio lean best torque regulations as per 40 CFR 86.1811-17 (d)(1)(1). Certified vehicles maintain an air to fuel ratio within 4% of LBT (lean-best-torque).

Fuel storage system leak test procedure
CCZV certifies that the vehicle inherently meet the fuel storage system leak test procedure according to 40 CFR 1066.985.

91 RON testing / Knock sensor (CD-14-19)
CZV ensures that the city and highway fuel economy test result differences btw comparing 91 RON operation and 96 RON operation is within 3%, and there are no emission increases (beyond normal test variability) using 91 RON fuel when tested on the FTP & SFTP.

Leak Detection Compliance Statement
Czinger affirms that all light-duty vehicles comply with the applicable leak diameter standard. The OBD diagnostic detects leakage when in the fuel system a calibrated hole of 0.040” and 0.020” is made. The P-Codes associated are P0442 and P0456. In accordance with 40 CFR 86.189-15(E)(4), data submittal is waived on the basis of this statement.

Partial Soak Standards
CZV Inc hereby states that all test groups within this application comply with the Partial Soak Standards outlined in 13 CCR § 1961.4 (d)(2)(B), California 2027 and Subsequent Model Year Criteria Pollutant Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

Formaldehyde Emissions Compliance Statement
In accordance with 40 CFR 86.1829-01 (b) (1) (iii) (E), CZV Inc hereby states that based on results obtained from emission testing, vehicles certified comply with the applicable formaldehyde emission standards.

Spit back Compliance Statement
In accordance with 40 CFR 86.1810-01 (1) (I) (i), (ii) CZV Inc. hereby certifies that, based on the ORVR test results, the vehicle inherently meets the Fuel Dispensing Spit Back Standard as part of compliance with the refueling emission standard. This certification applies to the full useful life of the vehicle.

Leak Free Exhaust System Compliance Statement
CZV ensures that the exhaust system has been designed to facilitate leak-free assembly, installation and operation for the full useful life of the vehicle and to facilitate that repairs can be performed in a manner to maintain leak-free operation according to 40 CFR 86.1844-01 (d)(16)(i).

Emissions continuity
The Engine Control Module (ECM) has been calibrated to meet exhaust emission standards for Cold CO and FTP. No discontinuities were implemented in the calibration outside these two temperature windows. Based on engineering judgement it is expected that no discontinuity in emissions of NMOG, CO, CO2, N2O, NOx, CH4 and HCHO are expected on the FTP and Highway tests when tested at temperatures ranging from 20 to 86 degrees F. Also FTP testing at 50F shows no discontinuity in emissions.

OBD Compliance Statement
The OBD system meets the full intent of both the Clean Air Act as amended in 1990, section 202(m), and the federal OBD regulations contained in 40 CFR 86.1805-17 and 40 CFR 86.1806-01 as requested by the DMFr Letter CCD-02-19 as of December 12, 2002.

A/C-on Specific Calibrations
In accordance with §86.1810-01(i)(13)(iii) CZV Inc states that A/C-on calibration does not reduce the NMHC + NOx emission control effectiveness.

Lean on cruise calibration strategies
In accordance with §86.1810-01(i)(14) CZV Inc states that none of its vehicles manufactured and sold in the United States use “lean-on-cruise” calibration strategies.

Emission control diagnostics
The CZV Inc emission control diagnostic system is adequate for the performance warranty test described in 40 CFR Part 85, subpart W.

Waiver of two-diurnal evaporative certification test
CZV Inc hereby certifies that, based on good engineering judgement, the vehicle described in this Application for Certification complies with the standards for the supplemental two-diurnal test sequence, refer to § 86.1829-15 (e)(6).

NMOG/NMHC ratios (40CFR §86.1810-01 (o))
CZV Inc mentions in specific applications that, for certain tests, the measured NMHC value will be adjusted to represent NMOG emissions as allowed under 40 CFR§86.1810-01(o) or under 40FR§1066.635(c). (Ratio 1.10).

Cold Temperature Defeat Device
CZV Inc states that its test group has been designed to comply with the intermediate temperature (25°F – 68°F) cold testing defeat device guidelines. The cold fuel enrichment calibrations of this engine family have been designed with at least proportional CO control of the interpolated standard at intermediate ambient temperatures. This design control and development data run at intermediate temperatures serve to demonstrate compliance with the guidelines contained in 40 CFR § 86.1809-12(c).

Defeat Device
CZV Inc states that any element of design, system, or emission control device installed on or incorporated in Czinger new motor vehicles or new motor vehicles engines, for the purpose of complying with standards prescribed under Section 202 of the Clean Air Act, are not equipped with auxiliary emission control devices that can be classified as a defeat device as defined in 40 CFR §86.1803-01. CZV's test and production vehicles do not have defeat devices. All AECDs have been declared and described in the application. This test group has been designed and engineered to comply with 40 CFR 86.1809-12 (prohibition of defeat devices), and does not utilize alternate emissions control maps that are unique for testing purposes relative to on road operation.

Altitude Performance Adjustments
CZV Inc states that none of its vehicles manufactured and sold in the United States require altitude performance adjustments. All CZV vehicles monitor engine operations by the use of a powertrain control module and adjust the operation of the engine to perform satisfactorily at all altitudes.

Durability Provision Statement
CZV Inc hereby certifies that, based on good engineering judgement and durability testing, the vehicle described in this Application for Certification complies with all applicable intermediate and full useful life standards.

Emission Standards for LDV
Based on good engineering judgment CZV Inc states, according to 40 CFR §86.1811-17, that all test vehicles for which data are submitted to demonstrate compliance with this part are in all material respects as described in our application for certification, that they have been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the application for certification, and that on the basis of such tests, the vehicles conform to the requirements of the regulations.

Green House Gas (GHG) Compliance Statement
CZV Inc is a Small Business Entity as per 40 CFR 86.1801-12(j): The number of CZV employees is around 95. CZV is an independent, privately owned company. As such CZV Inc is EPA exempt from GHG emission requirements and has requested an alternative standard for CARB GHG requirements.

General compliance statement
CZV Inc states that any element of design, system or emission control device installed on or incorporated in CZV's 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 CZV's 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 to public health or welfare except as specifically permitted by the standards described under section 202 of Clean Air Act.

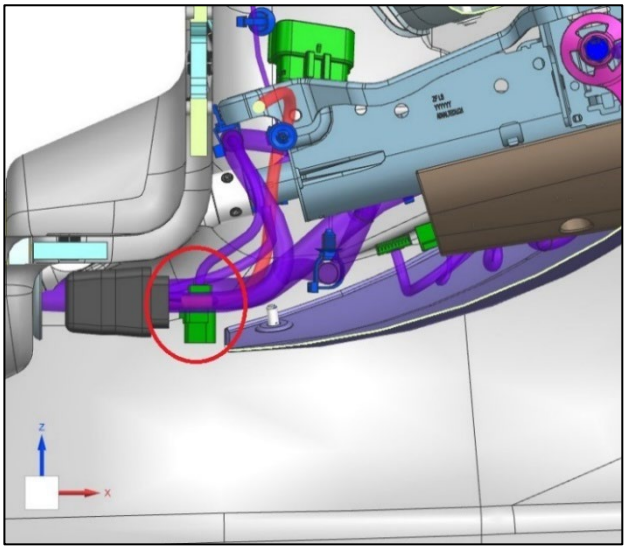
Based on CZV's good engineering judgement the emission control systems cause no increase in toxic or noxious emissions and create no unsafe conditions from their use or malfunction.

Section 86.1844(d)(9) – OBD System Description

The OBD system is designed and calibrated in concept to be fully compliant with the following regulations/specifications:

• Title 13, California Code of Regulations, Section 1968.2
• SAE J1979 – (R) E.E Diagnostic Test Modes
• ISO 15031-5 Road Vehicles – Communication between vehicle and external equipment for emissions related diagnostics – Part 5: Emissions –related diagnostic services
• ISO 15765-4 Road Vehicles – Diagnostics on Controller Area Networks (CAN) –Part 4: Requirement for emissions related systems. The Generic Scan Tool communication is realized according to SAE J1979, Modes $01 - $09 as appropriate.

The corresponding OBD diagnostic connector is designed and located in accordance with specification SAE J1962. Diagnostic Trouble Codes (P-Codes, U-Codes, etc.) are set according to SAE J2012.



OBD Application Cover Letter

Refer to CBI report for data within this section.

Section 86.1844(d)(10) - Description of flexible and Alternative-Fuel Vehicles

Czinger Vehicles 21C Hybrids are fueled by gasoline and electricity.

Section 86.1844(d)(11) – AECD Descriptions

Refer to CBI report for data within this section.

Section 86.1844(d)(12) – Description of Vehicles Covered by Certification and Test Parameters

This application covers the Czinger 21C, 21C Vmax and 21C Spyder.

All information is provided in the Verify generated CSI visible in section 7.

Durability group:	VCZVHHGNNCJP
Test group:	VCZVV02.9CJP
Evaporative family:	VCZVR0130AA1
Model Names:	21C, 21C VMax and 21C Spyder
Carline:	Two-seater
Vehicle classification:	Light Duty Vehicle / Passenger Car
Sales area:	EPA, CARB, & 177 states
Engine Code:	SK32
Fuel Used:	Single fuel – Gasoline
Basic Fuel Metering System:	Multiport injection
Number of valves per cylinder:	2 intake; 2 exhaust
Engine displacement:	2.9 L
Engine net power:	559kW (750 hp) @ 10,500 RPM
Engine net torque:	494 Nm @ 7,800 RPM
Idling speed:	1200 RPM
Intake air aspiration method:	2 turbochargers in parallel
EGR type:	N/A
Air pump type:	N/A
Transmission:	7 speed automated manual selectable
N/V Ratio:	41.8
SIL:	Not applicable
Tire size :	Front: 265/35/ZR20 Rear: 325/30/ZR21
Curb weight:	3635 lbs.
ETW:	3750 lbs.
RL@50mph:	24.1 hp
F_0	34.8 [lb]
F_1	1.03255 [lb/(mph)]
F_2	0.037608 [lb/(mph)^2]
Battery Type:	Rechargeable
Battery Pack Voltage:	806V
Battery Pack Energy Capacity:	4.2 kWh
Number of Drive Motors/Generators:	3
Motor/Generator Type:	3-Phase Radial Flux Permanent Magnet Synchronous Motor/Generator
Rated Continuous Horsepower for each motor:	MGU (1 pc): 150 kW Wheel motors (2 pcs): 200 kW each
Battery Pack Weight (dry):	77 kg
Battery Chemistry:	Lithium Nickel Cobalt Aluminum Oxide
ECS Description:	2EHTWC / 2HO2S / 2WR-HO2S / 2TC / 2CAC / SFI

Section 86.1844(d)(13) – Projected Sales

Refer to CBI report for data within this section.

Section 86.1844(d)(14) – Request Letter for COC and EO

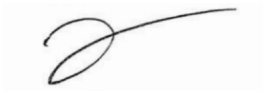
This Part 1 submission from CZV Inc (Czinger Vehicles) constitutes the application and the request for the issue of a Certificate of Conformity for the following Test Group:

Test Group	Standards	Sales Area
VCZVV02.9CJP	LEV-III ULEV50 Tier 3 BIN 50	California Federal

All vehicles within this test group comply with all applicable regulations contained in 40 CFR Part 85, 86., 600 and with the compliance statements detailed in Sections 8 & 14 of this submission. Based on CZVs good engineering judgement all the vehicles described in this application are designed to comply with the applicable intermediated and full useful life Tier 3 Bin 50 standards and evaporative emission standards.

CZV Inc requests that a 50 state Federal Certificate of Conformity (COC) and the California ARB Executive Order (EO) for the Test Group VCZVV02.9CJP be issued for this LDV test group. A copy of the Certification filing fee is given at the back of this application.

Yours sincerely,



Ewan Baldry
Chief Engineer
CZV, Inc

Section 86.1844(d)(16) - Leak free exhaust system

Czinger has conducted an engineering analysis of the complete exhaust system to ensure that the exhaust system has been designed (40CFR §86.1844-01(d)(16)):

(A) To facilitate leak-free assembly, installation and operation for the full useful life of the vehicle; and
(B) To facilitate that such repairs as might be necessary on a properly maintained and used vehicle can be performed in such a manner as to maintain leak-free operation, using tools commonly available in a motor vehicle dealership or independent repair shop for the full useful life of the vehicle.

The analysis covered the exhaust system and all related and attached components, from the engine block manifold gasket surface to a point sufficiently past the last catalyst and oxygen sensor in the system to assure that leaks beyond that point will not permit air to reach the oxygen sensor or catalyst under normal operating conditions.

The design does not require any special tools or procedures for service or replacement.

In addition, a complete leak detection test is performed on every production car as part of the pre-delivery inspection. Czinger has a 100% pass rate for this test.

The analysis performed in conjunction with the production conformity testing confirms that vehicles produced by Czinger fulfill the leak-free exhaust system requirements.

Statement of Compliance

Czinger states that any element of design, system, or emission control device installed on or incorporated in the Czinger 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 Czinger's 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 to public health or welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. Czinger further states that any element of design, system, or emission control device installed or incorporated in the 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 Czinger's information and belief. cause or contribute to an unreasonable risk to public safety. The term pollutant means:

a. Diesel particulates
b. Nickel
c. MMT combustion products
d. Ammonia
e. Sulfates
f. Hydrogen sulfide
g. Hydrogen cyanide
h. Ruthenium combustion products
i. Nitrosamines or any other pollutant which Czinger has identified which can reasonably be expected to be emitted from these vehicles.

AB&T Compliance Plan

FTP NMOG+NOX

CZV certifies EPA Tier 3 Bin 50 the following test group:

VCZVV02.9CJP (NMOG + NOx FEL = 0.051 g/mi)

CZV certifies CARB LEV-III ULEV 50 only the test group:

VCZVV02.9CJP (NMOG + NOx FEL = 0.051 g/mi)

Instead of the Federal fleet-average FTP standards for NMOG + NOX specified in § 86.1811-17 CZV, a small-volume manufacturers elects to meet alternate fleet-average standards of 0.051 g/mile for model years 2022 through 2027. According to 13 CCR § 1961.4 the fleet-average FTP standards for CZV, as small-volume manufacturer, for NMOG + NOX CZV is set to 0.051 g/mile for model year 2027.

SFTP NMOG+NOX

CZV will use, according to CFR § 86.1811-17, the SFTP stand-alone option specified in 13 CCR § 1961.2 (a)(7)(A)1 of the LEVIII program to demonstrate compliance with EPA's SFTP standards.

Cold NMHC

CZV vehicles are compliant with the requirements from the regulation with these pollutants and will submit ABT end of year report.

Evaporative

CZV vehicles are compliant with the requirements from the regulation with these pollutants and will submit ABT end of year report.

Vehicle Startup Procedure

Ignition modes

Sleep	Vehicle is in powered down state. Doors closed, no keyfob in range of the vehicle, no systems available.
Awake	Open a vehicle door and enter the cabin with a valid keyfob. Interior courtesy lights illuminate and some electrical functions can be used.
Accessory	Driver display welcome screen transitions to Street mode display screen. The electrical systems will perform self-checks and the warning alerts symbols will illuminate briefly in the driver display. Most electrical controls can now be operated.
Running	Brake pedal depressed while the START/STOP button is pressed, the vehicle can now be driven.

Changing ignition modes
To change the ignition mode from 'Awake' to 'Accessory', with a valid keyfob in the cabin, press the ENGINE START/STOP button on the right-hand driver switch pack (see page 27), without depressing the brake pedal.

To change the ignition mode from mode 'Accessory' back to 'Awake', press the START/STOP button again without depressing the brake pedal.

STARTING AND DRIVING

Vehicle starting

- Ensure the keyfob is in the cabin area.
- Depress the brake pedal.
- Press and release the START/STOP button.

- The driver display will change from the Czinger splash screen to the Street mode screen.
- Ready is displayed in the driver display screen, indicating that the vehicle is ready to drive.

⚠ **WARNING:** Do not start the vehicle if the outside temperature is less than 14° Fahrenheit (10° Centigrade).

⚠ **WARNING:** To maintain vehicle control, ensure that the driving seat, steering wheel and door mirrors are adjusted correctly.

⚠ **WARNING:** If necessary, adjust the driving seat to ensure that the brake pedal can be fully depressed.

⚠ **WARNING:** Ensure that you and any passenger in the vehicle fastens their seatbelt before driving.

⚠ **WARNING:** Never remove the keyfob from the vehicle or press the START/STOP button when the vehicle is moving. This could stop the engine and cause an accident.

NOTE: The vehicle is driven by the electric front axle only in Street mode or when reverse gear is selected, but noise of the engine either turning over or running will be heard. see page 95.

Gear selection
In Street mode, either forward D – Drive or R - reverse gears can be selected, see pages 96 and 98.

Stopping

- Press and release the START/STOP button to stop the vehicle propulsion system.*
- The vehicle transmission will select N - neutral and parking brake is automatically applied.

*Pressing the start/stop button will power off the electric front axle and stop the engine.

⚠ **WARNING:** Always take the keyfob out from the vehicle when exiting and ensure the vehicle is in 'Awake' ignition mode (especially if a child is left in the vehicle).

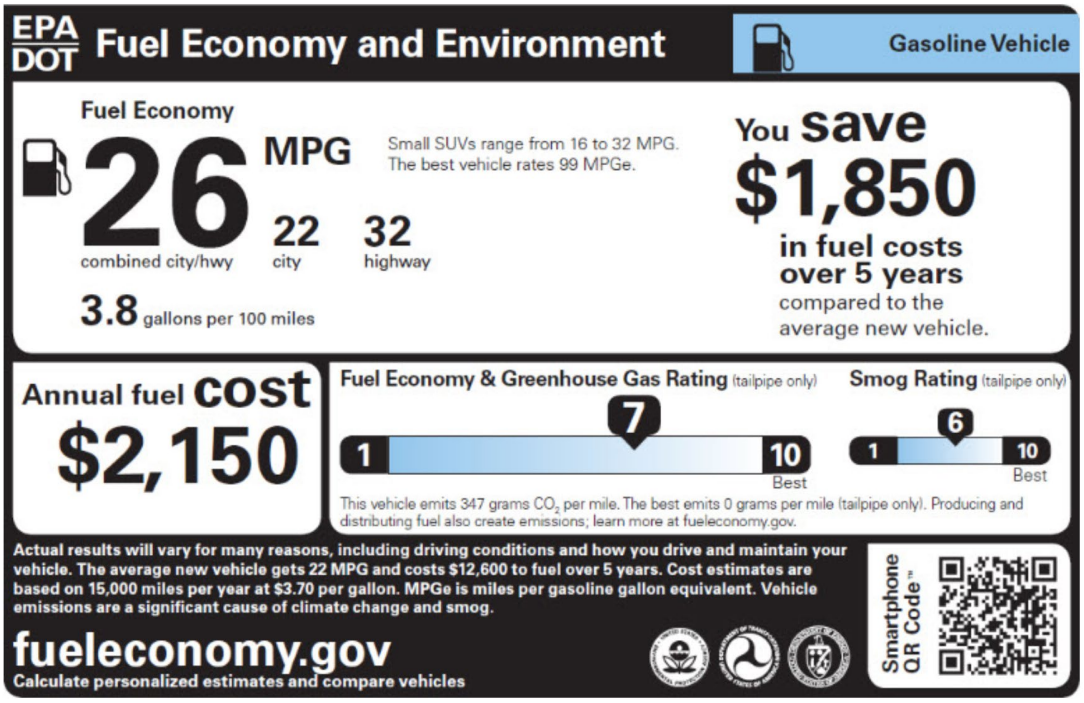
Shift schedules:

Not applicable. Emission testing in automatic mode as agreed with EPA/ARB

Example Monroney Fuel Economy Label

The Environmental Performance label example will be an integrated part of the Monroney label as per CALIFORNIA ENVIRONMENTAL PERFORMANCE LABEL SPECIFICATIONS FOR 2009 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES. Adopted: May 2, 2008, Amended: September 2, 2015.

CZV, Inc will generate fuel economy data and publish in the format shown below.



VECI Label

CZV, Inc gives the VECI label to be applied as shown below.

CZV complies with the VECI security requirements by using tear propagators, represented by the pink lines in the image below, that make it impossible to remove the VECI in one piece.

Selection for Production Vehicle Evaluation (PVE) Testing

CZV testing will be conducted following CARB OBD procedure according to Title 13 CCR § 1968.2 (j)(2) requirements.

IUMPR data, 13 CCR § 1968.2 (j)(3), will be collected on vehicles when they return to the dealership for service/routine maintenance. Data will be provided as it becomes available according to section 1968.2(j)(3.4).

Catalyst

See CBI report version

California ARB Information

Production Vehicles versus Test Vehicles

CZV states that the Emission Control 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, under hood temperatures, steam cleaning, and paints or paint solvents.

Drivability Statement

Vehicles, for which certification is requested, have drivability and performance characteristics which satisfy our customary drivability and performance requirements for vehicles sold in the United States. ASM / IM Compliance Statement Certification Compliance with the Accelerated Simulation Mode (ASM) Loaded Mode Inspection Maintenance (I/M) Standards Based on engineering evaluation and in accordance with MAC #99-05, CZV hereby states that the vehicles included in this Test Group comply with the applicable ASM I/M standards. According to 40 CFR §86.1829-01(b)(4)(ii) we waive the data submittal on the basis of this statement.

Assembly Line NMOG and HCHO factors

The following factors will be used to show compliance with the NMOG and HCHO assembly line emissions standards if applicable.

NMOG/NMHC: 1.10

HCHO/NMHC: 0.03

AB&T Option Selection

According to CARB regulation, CZV selects Option 1 for AB&T reporting.

Adjustable Parameters/Tamper Resistance Statement

No calibration parameters are adjustable and therefore no tamper resistance measures are required.

Warranty Statement

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

A sample of the California warranty statement follows below:

"California Emissions Control System Warranties"*

Your Warranty Rights and Obligations

The California Air Resources Board and CZV is pleased to explain the emission control system warranty on your model year 2027 CZV vehicle. In California new motor vehicles must be designed, built and equipped to meet the State's stringent anti-smog standards. CZV must warrant the emission control system on your vehicle for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the fuel-injection system, the ignition system, catalytic converter, and engine computer. Also included may be horses, belts, connectors, and other emission-related assemblies. Where a warrantable condition exists, CZV will repair your vehicle at no cost to you including parts and labor."

Manufacturer's warranty coverage:

For 3 years or 50,000 miles, whichever occurs first:

1) If your vehicle fails a Smog Check inspection, all necessary repairs and adjustments will be made by CZV to ensure that your vehicle passes the inspection. This is your emission control system PERFORMANCE WARRANTY.

2) If any emission-related part on your vehicle is defective, the part will be repaired or replaced by CZV. This is your short-term emission control system DEFECTS WARRANTY.

For 7 years or 70,000 miles, whichever occurs first:

1) If an emission-related part listed in this booklet specially noted with coverage for 7 years or 70,000

miles is defective, the part will be repaired or replaced by CZV. This is your long-term emission control system DEFECTS WARRANTY.

Owner's Warranty Responsibilities:

As the vehicle owner, you are responsible for the performance of the required maintenance listed in your owner's manual. CZV recommends that you retain all receipts covering maintenance on your vehicle, but CZV cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your vehicle to the dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

As the vehicle owner, you should also be aware that CZV may deny your warranty coverage if your vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact the CZV Customer Assistance Center at warranty@czinger.com or the California Air Resources Board at 4001 Iowa Ave. Riverside, CA 92507.

Warranty Start Date for the three (3) year/50,000 mile and seven (7) year/70,000 mile warranty periods begin on the date the new vehicle is delivered to the original retail purchaser.

*The California Emissions Control System Limited Warranty applies to all 2024 U.S. specification CZV vehicles registered in California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, Colorado or Washington. According to Federal Regulations, your vehicle may also be eligible for additional warranty coverage under the Federal Emissions Warranty.

Model Year 2027 - Emission Parts List

California requires minimum emissions warranty coverage for the first 3 years or 50,000 miles of a vehicle use, with coverage for the first 7 years or 70,000 miles for certain “high cost” emission related parts, as determined by a California government specified formula.

Air/Fuel Metering System
Air/fuel ratio feedback control system
Electronic fuel injection system components
Airflow sensor
Engine control module (8/80)
Throttle body
Air Induction System
Intake manifold and intake air surge tank
Catalyst System
Catalytic converter and protector (8/80)
Constricted fuel filler neck
Exhaust manifold
Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)
Evaporative Control System
Charcoal canister
Diaphragm valve
Fuel filler cap
Fuel tank
Ignition Systems
Ignition coil and ignitor

Ignition wires
Spark plugs†
Positive Crankcase Ventilation (PCV) System
Oil filler cap
PCV valve or orifice
Other Parts Used in Above Systems
Data link connector
Hoses, clamps, fittings, tubing and mounting hardware
Malfunction indicator light and bulb
Sealing gaskets and devices
Sensors, solenoids, switches and valves

Fill Pipe Specifications

CZV states that the vehicle meets the requirements of CCR Title 13 Section 2235 - Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks.

The fill pipes installed on our models will be in compliance with all of the requirements of Air Resources Board's "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

The fill pipe access zones for the models covered by this application will be in compliance with the requirements specified by the Air Resources Board's "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012 and will not be obstructed in any manner by bumpers, body parts, body trims or accessories that are either factory or dealer installed. 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 (refer to ISO-13331- 1995(E) as adopted June 1, 1995).

CARB APPLICATION FORM FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer **Model Year**

Terms 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 May 31, 2019 (CARB Fill Pipe Spec.) (Refer to ISO-13331-1995[E] as adopted June 1,1995)

	General Specification	ARB Specification	ISO-13331 Reference or Noted Otherwise	Manufacturer Specification[1]
1	Angle α in degrees	$-10° < \alpha < 20°$	2.8 & 3.4/Fig 2a & 3a	1.2°
2	Spill Prevention in degrees (angle btwn. centerline of test spout in resting position and the horiz. plane)	30° (MIN)	3.5	90°
3	Test nozzle penetration of restrictor	2.25 cm or 22.5 mm(MIN)	3.4	63.73mm
4	Angle β in degrees	none	2.9/Fig 2b & 3b	-0.68°
	Fill Pipe Specification			
1	Fill Pipe face surface in TIR	0.025 cm or 0.25 mm(MAX)	3.1/Fig 1	0.1mm
2a	Fill Pipe face outside diameter: unless meets criteria in 2b. Below	5.75 cm or 57.5 mm(MAX)	3.1/Fig 1	
		5.20 cm or 52.0 mm(MIN)	3.1/Fig 1	
2b	Fill Pipe face outside diameter: criteria: new fill pipe head design starting MY 2024	5.79 cm or 57.9 mm(MAX)	3.1/Fig 1	57.5mm
		5.20 cm or 52.0 mm(MIN)	CARB Fill Pipe Spec.	
3	Internal locking lip in degrees of the inside circumference	100° (MIN)	3.2/Fig 2 and 3	360°
	degrees extending each side of ref. plane	35° (MIN) each side LS [2]	3.2/Fig 2 and 3	180°
		RS [2]	3.2/Fig 2 and 3	180°
4	Height of lip measured from fill pipe inside wall; or	0.25 cm or 2.5 mm(MIN)	3.2	2.67mm
	height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 cm.	0.85 cm or 8.5 mm(MIN)	3.2	9.72mm
5a	Depth of lip (D) in centimeters: unless meets criteria in 5b. Below	0.4 < D < 1.3	3.2	
5b	Depth of lip (D) in centimeters: criteria: new fill pipe head design starting MY 2024	0.4 < D < 1.1	CARB Fill Pipe Spec.	0.67cm
	Offset			
	Offset A	none	3.3.1/Fig 5 shown as "F"	N/A on centre
	Offset B	none	3.3.1/Fig 5 shown as "G"	N/A on centre
6a	Fill Pipe Face Clearance (Axial): unless meets criteria in 7b. Below	0.25 cm or 2.5 mm (MIN)	Fig 5 shown as "2.5"	
6b	Fill Pipe Face Clearance (Axial): criteria: new fill pipe head design starting MY 2024	40 degrees out to 12 mm depth	CARB Fill Pipe Spec.	2.67mm
7a	Fill Pipe Face Clearance (Radial): unless meets criteria in 7b. below	≥ 40 mm	Fig 5 shown as "R40"	Yes / No
7b	Fill Pipe Face Clearance (Radial): criteria: new fill pipe head design starting MY 2024	≥ 43 mm	CARB Fill Pipe Spec.	Yes / No
8	Fill Pipe Face Inside Diameter	49.8 mm(MAX)	Fig 1	46.8mm
9	Bench Leak Test: Phase in schedule in CARB Fill Pipe Spec.	2.5 L/Min (MAX) at 500 Pa Vacuum		Passed
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)[3]			I

14	Type (Threaded or Bayonet)	Fig 1	NA/ (Capless)
15	Usage of Design (Models or Evaporative Family(s))		RLTXR0130JHB
16	Total vehicle model year sales		1701

[1] dimension should include adverse tolerance condition

[2] LS = Left side of reference plane, RS = Right side of reference plane

[3] ORVR Design : Integrated (I)/Non-Integrated(NI)/Non-Integrated Refueling Canister Only (NIRCO)/Non-ORVR(NO)

CZV has conducted tests according to CCR Title 13 Section 2235 to demonstrate compliance with:

FILL RATE, SPILLAGE & SPITBACK ACCORDING TO SECTION VII OF SPECIFICATIONS FOR FILL PIPES AND OPENINGS OF 2015 AND SUBSEQUENT MODEL MOTOR VEHICLE FUEL TANKS.

BENCH LEAK TEST ACCORDING TO SECTION VI OF SPECIFICATIONS FOR FILL PIPES AND OPENINGS OF 2015 AND SUBSEQUENT MODEL MOTOR VEHICLE FUEL TANKS.

Average flowrate leak = 0.068 lpm.

Test and Service Accumulation Fuel

All fuels used for emission certification testing or service accumulation comply with applicable regulation.

Test Facility and Equipment

The facility and equipment to be used for mileage accumulation and emission testing complies with all applicable regulations.

Lubricants

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

Blanket Approval List

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

Continuity of Emissions in the temperature range of 20 to 86 °F

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

Compliance with Applicable Emissions Standards

CZV has tested the vehicles, or caused the vehicles to be tested, according to the prescribed (or approved) test procedures and on the basis of such tests CZV has determined that the test vehicles comply with all applicable emission standards**.**

Emission Control System

CZV states that the emission control systems cause no increase in toxic or noxious emissions and creates no unsafe conditions from its use or malfunction.

Diagnostic Procedures

In the event that an unscheduled maintenance on one of the certification test vehicles might become necessary, CZV uses the on-board and service diagnostic system.

I/M Test Procedure Statement

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

High Altitude Requirements

The computer-controlled multipoint/sequential port fuel injection system meters fuel based on air mass flow and is self-compensating. Therefore, the test group complies with the high-altitude requirements (ref. Mail Out 86-23 & 40 CFR 86.1829.15).

CZV Statements

The test and production vehicles do not have a defeat device.

All AECDs have been declared and described in the application for certification.

The test and production vehicles do not have alternate maps.

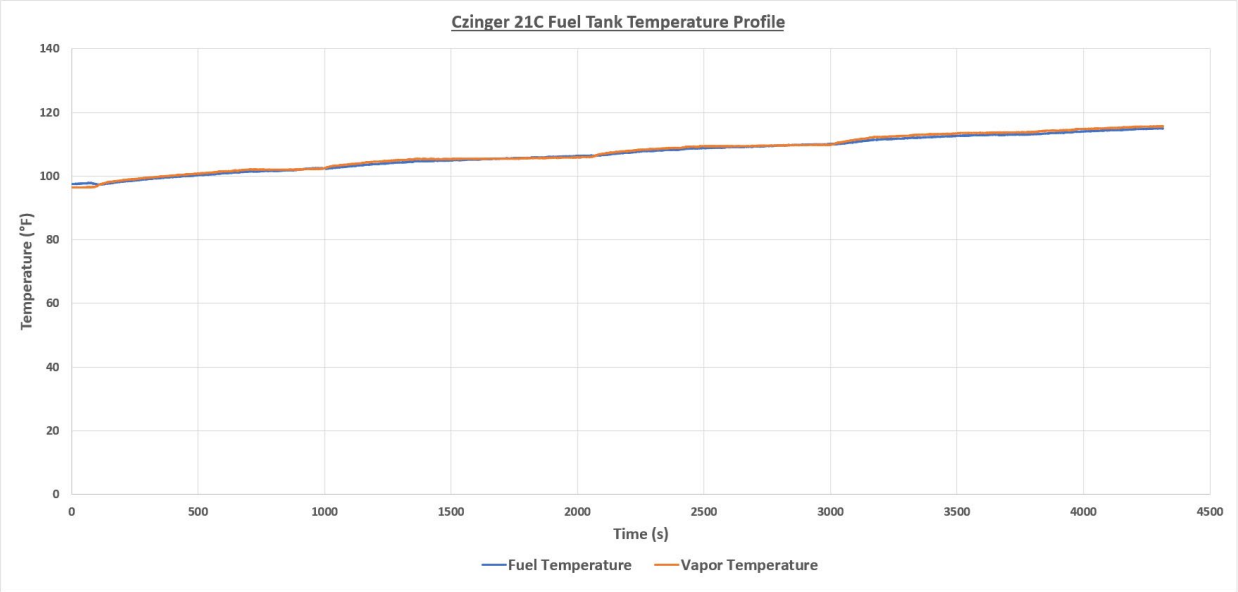
The transmission does not behave or perform differently while on road versus on dynamometer.

MY27 Anticipated Section 177 Sales

Refer to CBI report for data within this section.

Running Loss Test FTTP

The Evaporative Family's Fuel Tank Temperature Profile (FTTP) is determined according to 40 CFR § 86.094-14(b)(1) as approved by ARB.



EPA Application Fee Payment

F fees@epa.gov
To: Craig Knight

Reply Reply all Forward

Fri 4/17/2026 5:48 AM

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To the representative for CZV Inc:

Your certification Fee Filing Form(s) submitted for the following family or test group(s) and the associated financial documentation for your payment of $32317.00 were received on 04/17/2026.

- VCZVV02.9CJP

This message indicates only that EPA has received record of your payment and form(s) for the above certification fee. It does not constitute the granting of a Certificate of Conformity by EPA or convey any information about the status of your certification application for the subject family or test group(s).

Please do not respond to this email. If you have any questions regarding certification of the family or test group(s), please contact your EPA Certification Representative; for questions on fees, contact Fees@epa.gov.