



<b>California Environmental Protection Agency</b>  <b>Air Resources Board</b>	<b>VOLVO CAR CORPORATION</b>	Executive Order: A-018-0197 New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles Page 1 of 4
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Pursuant to the authority vested in the 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-14-012;

IT IS ORDERED AND RESOLVED: The following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. 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		
2016	GVVXJ02.5U3T		LDT2, PC		DEDICATED SINGLE FUEL VEHICLE		GASOLINE		
USEFUL LIFE (miles)			VEHICLE EMISSION CATEGORY			INTERIM / INTERMEDIATE IN-USE STD			
EXH/ORVR		EVAP	FTP	SFTP		FTP		SFTP	
120000		150000	LEV2 ULEV	LEV 2 SFTP STANDARD		*		*	
SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS				OBD STATUS			ENGINE DISPLACEMENT (L)		
1	TWC, WR-HO2S, HO2S, SFI, TC, CAC			FULL		ALL MODELS		2.5	
*	*			PARTIAL		*			
*	*			PARTIAL WITH FINES		*			
EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION									
EVAP / ORVR FAMILY		EVAPORATIVE STD CATEGORY		EVAP EMISSION STD VEHICLE CLASS		SPECIAL FEATURES			
GVVXR0130EB2		LEV 2		LDT2		*			
GVVXR0130EV2		LEV 2		PC		*			
EMISSION CREDIT INFORMATION									
ALLOWANCE FOR TEST GROUP				NMOG CREDIT FOR NON-PZEV ZERO-EVAP		NMOG CREDIT FOR DOR		OPTIONAL EXH. STD FOR WORK TRUCKS	
BASELINE PZEV		AT PZEV	TZEV						
*		*	*	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)		
*	*	1.04		0.020	0.093		0.110		

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.

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**BE IT FURTHER RESOLVED:**

The exhaust and evaporative emission standards and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50° Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's NMOG+NOx and greenhouse gas Fleet Average (PC or LDT or MDPV) or "Vehicle Equivalent Credit" (MDV) compliance plan shall be equalized as required.

**BE IT FURTHER RESOLVED:**

For the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for PC, LDT and MDV).

Vehicles certified under this Executive Order shall conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 8th day of June 2015.

  
 Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

## 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 (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	GASOLINE - CA PHASE 2	0.0150	0.040	0.51	1.7	0.021	0.05	*	8	*	*
FTP@UL	GASOLINE - CA PHASE 2	0.0258	0.055	0.64	2.1	0.029	0.07	*	11	*	0.01
50°F @4K	GASOLINE - CA PHASE 2	0.0393	0.080	0.39	1.7	0.019	0.05	*	16		

	FUEL TYPE	NOx (g/mi)		CO (g/mi)	
		CERT	STD	CERT	STD
HWFET @ 50K	GASOLINE - CA PHASE 2	0.011	0.07		
HWFET @ UL	GASOLINE - CA PHASE 2	0.019	0.09		
20°F @ 50K	GASOLINE-COLD CO LOW OCTANE			0.57	10.0

#### SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

	FUEL TYPE		US06			SC03		COMPOSITE		
			NMHC+NOx (g/mi)	CO (g/mi)	PM (mg/mi)	NMHC+NOx (g/mi)	CO (g/mi)	NMHC+NOx (g/mi)	CO (g/mi)	PM (mg/mi)
@ 4K	GASOLINE - CA PHASE 2	CERT	0.063	0.87		0.010	0.32			
		STD	0.14	8.0		0.20	2.7			
@ UL	*	CERT	*	*	*	*	*	*	*	*
		STD	*	*	*	*	*	*	*	*
		BIN						*		

#### 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	FEL	CERT	STD	FEL	CERT	STD
GVVXR0130EB2	GASOLINE-CA PHASE 2	0.404	0.65	*	0.393	0.85	*	0.008	0.05
GVVXR0130EV2	GASOLINE-CA PHASE 2	0.339	0.50	*	0.382	0.65	*	0.009	0.05

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

EVAPORATIVE FAMILY	ORVR (g/gallon) @ UL			FUEL ONLY EVAP & CANISTER BLEED						
				FUEL TYPE	3DHS RIG TEST (g/test) @ UL		2DHS RIG TEST (g/test) @ UL		BLEED CANISTER TEST (g/test) @ 4K	
	FUEL TYPE	CERT	STD		CERT	STD	CERT	STD	CERT	STD
GVVXR0130EB2	GASOLINE - TIER 2 UNLEADED	0.031	0.20	*	*	*	*	*	*	*
GVVXR0130EV2	GASOLINE - TIER 2 UNLEADED	0.015	0.20	*	*	*	*	*	*	*

\*: 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; 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; PZEV: partial ZEV; AT PZEV: advanced technology PZEV; TZE: 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; 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; 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; 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

**2016 MODEL YEAR: VEHICLE MODELS INFORMATION**

MAKE	MODEL	VEH CLASS	ENGINE (L)	TRANS TYPE	EVAPORATIVE FAMILY	EXH ECS	OBD	PZEV TYPE
VOLVO	S60 INSCRIPTION T5 AWD	PC	2.5	SA6	GVVXR0130EV2	1	F	*
VOLVO	S60 T5 AWD	PC	2.5	SA6	GVVXR0130EV2	1	F	*
VOLVO	S60CC T5 AWD	PC	2.5	SA6	GVVXR0130EV2	1	F	*
VOLVO	V60 T5 AWD	PC	2.5	SA6	GVVXR0130EV2	1	F	*
VOLVO	V60CC T5 AWD	PC	2.5	SA6	GVVXR0130EV2	1	F	*
VOLVO	XC60 T5 AWD	LDT2	2.5	SA6	GVVXR0130EB2	1	F	*
VOLVO	XC70 T5 AWD	LDT2	2.5	SA6	GVVXR0130EB2	1	F	*