 File

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-18-93
Relating to Certification of New Motor Vehicles

VOLVO CAR CORPORATION

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapter 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That 1999 model-year Volvo Car Corporation exhaust emission control systems are certified as described below for passenger cars:

Emission Standard Category: Low-Emission Vehicle (LEV)

Fuel Type (Certification Fuel): Gasoline (Indolene)

Engine Family: XVVXV2.43PA2 Displacement: 2.3 Liters (142 Cubic Inches)
2.4 Liters (149 Cubic Inches)

Exhaust Emission Control Systems & Special Features:

Sequential Multiport Fuel Injection
Heated Oxygen Sensors (two)
Three Way Catalytic Converter
Turbocharger
Charge Air Cooler

Vehicle models, transmissions, engine codes and evaporative emission control families are listed on attachments.

The LEV certification exhaust emission standards for this engine family in grams per mile are:

Miles	Non-Methane Organic Gas	Carbon Monoxide	Nitrogen Oxides	Formaldehyde	Carbon Monoxide (20°F)
50,000	0.075	3.4	0.2	0.015	10.0
100,000	0.090	4.2	0.3	0.018	n/a

The LEV certification exhaust emission values for this engine family in grams per mile are:

Miles	Non-Methane Organic Gas	Carbon Monoxide	Nitrogen Oxides	Formaldehyde	Carbon Monoxide (20°F)
50,000	0.048	1.1	0.03	0.001	4.8
100,000	0.052	1.2	0.04	0.001	n/a

SUPERSEDED

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the aforementioned exhaust emission standards based on its submitted plan to comply with the fleet average NMOG exhaust mass emission requirements as set forth in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That under the submitted NMOG fleet average compliance plan, if the manufacturer incurs a NMOG debit for the aforementioned model year based on the projected NMOG fleet average exceeding the value required by the above-referenced standards and test procedures, all incurred NMOG debits by the manufacturer shall be equalized as required by the standards and test procedures.

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the running loss and useful life standards applicable to 1995 and subsequent model-year vehicles in the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," and the listed vehicle models comply with those standards.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" for the aforementioned model year (Title 13, California Code of Regulations, Section 2235).

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high-altitude requirements and highway emission standards, and with the California Inspection and Maintenance emission standards in place at the time of certification, as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That the vehicle manufacturer has demonstrated compliance with the exhaust emission standards at 50 degrees Fahrenheit as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That the manufacturer is certifying the listed vehicle models with a partially complying on-board diagnostic system for the aforementioned model year pursuant to Title 13, California Code of Regulations, Section 1968.1(m)(6.2) "Malfunction and Diagnostic System Requirements--1994 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines".

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the "California Motor Vehicle Emission Control and Smog Index Label Specifications" for the aforementioned model year (Title 13, California Code of Regulations, Section 1965).

SUPERSEDED

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the "California Refueling Emission Standards and Test Procedures for the 1998 and Subsequent Model Motor Vehicles," Title 13, California Code of Regulations, Section 1978, and the listed models comply with those standards.

BE IT FURTHER RESOLVED: That for the listed vehicles, the manufacturer has submitted and the Executive Officer hereby approves the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

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

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executed at El Monte, California this 31st day of August 1998.

R. B. Summerfield, Chief
Mobile Source Operations Division

SUPERSEDED

E.O.# A-18-93

1999 MODEL-YEAR AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: VOLVO CAR CORP. Exh Eng Fam: XVVXV2.43PA2 Evap Fam: XVVXR0133PA1

All Engine Codes in Engine Familiy: CA___ 49S___ 50S X AB965__, ORVR: YES X NO___

Exh Std: CA Tier-1___ TLEV___ LEV X ULEV___ SULEV___, US EPA Tier-1/NLEV X

Veh Class(es): PC X LDT1___ LDT2___ MDV1___ MDV2___ MDV3___ MDV4___ MDV5___

Single Cert Std for Multi-Class Eng Fam: N/A (specify: N/A, LDT1, MDV1, MDV2, MDV3, MDV4)

Fuel Type(s): Dedicated X Flex-Fuel___ Dual-Fuel___ Bi-Fuel___ Gasoline X Diesel___

CNG___ LNG___ LPG___ M85___ Other (specify)___

Emissions Test Fuel(s): Indo X CBG___ CNG___ LPG___ M85___ Other (specify)___

Diesel: 13 CCR 2282___ 40 CFR 86.113-90___ 40 CFR 86.113-94___

Evaporative Emission Test Procedure: California___ Federal X

Service Accum: Std AMA X Mod AMA___ Mfr ADP___ Other (specify)___

Test Procedure: N/A___ Std X Equiv___ R/L Test Proc: SHED___ Pt Source X

Engine Configuration: I-5 Displacement: 2.3 / 2.4 Liters 142 / 149 Cubic Inches

Valves per Cylinder: 4 Rated HP: 236/190 @ 5400/5700 RPM

Engine: Front X Mid___ Rear___ Drive: FWD X RWD___ 4WD-FT___ 4WD-PT___

Exhaust ECS (e.g., MFI, EGR, TC, CAC): SFI, HO2S(2), TWC, TC, CAC
(use abbreviations per SAE J1930 JUN93)

Engine Code (also list CA49ST/50ST)	Vehicle Models (if coded see attachment)	Trans. (M5, A4 etc.)	ETW or Test Wt.	DPA or RLHP	Ignition (ECM/PCM) Part No.	EGR System Part No.	Catalytic Converter Part No.
X53:1 (50st)	S70/V70/C70	M5	3625 3750 4000	6.5 6.9 7.1 7.4 7.5 7.6 7.8	9125601	N/A	9470013
X53:2 (50st)	S70/V70/C70	L4	3625 3750 4000	6.5 6.7 6.8 6.9 7.2 7.3 7.4 7.5 7.6 7.8	9125601	N/A	9470013
X56:2 (50st)	S70/V70/C70	L4	3625 3750 4000	6.5 6.6 6.8 6.9 7.5 7.6 7.7 7.8	9125601	N/A	9470013

Date Issued: Revisions:

SUPERSEDED