

Superseded by E.O. D-302

(Page 1 of 2)

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-131
Relating to Exemptions under Section 27156
of the Vehicle Code

AZ INDUSTRIES, INCORPORATED
"POLARION-X" DEVICE

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle 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-45-5;

IT IS ORDERED AND RESOLVED: That the installation of the "Polarion-X" device manufactured by AZ Industries, Incorporated has been found not to reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1982 and older model-year carbureted gasoline powered motor vehicles.

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the device manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale, or advertise any component of a kit as an individual device.

This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE "POLARION-X" DEVICE.

No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

"43644. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 28th day of June, 1983.



K. D. Drachand, Chief
Mobile Source Control Division

STATE OF CALIFORNIA

AIR RESOURCES BOARD

EVALUATION OF AZ INDUSTRIES, INCORPORATED'S
POLARION-X DEVICE IN COMPLIANCE WITH THE
REQUIREMENTS FOR EXEMPTION FROM THE PROHIBITIONS IN
SECTION 27156 OF THE CALIFORNIA VEHICLE CODE

MAY 31, 1983

Issue Date: May 31, 1983

EVALUATION OF AZ INDUSTRIES, INCORPORATED'S
POLARION-X DEVICE IN COMPLIANCE WITH THE
REQUIREMENTS FOR EXEMPTION FROM THE PROHIBITIONS IN
SECTION 27156 OF THE CALIFORNIA VEHICLE CODE

by

Mobile Source Control Division

State of California
Air Resources Board
9528 Telstar Avenue
El Monte, California
91731

(This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

AZ Industries, Incorporated, of 28065 Diaz Road, Temecula, CA 92390, applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code for their magnetic "Polarion-X" device. The applicant has requested that exemption be granted for all vehicles equipped with carbureted gasoline engines, excluding diesel-powered vehicles and fuel injected vehicles.

Two 1982 model-year vehicles were used for the evaluation of this device. The vehicles were tested using back-to-back (baseline and with-device) CVS-75 tests. The test data submitted by the independent laboratory (contracted by the applicant) showed the following:

1. The CVS-75 test results indicate that the "Polarion-X" device has little effect on the vehicle's exhaust emissions.
2. The CVS-75 test data also show that the device has little effect on fuel economy of the test vehicles.

Since the use of the device does not have any adverse effect on exhaust emissions, the staff recommends that the Board exempt the device from the prohibitions in Vehicle Code Section 27156 by adopting Executive Order D-131.

CONTENTS

	<u>Page Number</u>
<u>SUMMARY</u>	i
<u>CONTENTS</u>	ii
I. <u>INTRODUCTION</u>	1
II. <u>CONCLUSION</u>	1
III. <u>RECOMMENDATION</u>	1
IV. <u>DEVICE DESCRIPTION</u>	2
V. <u>DEVICE FUNCTION</u>	2
VI. <u>EMISSION AND FUEL ECONOMY TEST</u>	2
VII. <u>TEST RESULTS</u>	3
VIII. <u>DISCUSSION OF TEST RESULTS</u>	4
<u>APPENDIX</u>	
A. Polarion-X Detail	5
B. Fairway Environmental Engineering Test Report	6

State of California
AIR RESOURCES BOARD

May, 1983

Staff Report

Evaluation of AZ Industries, Incorporated's "Polarion-X" device for Compliance with the Requirements of Section 27156 of the California Vehicle Code.

I. INTRODUCTION

AZ Industries, Incorporated, 28065 Diaz Road, Temecula, CA 92390, has submitted an application requesting an exemption from the prohibitions of Section 27156 of the California Vehicle Code for its magnetic "Polarion-X" device. The device is designed for installation on all gasoline-powered engines with conventional carburetors except for the following:

1. All diesel-powered vehicles.
2. All fuel injected vehicles

II. CONCLUSION

The ARB staff found no evidence that the "Polarion-X" device will have a significant adverse effect on emissions from a motor vehicle. The test results do not show any appreciable fuel economy benefits that can be attributed to the device. The applicant has agreed to remove unsubstantiated fuel economy claims from the company's letterhead and all advertisements in California.

III. RECOMMENDATION

Based on the information and the test data submitted, the staff recommends that the Board exempt the "Polarion-X" device from the prohibitions in Vehicle Code Section 27156. The staff, therefore, recommends the adoption of Executive Order D-131.

IV. DEVICE DESCRIPTION

The "Polarion-X" is a magnetic fuel system modification device. It is designed to be installed in the fuel line between the fuel pump outlet port and the carburetor inlet port. According to the manufacturer's installation instruction, the device should not touch the engine or any metal parts in the engine compartment.

This device consists of a pair of elongated ceramic magnets, an outer housing, and a pair of end caps. The magnets are spaced from each other along their length thus providing a passage-way with a cross-sectional area of approximately 0.031 sq. in. for the fuel to flow by. The individual magnets are magnetized to have one pole extending along one longitudinal face and the other pole extending along the opposite longitudinal face. The pair of magnets are housed within a square casing of non-magnetic material with like poles facing each other. Each end cap has an integral tapered fitting for connection with the fuel line. The device is shown in detail in Appendix A.

V. DEVICE FUNCTION

The applicant claims that the "Polarion-X" device is the product of years of extensive research into the magnetic treatment of hydrocarbon fuels and internal combustion engines. When installed in series with the vehicle's engine fuel system, the device will alter the ion polarities of the fuel to improve vaporization, air/fuel mixture, and combustion rate, thereby improving engine performance and gas mileage.

VI. EMISSION AND FUEL ECONOMY TEST

The Air Resources Board (ARB) requested laboratory test data from the applicant to substantiate the claimed beneficial effect by the use of the "Polarion-X" device. Two vehicles were used by the applicant for their

testing. The tests were performed at Fairway Environmental Engineering, in Torrance, California.

The comparative emission tests (baseline versus with-device tests) were conducted in accordance with the cold-start CVS-75 test procedure. The baseline tests were run with the vehicle engine set to the vehicle manufacturer's specifications.

The description of the two test vehicles are given below:

<u>Test Vehicle Description</u>	<u>Vehicle No. 1</u>	<u>Vehicle No. 2</u>
Make	Chevrolet Malibu	Datsun B-210
Model-Year	1982	1982
Vehicle Identification Number	1G1AW69A5CR146114	JN1PB02S9CU685638
Engine Size (L)	V-6, 3.8	I-4, 1.2
Carburetor (No. of BBL)	2-BBL*	1-BBL*
Transmission	3-Speed Automatic	3-Speed Automatic
Emission Controls**	AIP, EGR, TWC & CL	AIV, EGR, OC

*BBL - Barrel

**Emission Controls:

AIP - Air Injection, Pump

AIV - Air Injection, Valve

CL - Closed Loop

EGR - Exhaust Gas Recirculation

OC - Oxidation Catalyst

VII. TEST RESULTS

The test results are shown in the following tables:

Table 1
1982 Chevrolet Malibu
Cold-Start CVS-75 Test

<u>Test Condition</u>	<u>Exhaust Emissions, gm/mi</u>			<u>Fuel Economy</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	<u>MPG</u>
Baseline	0.28	8.84	0.60	17.18
Device Test	0.30	8.51	0.47	17.50

Table 2
1982 Datsun B-210
Cold-Start CVS-75 Test

<u>Test Condition</u>	<u>Exhaust Emissions, gm/mi</u>			<u>Fuel Economy</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	<u>MPG</u>
Baseline*	0.24	7.10	1.06	21.67
Device Test	0.21	6.46	0.92	22.36

The test report by the Fairway Environmental Engineering is appended to this report (See Appendix B).

VIII. DISCUSSION OF TEST RESULTS

AZ Industries, Incorporated, submitted several testimonials concerning the fuel mileage increase due to the use of the "Polarion-X" device.

The applicant has offered no valid explanation as to the mechanism by which the device can change the molecular structure of the fuel by subjecting it to opposing magnetic field. The ARB staff determined that ceramic materials (cermat) made into magnets and encased within the device, although they can withstand high background temperatures (over 250°F), cannot develop adequate energy to alter the bonding of the molecules of gasoline. Therefore, ionization of fuel will not take place as claimed by the applicant.

The CVS-75 test data submitted by Fairway Environmental Engineering indicated that the variations in emissions and the derived fuel economy figures between the comparative tests are within the test variability, indicating the "Polarion-X" device has no effect on emissions and fuel economy of the test vehicles.

* The data of the 1st baseline test were discarded because the roll distance traveled in the dynamometer was shorter than what is specified in the test procedure.

