File

California Environmental Protection Agency AIR RESOURCES BOARD	VOLVO CAR CORPORATION	EXECUTIVE ORDER A-018-0109 New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC), Div. 26, Part 5, Chap. 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That 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.

MODEL YEAR	TEST GROUP	VEHICLE TYPE	EXHAUST EMISSION STANDARD CATEGORY	FUEL TYPE
2002	2VVXV2.43L5T	Passenger Car	Low Emission Vehicle (LEV)	Gasoline

No.	EVAPORATIVE FAMILY (EVAP)	No.	SPECIAL FEATURES & EMISSION CONTROL SYSTEMS (ECS)	* = not applicable
1	2VVXR0133AAA	1	TWC, HAFS, HO2S, SFI, TC, CAC, OBD (P)	
2	2VVXR0133C70	2	*	
3	*	3	*	

TWC = 3-way catalytic converter O2S = oxygen sensor HO2S = heated O2S AFS/HAFS = air/fuel sensor (aka. universal O2S) / heated AFS MFI = multiport fuel injection SFI = sequential MFI TC/SC = turbo/super charger CAC = charge air cooler OBD (F) / OBD (P) = on-board diagnosis; full / partial compliance (prefix) 2 = parallel (2) (suffix) = series

EVAP No.	ECS No.	ENGINE SIZE (L)	VEHICLE MAKES & MODELS	VEHICLES SUBJECT TO SFTP STANDARDS ARE UNDERLINED
1	1	2.3	Volvo: S60 T5, V70 T5	
1	1	2.4	Volvo: S60 2.4T, V70 2.4T, S60 AWD, V70 AWD	
2	1	2.4	Volvo: C70	

The exhaust and evaporative emission standards (STD) and certification emission levels (CERT) for the listed vehicles are as follows. Any debit in the manufacturer's compliance plan for "NMOG Fleet Average" (passenger cars and light-duty trucks) or "Vehicle Equivalent Credit" (medium-duty vehicles) shall be equalized as required. The 50° Fahrenheit standards and CERT levels are listed below or compliance has been met based on the manufacturer's submitted compliance plan in lieu of actual testing.

CH4 = methane NMOG = non-CH4 organic gas NMHC = non-CH4 hydrocarbon CO = carbon monoxide NOx = oxides of nitrogen HCHO = formaldehyde PM = particulate matter RAF = reactivity adjustment factor

NMOG FLEET AVERAGE [g/mi]		NMOG [g/mi] @RAF = 0.94 CH4 RAF = *		CO [g/mi]		NOx [g/mi]		HCHO [mg/mi]		PM [g/mi]		Hwy NOx [g/mi]	
CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD
0.058	0.068												
K = 1000 miles	@ 50K	0.045	0.075	0.5	3.4	0.1	0.2	0.4	15	*	*	0.02	0.3
	@ 100K	0.055	0.090	0.6	4.2	0.1	0.3	0.5	18	*	*	0.02	0.4
	@ 50°F, 4K	*	*	*	*	*	*	*	*	*	*	*	*

CO [g/mi] @ 20°F, 50K			NMHC+NOx [g/mi] (composite)		NMHC+NOx [g/mi] [US06]		CO [g/mi] [US06]		NMHC+NOx [g/mi] [SC03]		CO [g/mi] [SC03]	
CERT	STD	g = gram mg = milligram mi = mile	CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD
3.1	10.0	@ 4K	*	*	*	*	*	*	*	*	*	*
F = degree Fahrenheit		@ 100K	*	*	*	*	*	*	*	*	*	*

* @ 100K	EVAPORATIVE FAMILY 1				EVAPORATIVE FAMILY 2				EVAPORATIVE FAMILY 3				EVAPORATIVE FAMILY 4			
	3-D	2-D	RL	ORVR	3-D	2-D	RL	ORVR	3-D	2-D	RL	ORVR	3-D	2-D	RL	ORVR
CERT	0.9	1.8	0.00	0.00	0.9	0.9	0.00	0.03	*	*	*	*	*	*	*	*
STD	2.0	2.5	0.05	0.20	2.0	2.5	0.05	0.20	*	*	*	*	*	*	*	*

2-D, 3-D [g/test] = 2-day, 3-day diurnal and hot-soak RL [g/mi] = running loss ORVR [g/gallon of fuel dispensed] = on-board refueling vapor recovery

BE IT FURTHER RESOLVED: That for the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 (labeling), 1968.1 or 1968.1(m)(6.2) (on-board diagnostic systems; full or partial compliance), 2035 et seq. (emission control warranty), 2235 (fuel tank fill pipes and openings), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles).

BE IT FURTHER RESOLVED: That the listed vehicle models have been certified on the condition that the manufacturer provide all on-board diagnostic demonstration data required by 13 CCR Section 1968.1(g) by December 3, 2001. Failure to submit the required demonstration data by the specified date, or failure of the submitted demonstration data to show compliance with the test procedures, shall be cause for the Air Resources Board to revoke this Executive Order and vehicles sold under the revoked conditional certification shall be deemed uncertified.

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 22nd day of October 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division