



VOLVO CAR CORPORATION

Executive Order: A-018-0220
 New Passenger Cars, Light-Duty Trucks and
 Medium-Duty Vehicles
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Pursuant to the authority vested in California Air Resources Board by Health and Safety Code (HSC), Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-19-095;

IT IS ORDERED AND RESOLVED: The following vehicles produced by the manufacturer are certified as plug-in hybrid electric vehicles pursuant to Title 13, California Code of Regulations (13 CCR) Sections 1961 or 1961.2, 1962.2, 1976, 1978 and the incorporated test procedures. Production vehicles shall be in all material respects the same as those for which certification is granted.

TEST GROUP INFORMATION						
MODEL YEAR	TEST GROUP	VEHICLE CLASS(ES)		FUEL CATEGORY	FUEL TYPE	
2020	LVVXJ02.0P30	LDT2, LDT4, PC		PLUG-IN HYBRID ELECTRIC VEHICLE	GASOLINE	
USEFUL LIFE (miles)		VEHICLE EMISSION CATEGORY			INTERIM / INTERMEDIATE IN-USE STD	
EXH/ORVR	EVAP	FTP	SFTP	FTP	SFTP	
150000	150000	LEV3 SULEV30	LEV 3 COMPOSITE	*	*	
SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS			OBD STATUS		ENGINE DISPLACEMENT (L)	
1	TWC, WR-HO2S, 2HO2S, DFI, TC, SC, CAC		FULL	*	2.0	
*	*		PARTIAL	ALL MODELS		
*	*		PARTIAL WITH FINES	*		
EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION						
EVAP / ORVR FAMILY		EVAPORATIVE STD CATEGORY		EVAP EMISSION STD VEHICLE CLASS		SPECIAL FEATURES
LVVXR0142EP2		LEV 3 OPTION2		PC		*
EMISSION CREDIT INFORMATION						
ALLOWANCE FOR TEST GROUP		NMOG+NOX FLEET AVE. CREDIT FOR EXTENDED WARRANTY		NMOG CREDIT FOR NON-PZEV ZERO-EVAP		OPTIONAL EXH. STD FOR WORK TRUCKS
TZEV						
ALL MODELS		N		N		N
NMOG AND FLEET AVERAGE INFORMATION						
NMOG RAF	CH4 RAF	FTP NMOG/NMHC RATIO	HCHO/NMHC RATIO	NMOG+NOX FLEET STD PC+LDT (0-3750 LVW) (g/mi)	NMOG+NOX FLEET STD LDT (3751 LVW-8500 GVWR) + MDPV (g/mi)	NMOG+NOX FLEET STD MDV (10,001-14,000 GVWR) (g/mi)
*	*	1.10	*	0.065	0.074	*

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations. (As applicable, heavy-duty vehicles (HDV) over 14,000 pounds in GVWR listed in this Executive Order are certified to the requirements in 13 CCR Section 1961.2 applicable to MDV pursuant to 13 CCR Section 1956.8(c)(3) or 13 CCR Section 1956.8(h)(5), as applicable.)

ATTACHMENT
EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS
EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS (FTP, HWFET, 50°F, 20°F)

	FUEL TYPE	CH4: methane; NMOG: non-CH4 organic gas; HC: hydrocarbon; NMHC: non-CH4 HC; CO: carbon monoxide; NOx: oxides of nitrogen; HCHO: formaldehyde; PM: particulate matter; RAF: reactivity adjustment factor; 2DHS/3DHS [g HC/test]: 2/3 days diurnal+hot-soak; RL [g HC/mi]: running loss; ORVR [g HC/gallon dispensed]: on-board refueling vapor recovery; g: gram; mg: milligram; mi: mile; K: 1000 miles; F: degrees Fahrenheit; FTP: federal test procedure; SFTP: supplemental FTP									
		NMOG+NOx (g/mi)		CO (g/mi)		NOx (g/mi)		HCHO (mg/mi)		PM (g/mi)	
		CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD
FTP@50K	*	*	*	*	*	*	*	*	*	*	*
FTP@UL	GASOLINE-LEV3 E10	0.0186	0.030	0.15	1.0	0.015	*	*	4	0.0004	0.01
50°F @4K	GASOLINE-LEV3 E10	0.0103	0.060	0.25	1.0	0.006	*	*	8		

	FUEL TYPE	NMOG+NOx (g/mi)		CO (g/mi)	
		CERT	STD	CERT	STD
HWFET @ 50K	*	*	*		
HWFET @ UL	GASOLINE-LEV3 E10	0.0092	0.030		
20°F @ 50K	GASOLINE-COLD CO LOW OCTANE			0.58	10.0

SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

	FUEL TYPE		US06			SC03		COMPOSITE		
			NMOG+NOx (g/mi)	CO (g/mi)	PM (mg/mi)	NMOG+NOx (g/mi)	CO (g/mi)	NMOG+NOx (g/mi)	CO (g/mi)	PM (mg/mi)
@ 4K	*	CERT	*	*		*	*			
		STD	*	*		*	*			
@ UL	GASOLINE-LEV3 E10	CERT	*	*	*	*	*	0.0155	0.27	*
		STD	*	*	*	*	*	0.083	4.2	*
		BIN						0.060		

WHOLE VEHICLE EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

EVAPORATIVE FAMILY	FUEL TYPE	WHOLE VEHICLE EVAPORATIVE TESTING						RL (g/mi) @ UL	
		3DHS (g/test) @ UL			2DHS (g/test) @ UL			CERT	STD
		CERT	STD	FEL	CERT	STD	FEL		
LVVXR0142EP2	GASOLINE-LEV3 E10 PREM	0.1972	0.300	*	0.1385	0.300	*	0.000	0.05

ORVR / FUEL ONLY / CANISTER BLEED EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

EVAPORATIVE FAMILY	ORVR (g/gallon) @ UL			FUEL ONLY EVAP & CANISTER BLEED						
	FUEL TYPE	CERT	STD	FUEL TYPE	3DHS RIG TEST (g/test) @ UL		2DHS RIG TEST (g/test) @ UL		BLEED CANISTER TEST (g/test) @ 4K	
					CERT	STD	CERT	STD	CERT	STD
LVVXR0142EP2	GASOLINE-TIER3 E10 PREM	0.049	0.20	*	*	*	*	*	*	*



EFFECTIVE LEAK DIAMETER STANDARD AND CERTIFICATION LEVEL (INCHES)

EVAPORATIVE FAMILY	LEAK FAMILY	CERT	STD
LVVXR0142EP2	LVVXR0142EP2-001	*	0.02

*: not applicable; #: pounds; UL: useful life; PC: passenger car; LDT: light-duty truck; LDT1: LDT<6000#GVWR,0-3750#LVW; LDT2: LDT<6000#GVWR,3751-5750#LVW; LDT3: LDT 6001-8500#GVWR,3751-5750#ALVW; LDT4: LDT 6001-8500#GVWR,5751-8500#ALVW; MDV: medium-duty vehicle; MDV4: MDV 8501-10000#GVWR; MDV5: MDV 10001-14000#GVWR; MDPV: medium-duty passenger vehicle; HDV: heavy-duty vehicle; ECS: emission control system; CERT: certification; STD: standard; FEL: family emission limit; GVWR: gross vehicle weight rating; LVW: loaded vehicle weight; ALVW: adjusted LVW; LEV: low emission vehicle; ULEV: ultra LEV; SULEV: super ULEV; ZEV: zero-emission vehicle; TZEV: transitional ZEV; TWC/OC: 3-way/oxidizing catalyst; ADSTWC: adsorbing TWC; HAC: HC adsorbing catalyst; WU: warm-up catalyst; NAC: NOx adsorption catalyst; SCR-U or SCRC/SCR-N or SCRC-NH3: selective catalytic reduction-urea/ammonia; NH3OC: ammonia oxidation catalyst; CTOX/PTOX: continuous/periodic trap oxidizer; DPF: diesel particulate filter (active); GPF: PM filter for spark-ignited engine; HO2S/O2S: heated/oxygen sensor; WR-HO2S or AFS: wide range/linear/heated air-fuel ratio sensor; NOXS: NOx sensor; PMS: PM sensor; RDQS: reductant quality sensor; NH3S: ammonia sensor; EGR: exhaust gas recirculation; HP/LP EGR: High/Low Pressure EGR; EGRC: EGR cooler; AIR/AIRE: secondary air injection (belt driven)/(electric driven); PAIR: pulsed AIR; SFI/MFI: sequential/multiport fuel injection; DFI/IFI: direct/indirect fuel injection; TC/SC: turbo/super charger; CAC: charge air cooler; FFH: fuel fired heater; F/P/\$: full/partial/partial with fines on-board diagnostic; DOR: direct ozone reducing; HCT: hydrocarbon trap; BCAN: bleed carbon canister; prefix 2: parallel; (2) suffix: series; a hyphen (-) between after treatment ECS indicates multiple functionalities of the after treatment device (ex. DPF-SCRC: SCR coated DPF); CNG/LNG: compressed/liquefied natural gas; LPG: liquefied petroleum gas; E85: "85%" ethanol ("15%" gasoline) fuel; E10: "10%" ethanol ("90%" gasoline) fuel; A: automatic (with lockup); M: manual transmission; SA: semi-automatic transmission; CV: continuously variable transmission; SCV: selectable continuously variable transmission; AM: automated manual transmission; AMS: automated manual-selectable transmission; OT: other transmission; AER: all-electric range; EAER: equivalent AER; PHEV: plug-in hybrid electric vehicle; NMOG + NOx Fleet Ave. Credit for Extended Warranty: N = no credits, Y = credits, S = credits for some/select models

2020 MODEL YEAR: VEHICLE MODELS INFORMATION

MODEL NUMBER	MAKE	MODEL	VEH CLASS	ENGINE (L)	TRANS TYPE	EVAPORATIVE FAMILY	EXH ECS	OBD
1	VOLVO	S60 T8 AWD	PC	2.0	SA8	LVVXJ02.0P30	1	P
2	VOLVO	S60 T8 AWD POLESTAR ENGINEERED	PC	2.0	SA8	LVVXJ02.0P30	1	P
3	VOLVO	S90 T8 AWD	PC	2.0	SA8	LVVXJ02.0P30	1	P
4	VOLVO	V60 T8 AWD	PC	2.0	SA8	LVVXJ02.0P30	1	P
5	VOLVO	V60 T8 AWD POLESTAR ENGINEERED	PC	2.0	SA8	LVVXJ02.0P30	1	P
6	VOLVO	XC60 T8 AWD	LDT2	2.0	SA8	LVVXJ02.0P30	1	P
7	VOLVO	XC60 T8 AWD POLESTAR ENGINEERED	LDT2	2.0	SA8	LVVXJ02.0P30	1	P
8	VOLVO	XC90 T8 AWD	LDT4	2.0	SA8	LVVXJ02.0P30	1	P

ELECTRIC RANGE AND ZEV ALLOWANCE INFORMATION

MODEL NUMBER	PHEV TYPE	UDDS AER (MILES)	UDDS EAER (MILES)	US06 AER (MILES)	HIGHWAY (MILES)		ZEV ALLOWANCE
					AER	EAER	
3	TZEV	29.6	29.5	*	29.8	30.5	0.60
4	TZEV	30.6	31.8	*	31.4	31.5	0.62
5	TZEV	30.6	31.8	*	31.4	31.5	0.62
6	TZEV	26.0	26.7	*	25.9	26.1	0.57
7	TZEV	26.0	26.7	*	25.9	26.1	0.57
8	TZEV	25.6	26.7	*	25.1	25.1	0.57
1	TZEV	30.6	31.8	*	31.4	31.5	0.62
2	TZEV	30.6	31.8	*	31.4	31.5	0.62