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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER M-6-81
Relating to Certification of New Motorcycles

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 the following engine and exhaust emission control systems produced by the manufacturer are certified as described below for four-stroke gasoline-powered motorcycles:

Model Year: 2001

Engine Family	Displacement Cubic Centimeters	Class	Exhaust Emission Control Systems & Special Features
1BMXC0.65R13	652	III	Multiport Fuel Injection Three Way Catalytic Converter Heated Oxygen Sensor

Vehicle models and transmissions are listed on the attachment. Production motorcycles shall be in all material respects the same as those for which certification is granted.

The following are the exhaust emission standards and exhaust emission certification values in grams per kilometer for this engine family:

Hydrocarbons		Carbon Monoxide	
Standard	Certification	Standard	Certification
1.0	0.2	12	3

BE IT FURTHER RESOLVED: That the Executive Officer has been provided all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Code of Regulations, Section 2035 et seq.).

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles," as required by Section 1976, Title 13 of the California Code of Regulations.

BE IT FURTHER RESOLVED: That these motorcycles are found exempt from compliance with the Air Resources Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" pursuant to Executive Order G-70-16-E.

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

Executed at El Monte, California this 22nd day of June 2000.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Family: 1BMXC0.65R13

Motorcycle Model Summary Form

65. Model Designation	66. Worst Case	67. Disp. (cc)	68. Bore / Stroke (mm)	69. Basic Ignition Timing (degrees)	70 Power (kW)	71 Rated Speed (RPM)	72 Rated Torque (Nm)	73. Rated Speed (RPM)
F650GS	X	652	100/83	0° static	37	6500	60	5000
F650GS Dakar	X	652	100/83	0° static	37	6500	60	5000

65. Model Designation	74. EIM (kg)	75. Loaded Vehicle Weight Range (kg)	76 Road Load (nt)	77 Total Vehicle Mass (kg)	78 Full Weight with All Factory Options (kg)	79. Trans. Type	80 N/V
F650GS	280	276 - 285	131,1	380	200	M-5	43,1
F650GS Dakar	280	276 - 285	131,1	380	200	M-5	43,1

EO # M-C-81

Issued:3/27/2000
Revised:

Engine Family: 1BMXC0.65R13

Motorcycle Test Information Form

27. Are you carrying over test results from a previously certified family?____ Yes X No
    a) If yes, indicate family name: _____
    b) Is the family being certified identical to the family from which the data is being carried over? _____.

28. Model Designation of Test Vehicle: F650GS

29. Test Information Number: R13

30. Vehicle ID: V 101963

31. Service Accumulation Duration: 15033 (km)

32. Maximum Rated Power: 37 kW @ 6500 RPM

33. Displacement: 652 cc

34. Certification Fuel: unleaded gas 91 AKI

35. Test Data Set: 1

36. Road Load: 131,1 N

37. Inertia Mass: 280 kg

38. N/V: 43,1

39. EVAP. Bench Test Method Approved:
    Date: 1996

    Reference: V 101466

40. Unscheduled Maintenance: ____ Yes X No

41. If yes, Vehicle Log provided: _____

42. Exhaust Emission Deterioration Factors:

		Emission Values	
Test Number	System Kilometers	HC	CO
1	3553	0,242	2,256
2	10032	0,229	2,397
3	10098	0,262	2,737
4	15033	0,212	2,346
5			
6			
7			
Interpolated Values at 15 000 km:		**HC = 0,2237**	**CO = 2,4927**
Extrapolated Values at 30 000 km:		**HC = 0,1883**	**CO = 2,6581**

Check one:	
Regular DF	X
Modified DF	
If different vehicle specify vehicle ID	

43. Emission Test Results:

Official Test Results		Test 1	Test 2	Test 3	Test 4		Deterioration Factors
g/km	CO	2,346				(X)	**1,066**
g/km	CO^2	89,6					----------
g/km	HC	0,212				(X)	**1,000**
g/test	Evap.	1,09				(+)	**0,096**

44. Certification Levels:

g/km	CO	2,502			
g/km	HC	0,212			
g/test	Evap.	1,186			

Processed by: S Tenltach
Date: 6/20/2000

Reviewed by: Joseph Jegede
Date: 6/21/2000

EO # M-6-81

Issued: 3/27/2000
Revised:

Motorcycle Engine Family Information Form

0-34

1. Manufacturer: BMW

2. Certification Contact Person, address, phone, and fax:
   Mr.Gordon B. Keil
   BMW of North America, Inc.
   Montvale, N.J. 07645
   Phone No. 201-573 2195
   Fax No. 201-930 8402

3. Model Year: 2001

4. Process Code: new
   (new, correction, revision, r/c, f/f, etc.)

5. Engine Family: 1BMXC0.65R13
   50s Engine Code: X
   49s Engine Code: _____
   Calif. Engine Code: _____

6. Emission Control System: MFI, TWC, HO_2S

7. Calif. Designated Standard N/A

8. Projected Annual Sales: total
   California

9. New Technology ___ Yes X No
   If yes, cite the correspondence or reference the submittal document: _____

10. Displacement: 652 cc

11. Number of Cylinders: 1

12. Cylinder Arrangement: upright

13. Cylinder Head Configuration: OHC

14. Type of Cooling: Water

15. Combustion Cycle: 4 stroke

16. Method of Aspiration: natural

17. Fuel System: FI

18. Number of Catalytic Converters: 1

19. Adjustable Parameters:

Parameter(s)	Adjustable Range (or NA)	Tamper Resistance Method (or NA)	Method Approved
Ignition timing	N.A.	N.A.	
Idle speed	1500 ± 100 RPM	N.A.	

20. AECDs In the Emission Control Systems:

Exhaust System		Evaporative System	
AECDs In System:	ECM	AECDs In System:	Purge valve
	Fuel pressure regulator		
	Coolant temperature sensor		
	Air temperature sensor		
	Throttle position sensor		
	Oxygen sensor		
	Throttle valve actuator		