

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-8-51  
Relating to Certification of New Motor Vehicles

BAYERISCHE MOTOREN WERKE AG

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 Orders G-45-3 and G-45-4;

IT IS ORDERED AND RESOLVED: That 1989 model-year Bayerische Motoren Werke AG exhaust emission control systems are certified as described below for gasoline-powered passenger cars:

<u>Engine Family</u>	<u>Displacement</u> <u>Liters (Cubic Inches)</u>		<u>Exhaust Emission Control Systems</u> <u>(Special Features)</u>
KBM2.5V5F359	2.5	(152.2)	Three-Way Catalyst Heated Oxygen Sensor (Electronic Port Fuel Injection) (On-Board Diagnostics)

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

The following are the emission standards for this engine family:

<u>Hydrocarbons</u> <u>(Grams per Mile)</u>	<u>Carbon Monoxide</u> <u>(Grams per Mile)</u>	<u>Nitrogen Oxides</u> <u>(Grams per Mile)</u>
0.41	7.0	0.4

The following are the certification emission values for this engine family:

<u>Hydrocarbons</u> <u>(Grams per Mile)</u>	<u>Carbon Monoxide</u> <u>(Grams per Mile)</u>	<u>Nitrogen Oxides</u> <u>(Grams per Mile)</u>
0.21	2.4	0.2

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Gasoline-Powered Motor Vehicles".

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" (Title 13, California Administrative Code, Section 2290) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high altitude requirements and highway emission standards 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 listed vehicle models also comply with the "California Motor Vehicle Tune-Up Label Specifications" (Title 13, California Administrative Code, Section 1965) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the vehicle models listed also comply with the "Malfunction and Diagnostic System for 1988 and Subsequent Model Year[s]..." (Title 13, California Administrative Code, Section 1968) for the aforementioned model year.

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 regulations (Title 13, California Administrative Code, 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 28<sup>th</sup> day of July, 1988.



K. D. Drachand, Chief  
Mobile Source Division



# ENGINEERING EMISSION CONTROL

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Section 17.03.00

ARB SUPPLEMENTAL DATA SHEET

Manufacturer BMW  
Evaporative Family EV 40

E.O. A-8-51  
Engine Family KBM2.5V5F359  
Engine Type 4 cycle, inline - GNF  
Liters (CID) 2.5 l  
(152.2 cu. in.)

## ABBREVIATIONS

### Ignition System

CA-Centrifugal Advance  
ECU-Electronic Control Unit  
EI-Electronic Ignition  
ESAC-Electronic Spark Advance Control  
VA-Vacuum Advance  
VR-Vacuum Retard

### Exhaust Emission Control System

AIP-Air Injection-Pump  
AIV-Air Injection-Valve  
EIC-Electronic Injection Control (Diesel only)  
EGR-Exhaust Gas Recirculation  
EM-Engine Modification  
OC-Oxidation Catalyst  
SPL-Smoke Puff Limiter or Throttle Delay  
TOC-Trap Oxidizer, Continual  
TOP-Trap Oxidizer, Periodical  
OS-Oxygen Sensor  
HOS-Heated Oxygen Sensor  
EIC-Electronic Injection Control  
TWC-Three Way Catalyst  
DBC-Dual Bed Catalyst  
WUOC-Warm-Up Oxidation Catalyst  
WUTWC-Warm-Up Three-Way Catalyst

### Special Features

CFI-Central Fuel Injection or Throttle Body Injection  
EPFI-Electronic Port Fuel Injection  
MPFI-Mechanical Port Fuel Injection  
SFI-Sequential Fuel Injection  
DID-Diesel Injection-Direct  
DIP-Diesel Injection-Prechamber  
TC-Turbocharger  
SC-Supercharger  
IC-Intercooler or Aftercooler  
CCV-Combustion Chamber Valve  
OBD-On Board Diagnostic

### Fuel System

CFI, EPFI, MPFI, SFI  
DID, DIP, HOS, OS  
nV-nVenturi Carburetor  
VV-Variable Venturi Carburetor

Vehicle Model(s): BMW 325i, 325is, 325i Conv., 325iX, 525i

DRIVE SYSTEM: Front engine, rear wheel drive

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# ENGINEERING EMISSION CONTROL

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET ED # A-8-51

Passengers Cars     Light-Duty Trucks     Medium-Duty Vehicles

Gas     Diesel

Manufacturer BMW    Engine Family KBM2.5V5F359

Liter (CID) 2 494 cu. cm    Eng. Type 4 cycle, inline

ECS (Special Features) TWC, HOS, EIC (EPFI, OBD)

Engine Code	Vehicle Model(s)	Trans. Type	Equiv. Test Weight	Ign. System Part No.	Fuel System Part No.	Catalyst Part No.
2.5/3 M5	325i 325is	manual (M 5)	3 125 lbs.	BMCU	BMCU	1 711 838
				0 261 200 173	0 261 200 173	1 711 848 1 716 622 1 716 614
2.5/3 A4-4	325i 325is	autom.	3 250 lbs.			
2.5/3 M5-C	325i Conv.	manual	3 375 lbs.	EID	AFM	
2.5/3 A4-C	325i Conv.	autom.	3 375 lbs.	1 235 522 365	0 280 202 082	
				1 715 905		
2.5/3M5-X-2	325iX	manual	3 250 lbs.		FI	
2.5/3M5-X-4	325iX	manual	3 375 lbs.		0 280 150 715	
2.5/3A4-X	325iX	autom.	3 375 lbs.			
2.5/5 M5	525i	manual	3 750 lbs.			
2.5/5 A4	525i	autom.	3 750 lbs.			

Comments: See the preceding page for abbreviations and evaporative emission family identification. For dyno test HP settings refer to the test vehicle requirements list.

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# ENGINEERING EMISSION CONTROL

## TEST VEHICLE REQUIREMENTS

Engine Family	Model Type	Equiv. Test Weight (lbs.)	Actual Road Load Power (hp)
KBM2.5V5F359	325i, 325is	3 125	8.9
	325iA, 325iSA	3 250	9.2
	325i Conv.	3 375	8.3
	325iA Conv.	3 375	8.3
	325iX	3 250	9.2
	325iX	3 375	9.3
325iXA	325iXA	3 375	9.3
	525i	3 750	7.3
	525iA	3 750	7.6

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