

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-8-97  
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 Order G-45-9;

IT IS ORDERED AND RESOLVED: That 1996 model-year Bayerische Motoren Werke AG exhaust emission control systems are certified as described below for passenger cars:

Fuel Type: Gasoline

Engine Family: TBM1.9VJGKEK Displacement: 1.9 Liters (115.6 Cubic Inches)

Exhaust Emission Control Systems and Special Features:

- Three Way Catalytic Converter
- Heated Oxygen Sensors (two)
- Sequential Multiport Fuel Injection

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

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

<u>Miles</u>	<u>Non-Methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Carbon Monoxide (20°F)</u>
50,000	0.25	3.4	0.4	10.0
100,000	0.31	4.2	0.6	n/a

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

<u>Miles</u>	<u>Non-Methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Carbon Monoxide (20°F)</u>
50,000	0.10	1.0	0.2	4.5
100,000	0.12	1.2	0.2	n/a

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 non-methane organic gas (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 50,000-mile evaporative emission standards applicable to 1980 through 1994 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, based on the evaporative emission phase-in compliance schedule submitted by the vehicle manufacturer, the listed vehicle models shall not be subject to the running loss and useful life standards set forth in the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles."

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

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 listed vehicle models also comply with the "Malfunction and Diagnostic System Requirements--1994 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines" (Title 13, California Code of Regulations, Section 1968.1) 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 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 21<sup>st</sup> day of December 1995.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

**1996 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
PASSENGER CARS, LIGHT DUTY TRUCKS AND MEDIUM DUTY VEHICLES**

Manufacturer: BMW Exh Engine Family: TBM1.9VJGKEK Evap. Fam: TBM1025BYPA0  
 All Eng Codes in Eng Fam: CA 49S 50S X AB965  
 Exh Std: CA Tier-1 X TLEV LEV ULEV ZEV ; US EPA Tier-1 X  
 Evap Std: 50K X Useful Life with R/L In-Use Exh Std: Full In Use X Alt In Use  
 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 Flex-Fuel Dual Fuel Bi - Fuel Gasoline X Diesel  
CNG LNG LPG M85 Other (specify)  
 Emiss Test Fuel (s): Indo Ph2 X CNG LPG M85 Other (specify)  
Diesel: 13 CCR 2282 40 CFR86.113-90 40 CFR86.113-94  
 Service Accum: Std AMA Mod AMA Mfr ADP X Other (specify)  
 NMOG Test Procedure: N/A X Std Equip R/L Test Proc: SHED Pt Source  
 Hybrid: Type A B C, APU Cycle (e.g., Otto, Diesel, Turbine)  
 Engine Configuration: 4-inline Displacement: 1.9 Liters 115.6 Cubic Inches  
 Valves per Cylinder: 4 Rated HP: 138 @ 6 000 RPM  
 Engine: Front X Mid Rear Drive: FWD RWD X 4WD-FT 4WD-PT  
 Exhaust ECS: TWC,HO2S(2),SFI

Engine Code (50 ST)	Vehicle Models	Trans. Type	ETW (lbs.)	DPA or RLHP (hp)	Ignition (ECM/PCM) Part No.	EGR System Part No.	Catalytic Converter Part No.
1.9/3/C M5	318iC	M5	3 375	6.6	1 743 389 1 429 812*		1 743 613 1 432 446
1.9/3/C M5	318i, is	M5	3 250	6.5			
1.9/3/C M5	318ti	M5	3 000	6.8			
1.9/3/C M5	Z3	M5	3 000	7.5			
1.9/3/C A4	318iAC	A4	3 500	6.6	1 743 565 1 429 813*		
1.9/3/C A4	318iA, isA	A4	3 375	6.5			
1.9/3/C A4	318tiA	A4	3 125	6.8			
1.9/3/C A4	Z3A	A4	3 125	7.5			

\*) FF 96 - 1.9 - 2

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**1996 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
PASSENGER CARS, LIGHT DUTY TRUCKS AND MEDIUM DUTY VEHICLES**

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Manufacturer : BMW Exh Engine Family : TBM1.9VJGKEK Evap. Fam: TBM1025BYPA0  
 All Eng Codes in Eng Fam: CA 49S 50S X AB965  
 Exh Std: CA Tier-1 X TLEV LEV ULEV ZEV ; US EPA Tier-1 X  
 Evap Std: 50K X Useful Life with R/L In-Use Exh Std: Full In Use X Alt In Use  
 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 CNG LNG LPG M85 Other (specify)  
 Emiss Test Fuel (s): Indo Ph2 X CNG LPG M85 Other (specify)  
 Diesel: 13 CCR 2282 40 CFR86.113-90 40 CFR86.113-94  
 Service Accum: Std AMA Mod AMA Mfr ADP X Other (specify)  
 NMOG Test Procedure: N/A X Std Equiv R/L Test Proc: SHED Pt Source  
 hybrid: Type A B C , APU Cycle (e.g., Otto, Diesel, Turbine)  
 Engine Configuration: 4-inline Displacement: 1.9 Liters 115.6 Cubic Inches  
 Valves per Cylinder: 4 Rated HP: 138 @ 6 000 RPM  
 Engine: Front X Mid Rear Drive: FWD RWD X 4WD-FT 4WD-PT  
 Exhaust ECS: TWC, HO2S(2) SFI

Section		Section	
1	Authorized Representative 01.00.00	21	Gen Std, Increase in Emissions
2	Fuel Specifications 03.00.00		Safety, Meets all Requirements 20.10.00
3	Test Equipment 04.00.00	22	Emiss. Label Durability St. 17.01.00
4	Test Procedure 05.00.00	23	Driveability Statement 17.01.00
5	Mileage Accumulation Route 05.00.00	24	Adjustable Parameters n/a
6	Emiss.Warranty Statement(St.) 17.01.00	25	Tamper Resistance Method(s) none
7	Maint: Cert/Req'd/Recm'd 06.00.00	26	Fill Pipe Specifications 17.01.00
8	Emiss.Label/Vac. Hose Diag. 07.00.00	27	High Altitude Compliance 17.04.00
9	Evap. Control System 08.11.00	28	OBD Sys.incl.Marked Revisions 17.05.00
10	Engine Parameters 20.01.00	29	I&M Test Procedure & Data 17.01.00
11	Fuel System 08.01.00	30	50 Degree F Compliance n/a
12	Ignition System 08.02.00	31	Manufacturer's RAF n/a
13	Exhaust Control Systems 08.10.00	32	Phase In Plans: Exh Cert Stds see
14	Projected Sales (LDT/MDV Split) 17.01.00		Exh In-Use Stds Cert.
15	Vehicle Description 22.00.00		Evap Cert Stds Plan
16	Evap. Bench Test Procedure 17.01.00	33	NMOG Fleet Average Calculation MY96
17	R/L Temp & Press Profiles n/a	34	AB965 Credits/Withdrawals n/a
18	EDV Selection 17.01.00	35	EPA Certificate <u>BMW-LDV-96-04-00</u>
19	Prod.Veh.same as Test Veh.St. 17.01.00	36	Equiv NMOG Proc--ARB Approval n/a

20	Test Veh. Information	Emission Data			
		Durability Data Vehicle	Vehicle	Vehicle	Vehicle
	C/O or C/A				
	MY & ID	96 A M70 190	96 A M71 349	96 A M51 536	
	Vehicle Log Page(s)	22.01.00	22.02.00	22.03.00	
	Zero Mile Books	--	--	--	
	Maint. Logs & Engr. Eval.	22.01.00	22.02.00	22.03.00	

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**1996 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
PASSENGER CARS, LIGHT DUTY TRUCKS AND MEDIUM DUTY VEHICLES**

Manufacturer: BMW  
 Exhaust Engine Family: TBM1.9VJGKEK  
 Evaporative Family: TBM1025BYPA0

Vehicle ID <sup>(3)</sup>	Code (Displ)	Test Location	Trans- mission	ETW	DPA or RLHP	MPG City/Hwy
1. A M71 349 (Type 03)	1.9/3/C A4	BMW	L4	3 125 lbs.	7.5	24.3/37.7
2. A M51 536 (Type 00)	1.9/3/C M5	BMW	M5	3 375 lbs.	6.6	24.4/38.6
3. F E50 041 (Evap.)	2.5/36/4 A4	BMW	L4	3 375 lbs.	7.0	20.1/32.0

**Projected Emissions (1) & (2)**  
(g/mi, except mg/mi for HCHO and g/test for D+HS)

	OMNMHCE X NMHC NMOG	CO	NOx	HCHO	20°F CO	PM	Hwy NOx	City CO <sub>2</sub>	Evaporative		
									X 50K 3-day D+HS	2-day D+HS	R/L
									1. A M71 349 (Type 03) 50K	0.104	0.98
100K	0.118	1.17	0.19	n.a.	n.a.	n.a.	0.01	n.a.	n.a.	n.a.	n.a.
2. A M51 536 (Type 00) 50K	0.092	0.68	0.16	n.a.	---	n.a.	0.02	353	n.a.	n.a.	n.a.
100K	0.104	0.84	0.19	n.a.	n.a.	n.a.	0.03	n.a.	n.a.	n.a.	n.a.
3. F E50 041 (Evap.) 50K	0.146	1.03	0.17	n.a.	n.a.	n.a.	0.04	440	1.0	n.a.	n.a.
(1) The EDV's above comply with the standards of (@ 50K):	0.25	3.4	0.4	n.a.	10.0		0.53	n.a.	2.0	n.a.	n.a.
standards of (@ 100K):	0.31	4.2	0.6	n.a.	n.a.		0.80	n.a.	n.a.	n.a.	n.a.
and includes deterioration factors of (@ 50K):	1.148	1.252	1.249	n.a.	1.252	n.a.	1.249	n.a.	0.0	n.a.	n.a.
factors of (@ 100K):	1.295	1.504	1.498	n.a.	n.a.	n.a.	1.498	n.a.	n.a.	n.a.	n.a.

and an Reactivity Adjustment  
Factor (RAF) for NMOG of:

Methane  
NMOG n.a (CNG or LNG only) n.a

TLEV/LEV/ULEV 50° F

emissions (w/RAF but w/o DF's):

TLEV/LEV/ULEV 50° F standards:

				Exempted	<u>n.a</u>
				Exempted	<u>      </u>

(2) Evap DF is average of: 50K or 3-day D+HS: Veh DF: 0.0 and Bench DF: 0.0  
 2-day D+HS: Veh DF: n.a and Bench DF: n.a  
 R/L: Veh DF: n.a and Bench DF: n.a

(3) List configuration with the highest projected sales first

Remarks \_\_\_\_\_

Application

Processed by: R. Rung Date: 12/11/95 Reviewed by: L. Stern Date: 12/19/95

ISSUE DATE