

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-184-8
Relating to Exemptions Under Section 27156
of the Vehicle Code

MAREMONT EXHAUST PRODUCTS, INC.
"NEW AFTERMARKET THREE-WAY CATALYTIC CONVERTER"

WHEREAS, Vehicle Code Sections 27156 and 38391, and Title 13, California Code of Regulations (hereafter "CCR") Section 2222(h), authorize the California Air Resources Board (ARB) and its Executive Officer to exempt new aftermarket catalytic converters from the prohibitions of Vehicle Code Section 27156.

WHEREAS, Maremont Exhaust Products, Inc. of 2400 Industrial Park, Loudon, Tennessee 37774, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their new aftermarket three-way catalytic converter (TWC) for the following application:

<u>Converter Type</u>	<u>Use</u>	<u>Part Number</u>	<u>Max. Eng. Size</u>	<u>Max. Test Wt.</u>
TWC + OC	TWC	28811, 28812, 28813	3.8L (231 CID)	4,500 lbs.

The catalysts can be used to replace non-functioning original equipment manufacturer (OEM) catalysts on vehicles that are no longer under vehicle manufacturer's emission control systems warranty.

WHEREAS, pursuant to the authority vested in the Executive Officer by Health and Safety Code Section 39515 and in the Chief, Mobile Source Division by Health and Safety Code Section 39516 and Executive Order G-45-9, the ARB finds that the above aftermarket catalytic converters comply with the California Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h). Emission performance of the catalytic converter was based on durability mileage accumulation of 25,000 miles using the AMA durability driving schedule (Reference Appendix IV, Title 40, part 86, Code of Federal Regulations (June 28, 1977)).

IT IS HEREBY RESOLVED that the above catalytic converter is exempt from the prohibitions in Vehicle Code Section 27156 for installation on the approved application vehicles subject to the following conditions:

1. No changes are permitted to the converters as described in the application for exemption. Any changes to the converter or any of its components, and other factors addressed in this order must be evaluated and approved by the ARB prior to marketing in California.
2. Marketing of the converter using identifications other than those shown in the exemption application, and in this Executive Order, or marketing of the converter for application other than the ones listed in the submitted application catalog shall be prohibited unless prior approval is obtained from the ARB. Exemption of this products shall not be construed as an exemption to sell, offer for sale, or advertise any components of the converter as individual devices.

3. Any oral or written references to this Executive Order or its content by Maremont Exhaust Products, Inc., its principals, agents, employees, distributors, dealers, or other representatives must include the disclaimer that the Executive Order or the exemption it provides is not an endorsement or approval of any emissions reduction claims for the catalytic converter and is only a finding that the converter are exempt from the prohibitions of Vehicle Code Section 27156.
4. Upon installation, the catalytic converter must carry a manufacturer's warranty for 25,000 miles on the substrates and 50,000 miles or five years on the shell.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after ten day written notice of intention to revoke it, during which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request, and the order may not be revoked until a determination is made, after the hearing, that grounds for revocation exist.

Executed at El Monte, California, this 12th day of June 1995.


R.B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF MAREMONT EXHAUST PRODUCTS, INC. NEW AFTERMARKET THREE-WAY
CATALYTIC CONVERTER FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE
SECTION 27156, AND TITLE 13, CALIFORNIA CODE OF REGULATIONS,
SECTION 2222(h)

June 1995

EVALUATION OF MAREMONT EXHAUST PRODUCTS, INC. NEW AFTERMARKET THREE-WAY
CATALYTIC CONVERTER FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE
SECTION 27156, AND TITLE 13, CALIFORNIA CODE REGULATIONS,
SECTION 2222(h)

by

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(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

Maremont Exhaust Products, Inc. (Maremont) of 2400 Industrial Park Boulevard, Loudon, Tennessee 37774, has applied for an exemption of their new aftermarket three-way catalytic converter (TWC) from the prohibitions in Vehicle Code Sections 27156 and 38391 in accordance with California regulations on new aftermarket catalytic converters. The new catalyst was aged using two mileage accumulation vehicles of 5.0L and 4,500 lbs. test weight. The new converter was designed as a three-way plus oxidation type, and carry-over tests were conducted using a 1994 Pontiac Bonneville with engine displacement/test weight limits of 3.8L/4,500 lbs for TWC application.

Emissions data submitted by the applicant show that the catalytic converter meets the requirements of Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h) for the stated application. Based on the above, the staff recommends that the exemption be granted as requested and that Executive Order D-184-8 be issued.

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CATALYTIC CONVERTER FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE
SECTION 27156, AND TITLE 13, CALIFORNIA CODE OF REGULATIONS
SECTION 2222(h)

I. INTRODUCTION

Maremont Exhaust Products, Inc. (Maremont) of 2400 Industrial Park Boulevard, Loudon, Tennessee 37774, has applied for an exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their new aftermarket three-way catalytic converter (TWC) in accordance with California regulations on new aftermarket catalytic converters. The new aftermarket TWC is intended for use on light-duty vehicles as shown below:

<u>Part Numbers</u>	<u>Max. Eng.</u> <u>Size</u>	<u>Max. Veh.</u> <u>Wt.</u>
28811,28812,28813	3.8L	4,500 lbs.

The catalyst was designed as a three-way plus oxidation catalytic converter (TWC + OC) type; however, when tested for TWC + OC application using a vehicle with 5.0L/4,500 lbs. parameters, it did not meet California's conversion efficiency requirements.

II. CONCLUSION

The applicant has submitted all the required information, and based on the submitted exhaust emissions test data, and ARB's confirmatory tests results, the staff concludes that the catalytic converter meets the criteria set forth in Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h) for the stated applications.

III. RECOMMENDATION

Staff recommends that the exemption be granted as requested and that Executive Order No. D-184-8 be issued, permitting the advertisement, sale and installation of the new aftermarket catalytic converter on applicable vehicles.

IV. DEVICE DESCRIPTION

Maremont's new aftermarket TWC + OC contains two substrates. The front reducing substrate is coated with palladium and rhodium in the ratio of 5:1, the rear oxidizing substrate is coated with palladium only. Air tube is not required between the substrates for the TWC application. Each substrate measures 3.15 inches along the minor axis, 4.75 inches along the major axis, 2.12 inches long, and has a volume of 27.0 cubic inches. Front and rear metal loading is in the ratio of 1:2. The substrates are enclosed in a stainless steel shell. The substrates are wrapped with compressed intumescent mat to prevent vibration and exhaust gases from by-passing the catalyst. A heat shield of aluminized steel is welded to the converter shell to protect the vehicle underbody from heat. The catalytic converter may be sold as a unit with installation instructions and kits as shown in Maremont's application catalog. It is also sold with a warranty for 25,000 miles on the substrates and five years or 50,000 miles on the container or shell.

V. DEVICE EVALUATION

Maremont submitted data from testing conducted by Environmental Testing Corporation (ETC), Orange, California. The two test converters were aged using vehicles powered by a 5.0L engine. The test vehicles have equivalent test weight (ETW) of 4,500 lbs. Emissions tests were conducted on the following vehicle:

<u>Application</u>	<u>Emission Test Vehicle</u>	<u>Engine Size</u>	<u>ETW</u>
TWC	1994 Bonneville	3.8L	4,500 lbs.

The emission test vehicle was ballasted in order to obtain the ETW of 4,500 lbs. Upon conclusion of testing at ETC, the Air Resources Board (ARB)

conducted confirmatory tests with the two aged catalysts at Haagen-Smit Laboratory, El Monte, California, for the TWC application. The retest at the ARB was observed by a representative of Maremont. Results from the retests were averaged with the first test results from ETC and ARB to obtain the final conversion efficiencies. The test results and conversion efficiencies for the converter are shown below:

ETC, Orange, California

	<u>Simulator</u>	<u>Cat.#92-A</u>	<u>TWC</u> <u>Cat.#92-B</u>	<u>Avg Eff.</u>
HC (g/mi)	1.905	0.263	0.248	86.6%
CO (g/mi)	12.417	2.962	2.851	76.6%
NOx(g/mi)	3.132	1.106	1.103	64.8%

Haagen-Smit Laboratory, El Monte

	<u>Simulator</u>	<u>Cat.#92-A</u>	<u>TWC + OC</u> <u>Cat.92-B</u>	<u>Avg. Eff.</u>
HC (g/mi)	2.081	0.277	0.265	87.0%
CO (g/mi)	26.457	3.079	2.929	88.6%
NOx(g/mi)	3.098	0.901	0.770	73.0%

Average Conversion Efficiencies for All Tests

	<u>Independent Laboratory</u>	<u>Haagen-Smit Laboratory (ARB)</u>
HC:	$(86.6 + 87.0)/2 = 86.8\%$	$(87.0 + 82.4)/2 = 84.7\%$
CO:	$(76.6 + 77.0)/2 = 76.8\%$	$(86.6 + 65.4)/2 = 76.0\%$
NOx:	$(64.8 + 64.8)/2 = 64.8\%$	$(73.0 + 78.1)/2 = 75.5\%$

The exemption of the new Maremont's catalytic converter for TWC application is based on the combined test results meeting the required minimum conversion efficiencies.