

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-254-5  
Relating to Certification of New Motor Vehicles

HYUNDAI MOTOR COMPANY

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 Hyundai Motor Company emission control systems are certified as described below for gasoline-powered passenger cars:

<u>Engine Family</u>	<u>Displacement Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
KHY2.4V5FCDX	2.4 (143.4)	Exhaust Gas Recirculation Oxygen Sensor Three-Way Catalyst (Combustion Chamber Valve) (Sequential Fuel Injection)

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

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

<u>Hydrocarbons (Grams per Mile)</u>	<u>Carbon Monoxide (Grams per Mile)</u>	<u>Nitrogen Oxides (Grams per Mile)</u>
0.29	3.0	0.1

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 have been granted an exemption from compliance with the requirements of 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 21<sup>st</sup> day of September, 1988.

  
K. D. Drachand, Chief  
Mobile Source Division

1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Hyundai Motor Company  
 Evap. Family KHY2.4IC

Engine Family KHY2.4V5FCDX  
 Engine Type 4 cyl. In-line  
 Liters (CID) 2.4L (143.4)

ABBREVIATIONS

Exhaust Emissions Control System

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

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 Diagnostics

Fuel System

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

Ignition System

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

VEHICLE MODELS: SONATA

Engine: Front  X  Mid.   Rear    
 Drive : FWD  X  RWD   4WD Full Time   4WD Part Time

Issued : 7-1-88  
 Revised:

## 1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

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Passenger Cars X Light-Duty Trucks    Medium-Duty Vehicles    Gas X Diesel     
 Manufacturer Hyundai Engine Family KHY2.4V5FCDX  
 Liter (CID) 2.4 (143.4) Eng. Type 4 cyl. In-line  
 Emission Control Sys. (Special Features) OS+EGR+TWC (CCV+SFI)

Engine Code	Vehicle Model	Trans. Type	Equiv. Test Weight	Ign. System (ECU) ID No.	Fuel System ID No.	EGR Valve ID No.	Catalyst Part No.
ACM5 /CM5	SONATA	M5	3250	CLS1	35310-32660 or B275	TC4	28950 -32661
ACL4 /CL4	SONATA	L4	3250	CLS1	35310-32660 or B275	TE2	28950 -32661

## Coastdown Horsepower

Car Line (Engine Family)	Body Style	Trans.	Test Weight	Test HP With Air Con.	Coastdown Time With Air Con.	Tire
SONATA (KHY2.4V5FCDX)	4-NB	M5	3250	8.6	15.18	P195/70R14
		L4	3250	7.6	15.97	P195/70R14