

Certification Summary Information Report

Test Group		MFMXV00.0B4A			Evaporative/Refueling Family			--		
Models Covered by this Certificate										
Carline Manufacturer	Division	Carline	Certification Region Code(s)	Drive System	Trans - Type	- # of Gears	Trans - Lockup			
Ford Motor Company	1 - Ford	22 - MUSTANG MACH-E AWD EXTENDED	Federal	All Wheel Drive	Automatic	1	Yes			
Ford Motor Company	1 - Ford	22 - MUSTANG MACH-E AWD EXTENDED	California + CAA Section 177 states	All Wheel Drive	Automatic	1	Yes			
Engine Description										
Hybrid Type			--	Hybrid Description			--			
Engine Type			--	Mfr Engine Description			--			
Engine Block Arrangement			--	Mfr Engine Block Arrangement Description			--			
Camless Valvetrain Indicator			--	Oil Viscosity/Classification			--			
Number of Cylinders/Rotors			--	Mechanically Variable Compression Ratio Indicator			--			
After Treatment Device(s) (ATD)										
Mfr After Treatment Device (ATD) Comments			--							
Direct Ozone Reduction (DOR) Device			--							
Mfr Emission Control Device Comments			--							
Official Test Numbers										
Test Group Fuel	FTP	US06	SC03	Cold CO	Highway	EPA City Litmus Value	EPA City Litmus Threshold	EPA Highway Litmus Value	EPA Highway Litmus Threshold	CREE Weighting Factor
Electricity	--	--	--	--	--	--	--	--	--	--
Official Charge Depleting Test Numbers										
Test Group Fuel		UDDS			Highway					
Electricity		MFMX10066219			MFMX10066220					

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Hybrid Electric Vehicle And Fuel Cell Information			
Rechargeable Energy Storage System	Battery(s)	Rechargeable Energy Storage System, if Other	--
Battery Type	Lithium Ion	Number of Battery Packs	1
Total Voltage of Battery Packs	404	Battery Energy Capacity	288
Battery Specific Energy	166	Battery Charger Type	On-Board
Number of Capacitors	--	Capacitor Rating (In Farads)	--
Mfr Capacitor Comments	--		
Hydraulic System Description	--		
Regenerative Braking Type	Electrical Regen Brake		
Regenerative Braking Source	Both	Driver Controlled Regenerative Braking	No
Mfr Regenerative Braking Description	--		
Drive Motor(s)/Generator(s)	2		
Motor/Generator Type 1	AC permanent magnet synchronou	Rated Motor/Generator Power	49
Motor/Generator Type 2	AC permanent magnet synchronou	Rated Motor/Generator Power	209
Mfr Fuel Cell Description	--		
Fuel Cell On-Board H2 Storage Capacity (kg)	--	Usable H2 Fill Capacity (kg)	--
Mfr Hybrid Electric/ Electric Vehicle Comments	This is a pure BEV vehicle. The Drive Motors are both AC permanent magnet synchronous machines.		

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Emission Data Vehicle Information											
Vehicle ID / Configuration	MGW1-0.0-J-078 / 0		Manufacturer Vehicle Configuration Number	0							
Original Test Group Name	MFMXV00.0B4A		Original Evaporative/Refueling Family	--							
Original Test Vehicle Model Year	2021										
Vehicle Model											
Represented Test Vehicle Make	Ford		Represented Test Vehicle Model	Mach-E							
Leak Family Details											
Leak Family Identifier	--		Leak Family Name	--							
Drive Sources and Fuel System Details											
<table border="1"> <thead> <tr> <th>Drive Source and Fuel#</th> <th>Drive Source</th> <th>Fuel</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Electric Motor</td> <td>Electricity</td> </tr> </tbody> </table>						Drive Source and Fuel#	Drive Source	Fuel	1	Electric Motor	Electricity
Drive Source and Fuel#	Drive Source	Fuel									
1	Electric Motor	Electricity									
Hybrid Indicator	No		Multiple Fuel Combustion	--							
Multiple Fuel Storage	--		Rechargeable Energy Storage System Indicator	Yes							
Fuel Cell Indicator	No		Rechargeable Energy Storage System, if 'Other'	--							
Rechargeable Energy Storage System	Battery(s)										
Off-board charge Capable Indicator	Yes		Odometer Correction Factor	1.03							
Odometer Correction -- Initial	0										
Odometer Correction Sign	+ = System Miles is equal to (Test odometer reading * Correction factor) + Initial system miles										
Odometer Correction Units	Miles										
Engine Code	MCGWEJNC08		Rated Horsepower	346							
Displacement (liters)	0.001		Air Aspiration Method, if 'Other'								
Air Aspiration Method	Naturally Aspirated		Air Aspiration Device Configuration	--							
Number of Air Aspiration Devices	0		Drive Mode While Testing	All Wheel Drive							
Charge Air Cooler Type	--		Aged Emission Components	4,000 (mi)							
Shift Indicator Light Usage	Not equipped		Equivalent Test Weight (pounds)	5250							
Curb Weight (lbs)	4838		N/V Ratio	0							
GVWR (lbs)	5800										
Axle Ratio	9.05		# of Transmission Gears	1							
Transmission Type	BEV		Creeper Gear	No							
Transmission Lockup	No										
Dynamometer Coefficients:											
Target Coefficients			Set Coefficients								
Coefficient Category	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	A (lbf)	B (lbf/mph)	C (lbf/mph**2)	EPA Calculated Total Road Load Horse Power for City/Highway/Evap Coefficients				
City/Highway/Evap	46.77	0.2604	0.02086	4.87	-0.0375	0.02126	14.9				
Emission Control Device Comments											
ZEV vehicle, T3B0/ZEV											

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Manufacturer Test Vehicle Comments	2021 MY Mach-E BEV 4P AWD		
Test #	MFMX10066219	Test Procedure	81 - Charge Depleting UDDS
Exhaust Test # for this Evap Test	--	Test Fuel Type	62 - Electricity
Test Date	07/29/2020	Fuel	Electricity
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Assigned
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2903	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	101.2 (1 - 88/101.2)*100 = 13% loss
Charge Depleting Range (Calculated miles)	371.5	Charge Depleting Range (Actual miles)	371.5 87% efficiency
All Electric Range Unadjusted (miles)	--	Derived 5-Cycle Coefficient Model Year	--
Equivalent All Electric Range (miles)	371.5		
Number of Charge Depleting Bags/Phases Conducted	1	Transition Bag/Phase Number	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon-Related Exhaust Emissions	0
2	Drive Trace Absolute Speed Change Rating	0.5
3	Drive Trace Energy Economy Rating	-0.2
4	Drive Trace Inertia Work Ratio Rating	0.62
5	Manufacturer Fuel Economy	123.6

Manufacturer Test Comments --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

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Test Group	MFMXV00.0B4A	Evaporative/Refueling Family	--
Test #	MFMX10066220	Test Procedure	84 - Charge Depleting Highway
Exhaust Test # for this Evap Test	--	Test Fuel Type	62 - Electricity
Test Date	07/29/2020	Fuel	Electricity
Fuel Batch ID	--	Fuel Calibration Number	--
Vehicle Class	LDV/Passenger Car	DF Type	Mfr. Assigned
Verify Test Lab ID	APTL		
E10 Evaporative Test Measurement Method	--		
Test Start Odometer Reading	2903	Odometer Units	M
4WD Test Dyno	Yes	Diesel Adjustment Factor Usage	--
State of Charge Delta	Yes		
Drive Cycle Speed Tolerance Criteria	Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)	Road Speed Fan Usage	Yes

PHEV/EV Charge Depleting Test Information

Recharge Event Voltage	240	Recharge Event Energy (kiloWatt-hours)	101.2 (1 - 88/101.2)*100 = 13% loss
Charge Depleting Range (Calculated miles)	338.9	Charge Depleting Range (Actual miles)	338.9 87% efficiency
All Electric Range Unadjusted (miles)	--	Derived 5-Cycle Coefficient Model Year	--
Equivalent All Electric Range (miles)	338.9		
Number of Charge Depleting Bags/Phases Conducted	1	Transition Bag/Phase Number	--

Charge Depleting Bag/Phase

Charge Depleting Bag/Phase #	Test Result/Emission Name	Unrounded Test Result
1	Carbon-Related Exhaust Emissions	0
2	Drive Trace Absolute Speed Change Rating	1.81
3	Drive Trace Energy Economy Rating	0.43
4	Drive Trace Inertia Work Ratio Rating	2.41
5	Manufacturer Fuel Economy	112.8

Manufacturer Test Comments --

Certification Region	Useful Life	Standard Level	Emission Name	Rounded Result	RAF	NMOG/NM HC Ratio	Diesel Adjustment Factor	Add DF	Mult DF	Certification Level	Standard	Pass/Fail
Fed	150,000 miles	Federal Tier 3 Bin 0	CREE	0	--	--	--	0	--	0	--	--
CA	150,000 miles	California ZEV	CREE	0	--	--	--	0	--	0	--	--

Fuel Properties

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Test Group		MFMXV00.0B4A			Evaporative/Refueling Family			--		
Consolidated List of Standards										
Exhaust Standards										
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			Standard Level			California ZEV		
Fuel		Electricity			Test Procedure			Charge Depleting Highway		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CREE	--	--	--	--	--	--	0	0	
Exhaust Standards										
Cert Region		California + CAA Section 177 states			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			Standard Level			California ZEV		
Fuel		Electricity			Test Procedure			Charge Depleting UDDS		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CREE	--	--	--	--	--	--	0	0	
Exhaust Standards										
Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 0		
Fuel		Electricity			Test Procedure			Charge Depleting UDDS		
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std	
150,000 miles	CREE	--	--	--	--	--	--	0	0	
Exhaust Standards										
Cert Region		Federal			Cert/In-Use Code			Both		
Vehicle Class		LDV/Passenger Car			Standard Level			Federal Tier 3 Bin 0		
Fuel		Electricity			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	
150,000 miles	CO	--	--	--	--	--	--	0	0	

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Cert Region	Federal		Cert/In-Use Code			Both			
Vehicle Class	LDV/Passenger Car		Standard Level			Federal Tier 3 Bin 0			
Fuel	Electricity		Test Procedure			Charge Depleting Highway			
Useful Life	Emission Name	Rounded Result	RAF	NMOG / NMHC	Upward Diesel Adjustment Factor	Downward Diesel Adjustment Factor	Mult DF	Add DF	Std
150,000 miles	CREE	--	--	--	--	--	--	0	0
Cert Region	California + CAA Section 177 states		Cert/In-Use Code			Both			
Vehicle Class	LDV/Passenger Car		Standard Level			California ZEV			
Fuel	Electricity		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
150,000 miles	CO	--	--	--	--	--	--	0	0

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Test Group	MFMXV00.0B4A	Evaporative/Refueling Family	--
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	METHANOL	CH3OH - Methanol
CO	Carbon Monoxide	N2O	Nitrous Oxide
CO2	Carbon dioxide	SPITBACK	Spitback Hydrocarbon in grams
CREE	Carbon-Related Exhaust Emissions	AMP-HRS	Integrated Amp-hours
OPT-CREE	Optional Carbon-Related Exhaust Emissions	START-SOC	System Start State of Charge Watt-hours
NOX	Nitrogen Oxide	END-SOC	System End State of Charge Watt-hours
PM	Particulate Matter	ACT-DISTANCE	Actual Distance Driven (miles)
PM-COMP	SFTP Composite Particulate Matter	AS-VOLT	Average System Voltage
HC-NM	Non-methane Hydrocarbon	CO2 BAG 1	Bag 1 Carbon Dioxide
OMHCE	Organic material Hydrocarbon Equivalent	CO2 BAG 2	Bag 2 Carbon Dioxide
OMNMHCE	Organic material non-methane HC equivalent	CO2 BAG 3	Bag 3 Carbon Dioxide
NMOG	Non-methane organic gases	CO2 BAG 4	Bag 4 Carbon Dioxide
HCHO	Formaldehyde	NMOG+NOX	Non-methane organic gases plus Nitrogen Oxides
H3C2HO	Acetaldehyde	NMOG+NOX-COMP	SFTP Composite Non-methane Organic Gases + Nitrogen Oxides
HC-NM+NOX	SFTP Non-methane Hydrocarbon + Nitrogen Oxides for US06 or SC03	DT-IWRR	Drive Trace Inertia Work Ratio Rating
HC-NM+NOX-COMP	SFTP Composite Non-methane Hydrocarbon + Nitrogen Oxides	DT-ASCR	Drive Trace Absolute Speed Change Rating
CO-COMP	SFTP Composite Carbon Monoxide	DT-EER	Drive Trace Energy Economy Rating
ETHANOL	C2H5OH - Ethanol	COMB-CREE	Combined Carbon-Related Exhaust Emissions
FE BAG 1	Bag 1 Fuel Economy	COMB-OPT-CREE	Combined Optional Carbon-Related Exhaust Emissions
FE BAG 2	Bag 2 Fuel Economy	HC-TOTAL-EQUIV	Total Hydrocarbon equivalent - Evap only
FE BAG 3	Bag 3 Fuel Economy	METHANE-COMB	Combined CH4 for HD 2b/3 vehicles only
FE BAG 4	Bag 4 Fuel Economy	N2O-COMB	Combined Nitrous Oxide for HD 2b/3 vehicles only
MFR FE	Manufacturer Fuel Economy	LEAK-DIA	Effective Leak Diameter (inches)
HC	Hydrocarbon for Running Loss and ORVR	LEAK-GAS CAP	Gas Cap Leakage (cc/min)
METHANE	CH4 - Methane	CO2-COMB	Combined Carbon Dioxide for HD 2b/3 Vehicles Only
Certification Region			
CA	California + CAA Section 177 states	FA	Federal
Exhaust Emission Standard Level			
B1	Federal Tier 2 Bin 1	L3ULEV340	California LEV-III ULEV340
B2	Federal Tier 2 Bin 2	L3ULEV250	California LEV-III ULEV250
B3	Federal Tier 2 Bin 3	L3ULEV200	California LEV-III ULEV200
B4	Federal Tier 2 Bin 4	L3SULEV170	California LEV-III SULEV170
B5	Federal Tier 2 Bin 5	L3SULEV150	California LEV-III SULEV150

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B6	Federal Tier 2 Bin 6	L3LEV630	California LEV-III LEV630	
B7	Federal Tier 2 Bin 7	L3ULEV570	California LEV-III ULEV570	
B8	Federal Tier 2 Bin 8	L3ULEV400	California LEV-III ULEV400	
B9	Federal Tier 2 Bin 9	L3ULEV270	California LEV-III ULEV270	
B10	Federal Tier 2 Bin 10	L3SULEV230	California LEV-III SULEV230	
B11	Federal Tier 2 Bin 11	L3SULEV200	California LEV-III SULEV200	
HDV1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000)	T3B160	Federal Tier 3 Bin 160	
HDV2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000)	T3B125	Federal Tier 3 Bin 125	
L2	California LEV-II LEV	T3B110	Federal Tier 3 Transitional Bin 110	
L2OP	California LEV-II LEV Optional	T3B85	Federal Tier 3 Transitional Bin 85	
U2	California LEV-II ULEV	T3SULEV30	Federal Tier 3 Transitional LEV-II SULEV30 Carryover	
S2	California LEV-II SULEV	T3B70	Federal Tier 3 Bin 70	
ZEV	California ZEV	T3B50	Federal Tier 3 Bin 50	
OT	Other	T3B30	Federal Tier 3 Bin 30	
T1	Federal Tier 1	T3B20	Federal Tier 3 Bin 20	
PZEV	California PZEV	T3B0	Federal Tier 3 Bin 0	
L2LEV160	California LEV-II LEV160	HDV2B395	Federal Tier 3 HD Class 2b Transitional Bin 395	
L2ULEV125	California LEV-II ULEV125	HDV2B340	Federal Tier 3 HD Class 2b Transitional Bin 340	
L2SULEV30	California LEV-II SULEV30	HDV2B250	Federal Tier 3 HD Class 2b Bin 250	
L2LEV395	California LEV-II LEV395	HDV2B200	Federal Tier 3 HD Class 2b Bin 200	
L2ULEV340	California LEV-II ULEV340	HDV2B170	Federal Tier 3 HD Class 2b Bin 170	
L2LEV630	California LEV-II LEV630	HDV2B150	Federal Tier 3 HD Class 2b Bin 150	
L2ULEV570	California LEV-II ULEV570	HDV2B0	Federal Tier 3 HD Class 2b Bin 0	
L3LEV160	California LEV-III LEV160	HDV3B630	Federal Tier 3 HD Class 3 Transitional Bin 630	
L3ULEV125	California LEV-III ULEV125	HDV3B570	Federal Tier 3 HD Class 3 Transitional Bin 570	
L3ULEV70	California LEV-III ULEV70	HDV3B400	Federal Tier 3 HD Class 3 Bin 400	
L3ULEV50	California LEV-III ULEV50	HDV3B270	Federal Tier 3 HD Class 3 Bin 270	
L3SULEV30	California LEV-III SULEV30	HDV3B230	Federal Tier 3 HD Class 3 Bin 230	
L3SULEV20	California LEV-III SULEV20	HDV3B200	Federal Tier 3 HD Class 3 Bin 200	
L3LEV395	California LEV-III LEV395	HDV3B0	Federal Tier 3 HD Class 3 Bin 0	
Transmission Type Code				
AMS	Automated Manual- Selectable (e.g. Automated Manual with paddles)	M	Manual	
A	Automatic	OT	Other	
AM	Automated Manual	SA	Semi-Automatic	
CVT	Continuously Variable	SCV	Selectable Continuously Variable (e.g. CVT with paddles)	
Drive System Code				
4	4-Wheel Drive	P	Part-time 4-Wheel Drive	
F	2-Wheel Drive, Front	A	All Wheel Drive	
R	2-Wheel Drive, Rear			

Certification Summary Information Report

Test Group	MFMXV00.0B4A	Evaporative/Refueling Family	--
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