

File

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-328-1
Relating to Certification of New Motor Vehicles

IMPCO TECHNOLOGIES, INC.

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 1997 model-year Impco Technologies, Inc. exhaust emission control systems are certified as described below for medium-duty vehicles:

Emission Standard Category: Low-Emission Vehicle (LEV)

Fuel Type: Dual-Fuel Compressed Natural Gas (CNG) or Gasoline

Engine Family: VTJ5.7AZN7EK Displacement: 5.7 Liters (350 Cubic Inches)

Exhaust Emission Control Systems & Special Features:

- Dual Three Way Catalytic Converters
- Dual Heated Oxygen Sensors (two)
- Exhaust Gas Recirculation
- Sequential Multiport Fuel Injection (Gasoline)
- Throttle Body Fuel Injection (CNG)

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: (The standards in parentheses are for gasoline.)

<u>Test Weight</u> <u>(lbs.)</u>	<u>Miles</u>	<u>Non-Methane</u> <u>Organic Gases</u>	<u>Carbon</u> <u>Monoxide</u>	<u>Nitrogen</u> <u>Oxides</u>	<u>Formaldehyde</u>
5751-8500	50,000	0.195 (0.39)	5.0 (5.0)	1.1 (1.1)	0.022 (0.022)
	120,000	0.280 (0.56)	7.3 (7.3)	1.5 (1.5)	0.032 (0.032)

The CNG certification exhaust emission values set forth for non-methane organic gases (NMOG) reflect application of a reactivity adjustment factor (RAF) for CNG-fueled medium-duty LEVs, and the addition of the product of the methane exhaust emission value and a RAF for methane emission of CNG-fueled medium-duty LEVs.

Reactivity Adjustment Factor for NMOG Mass Emission: 0.43

Reactivity Adjustment Factor for Methane Mass Emission: 0.0047

The certification exhaust emission values for this engine family in grams per mile are: (The values in parentheses are for gasoline.)

<u>Test Weight</u> <u>(lbs.)</u>	<u>Miles</u>	<u>Non-Methane</u> <u>Organic Gases</u>	<u>Carbon</u> <u>Monoxide</u>	<u>Nitrogen</u> <u>Oxides</u>	<u>Formaldehyde</u>
5751-8500	50,000	0.040 (0.16)	2.1 (2.0)	0.7 (0.3)	0.003 (0.003)
	120,000	0.046 (0.18)	2.5 (2.6)	0.8 (0.4)	0.003 (0.003)

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 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" pursuant to provisions in the said standards and test procedures applicable to small-volume manufacturers.

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 "California Motor Vehicle Emission Control and Smog Index 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 "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.).

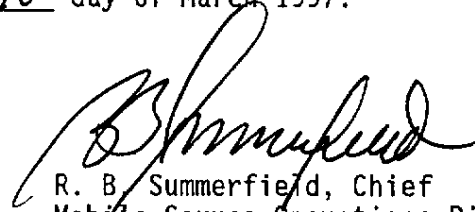
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Vehicles certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executed at El Monte, California this 16th day of March 1997.



R. B. Summerfield, Chief
Mobile Source Operations Division

1997 MODEL-YEAR AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: IMPCO Technologies, Inc. Exh Eng Fam: VTJ5.7AZN7EK Evap Fam: VTJ1098ASMBA
 All Eng Codes in Eng Fam: CA 49S 50S X AB965
 Exh Std: CA Tier-1 TLEV LEV X ULEV ZEV ; US EPA Tier-1
 Evap Std: 50K X Useful Life with R/L In-Use Exh Std: Full In Use Alt In Use X
 Veh Class(es): PC LDT1 LDT2 MDV1 MDV2 MDV3 X 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 X Bi-Fuel Gasoline X Diesel
 CNG X LNG LPG M85 Other (specify)
 Emiss Test Fuel(s): Indo X Ph2 CNG X LPG M85 Other (specify)
 Diesel: 13 CCR 2282 40 CFR 86.113-90 40 CFR 86.113-94
 Service Accum: Std AMA Mod AMA Mfr ADP Other (specify): ADF(CNG); C/A GM DF(GAS)
 NMOG Test Procedure: N/A Std Equip X R/L Test Proc: SHED N/A Pt Source N/A
 Hybrid: Type A B C , APU Cycle (e.g., Otto, Diesel, Turbine): N/A
 Engine Configuration: V8 Displacement: 5.7 / Liters 350 / Cubic Inches
 Valves per Cylinder: 2 Rated HP 215 HP @ 4500 RPM (CNG); 255 HP @ 4600 RPM (GAS)
 Engine: Front X Mid Rear Drive: FWD RWD X 4 WD-FT 4WD-PT
 Exhaust ECS (e.g., MFI, EGR, TC, CAC): 2TWC / 2HO2S(2) / EGR / SFI / TBI
 (use abbreviations per SAE J1930 SEP91)

Engine Code (also list CA/49ST/ 50ST)	Vehicle Models (if coded see attachment)	Trans. (M5, A4, etc.)	ETW or Test Wt.	DPA or RLHP	Ignition (ECM/PCM) Part No.	EGR System Part No.	Catalytic Converter Part No.
01 (50ST)	GM Sierra Chevrolet C- Pickup	A4	7000	15.3	16213205 (BNHR) / 16256465-OPER 16256475-ENG 16243559-TRANS	17096188	25160620