

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-6-548
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

GENERAL MOTORS CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following General Motors Corporation 1992 model-year gasoline engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Engine Family	Engine Displacement		Exhaust Emission Control Systems
	Liters	(Cubic Inches)	
NGM04.3BLA1	4.3	(262)	Oxidation Catalyst Heated Oxygen Sensor Exhaust Gas Recirculation Throttle Body Electronic Fuel Injection
NGM05.7BLA1	5.7	(350)	Oxidation Catalyst Oxygen Sensor Exhaust Gas Recirculation Throttle Body Electronic Fuel Injection
NGM07.0BLA7	6.0/7.0	(366/427)	Oxidation Catalyst Oxygen Sensor Exhaust Gas Recirculation Throttle Body Electronic Fuel Injection
NGM07.4BNA5	7.4	(454)	Three-Way Catalyst Oxygen Sensor Exhaust Gas Recirculation Throttle Body Electronic Fuel Injection

Engine models and codes are listed on attachments.

The following are the emission standards for these engine families:

<u>Hydrocarbons</u> gm/bhp-hr	<u>Carbon Monoxide</u> gm/bhp-hr	<u>Nitrogen Oxides</u> gm/bhp-hr
1.9	37.1	5.0

The following are the certification emission values of these engine families:

<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>
NGM04.3BLA1	0.5	7.5	3.7
NGM05.7BLA1	0.5	9.1	3.5
NGM07.0BLA7	0.9	10.4	4.6
NGM07.4BNA5	0.6	14.0	3.9

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 provisions (California Health and Safety Code Section 43205.5).

Engines 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 attachments.

Executed at El Monte, California this 22 day of March, 1991.

Raphael Suonowitz
for R. B. Summerfield
Assistant Division Chief
Mobile Source Division

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(1992)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Families: NGM04.3BLA1
NGM05.7BLA1
NGM07.0BLA7
NGM07.4BNA5

Engine CID (Liters) - Type: 262 (4.3), 350 (5.7), 366 (6.0), 427 (7.0), 454 (7.4)

ABBREVIATIONS:

Ignition System

CA-Centrifugal Advance
EEC-Electronic Engine Control
EI-Electronic Ignition
ESAC-Electronic Spark Advance Control
VA-Vacuum Advance
VR-Vacuum Retard
CU-Electronic Control Unit

Fuel System

CFI, CL, DID, DIP, EFI, MFI
nV-nVenturi Carburetor
Injection

GM Abbreviations

A/C-Air Conditioning
FC-Forward Control
Injection
HD-Heavy Duty
CID-Cubic Inch Displacement
TBI-Throttle Body Injection
RWD-Rear Wheel Drive
4x2-Two Wheel Drive
4x4-Four Wheel Drive
6x4-Four Wheel Drive

Exhaust Emission Cont System

AIP-Air Injection Pump
AIV-Air Injection Valve
CL-Closed Loop
DBC-Dual Bed Catalyst
EGR-Exhaust Gas Recirculation
EIC-Electronic Injection Control
EM-Engine Modification
OC-Oxidation Catalyst System
O2S-Oxygen Sensor
HO2S-Heated Oxygen Sensor
SPL-Smoke Puff Limiter or Throttle Delay

TOC-Trap Oxidizer, Continual
TOP-Trap Oxidizer, Periodical
TR-Thermal Reactor
TWC-Three-Way Catalyst System

Special Features

CCV-Combustion Chamber Valve
CFI-Central Fuel Injection
DID-Diesel Injection-Direct
DIP-Diesel Injection-Prechamber
EFI-Electronic Fuel

IC-Intercooler/Aftercooler
MFI-Mechanical Fuel

TC-Turbocharger

Engine: Front (all Vehicles)

Drive: See Chassis Type, all 4x2 vehicles are RWD.

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY DUTY GASOLINE VEHICLES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Families:

NGM04.3BLA2

NGM05.7BLA1

NGM07.4BNA5

Vehicle Models (Series)

Engine CID Values Appear Below

Forward Control - G Models

Hi-Cube Van/Magnavan - G30
Cutaway Van/Vandura Spl - G30
Van/Vandura - G30
Sportvan/Rally Wagon - G30

Forward Control - P Models

Forward Control Chassis - P20
Step-Van/Value Van - P20

Forward Control Chassis - P30
Motor Home Chassis - P30
Step-Van/Value Van - P30

350

454

454

454

Suburban
CK20

Pickup
C30

350

454

Forward Control Chassis
P4T042

262

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY DUTY GASOLINE VEHICLES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Families:

NGM07.OBLA7

Vehicle Models (Series)

Engine CID Values Appear Below

Forward Control - G Models

Hi-Cube Van/Magnavan - G30
Cutaway Van/Vandura Spl - G30
Van/Vandura - G30
Sportvan/Rally Wagon - G30

Forward Control - P Models

Forward Control Chassis - P20
Step-Van/Value Van - P20

Forward Control Chassis - P30
Motor Home Chassis - P30
Step-Van/Value Van - P30

Conventional Cab & Chassis

C6D042 366
C7D042, C7D064 366, 427

School Bus

B6P042 366
S7T042 366
B7P042 366, 427

Forward Control Chassis

P4T042
P6T042 366, 427

Pickup

CK20CC
C20
CK30

Suburban

C20

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Family: NGM04.3BLA1

Exhaust Emission Control System: EGR/OC/HO2S (CFI)

Liter (CID): 4.3 (262)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (ECU) MFR PART NO.	FUEL SYSTEM (TBI) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
LB4 (4)	155 @ 4000	230 @ 2400	1615521 1615531 16167811	Rochester 17091028 17091033	17087026	25103516

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HDG-SDS

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Family: NGM05.7BLA1

Exhaust Emission Control System: EGR/OC/02S (CFI)

Liter (CID): 5.7 (350)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (ECU) MFR PART NO.	FUEL SYSTEM (TBI) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
L05 (3)	190 @ 4000	300 @ 2400	16157941 16157961 16157991 16162081 16162101 16155581 16166331 16166351	Rochester 17091043	17087185	25103516
L05 (4)			16157601	Rochester 17091044		

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AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Family: NGM05.7BLA1

Exhaust Emission Control System: EGR/OC/02S (TBI)

Liter (CID): 5.7 (350)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (ECU) MFR PART NO.	FUEL SYSTEM (TBI) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
L05 (3)	190 @ 4000	300 @ 2400	16157941 16157961 16157991 16162081 16162101	Rochester 17091043	17087185	25103516
L05 (4)			16157601	Rochester 17091044		

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HEAVY-DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Family: NGM07.0BLA7

Exhaust Emission Control System: EGR/OC/02S (CFI)

Liter (CID): 7.0 (427), 6.0 (366)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (ECU) MFR PART NO.	FUEL SYSTEM (TBI) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
LS0 (1) 6.0L	210 @ 4000	325 @ 2400	16141221 16141231 16141241 16141251 16141261 16141271 16166311	Rochester 17091128	17090002	25103516
LRO (2) 7.0L	240 @ 4000	375 @ 2800	16141281 16156781 16156791 16156801 16156811 16157931 16166291 16166301	Rochester 17091129		

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(1992)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY GASOLINE ENGINES

GREATER THAN 14,000 GVWR

Manufacturer: General Motors Corporation

Executive Order No.: A-6-548

Engine Family: NGM07.4BNA5

Exhaust Emission Control System: EGR/TWC/O2S (CFI)

Liter (CID): 7.4 (454)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (ECU) MFR PART NO.	FUEL SYSTEM (TBI) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
L19 (3) 7.4L	230 @ 3600	385 @ 1600	16158071 16158111 16162041 16158121 16158091 16158141 16162061 16158171 16158181	Rochester 17091045	17091064	25128940
L19 (4) 7.4L			16136561	Rochester 17091046		

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