

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-193-15  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

CAR SOUND EXHAUST SYSTEMS, INC.  
"THREE-WAY PLUS OXIDATION 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 converter from the prohibitions of Vehicle Code Section 27156.

WHEREAS, Car Sound Exhaust Systems, Inc. (Car Sound) of 22961 Arroyo Vista, Rancho Santa Margarita, California 92688, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 to market their aftermarket series 94000 three-way plus oxidation catalytic converter (TWC + OC) for the following application:

<u>Type</u>	<u>Use</u>	<u>Series No.</u>	<u>Max. Eng. Size</u>	<u>Max. Test Veh. Wt.</u>
TWC + OC	TWC + OC	94000	5.9L (360 CID)	6,000 lbs.

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 converter complies 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 bench-aging using Johnson Matthey Catalytic Systems Division's bench-aging procedure EDC53 for 25 hours in lieu of 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 catalytic converter as described in the application for exemption. Any changes to the catalytic 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 catalytic converter using identifications other than those shown in the exemption application, and in this Executive Order, or marketing of the catalytic converter for application other than the ones shown in this Executive Order shall be prohibited unless prior approval is obtained from the ARB. Exemption of this product shall not be construed as an exemption to sell, offer for sale, or advertise any components of the catalytic converter as individual devices.

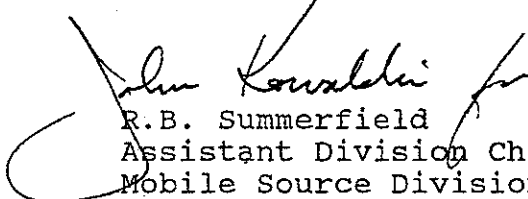
CAR SOUND EXHAUST SYSTEMS, INC.  
"AFTERMARKET THREE-WAY PLUS OXIDATION  
CATALYTIC CONVERTER"

EXECUTIVE ORDER D-193-15  
(Page 2 of 2)

3. Any oral or written references to this Executive Order or its content by Car Sound Exhaust System, 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 catalytic converter is exempt from the prohibitions of Vehicle Code Section 27156.
4. Car Sound Exhaust System, Inc. installation instructions for the new catalytic converter must conform to requirements in Paragraphs I and IX of California Evaluation Procedures for New Aftermarket Non-Original Equipment Catalytic Converters.
5. 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 and end pipes.

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 10<sup>th</sup> day of September 1996.

  
R.B. Summerfield  
Assistant Division Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC.'s NEW AFTERMARKET  
THREE-WAY PLUS OXIDATION CATALYTIC CONVERTER FOR EXEMPTION  
FROM THE PROHIBITIONS IN VEHICLE CODE SECTION 27156, AND  
TITLE 13, CALIFORNIA CODE OF REGULATIONS, SECTION 2222(h)

September 1996

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TITLE 13, CALIFORNIA CODE OF 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

Car Sound Exhaust System, Inc. (Car Sound) of 22961 Arroyo Vista, Rancho Santa Margarita, California 92688, has applied for an exemption of their new aftermarket three-way plus oxidation catalytic converter (TWC + OC) from the prohibitions in Vehicle Code Sections 27156 and 38391, in accordance with California regulations on new aftermarket catalytic converters. The two test catalysts were aged using a EDC53 bench-aging procedure developed by Johnson Matthey Catalyst Division (Johnson Matthey) and approved by the Air Resources Board (ARB). The substrates manufactured by Johnson Matthey are of ceramic monolith type. The front substrate contains palladium and rhodium, and the rear substrate contains palladium. The new converter is limited to vehicles powered by a 5.9L with equivalent test weight of 6,000 lbs. for TWC + OC application.

Emissions data submitted by the applicant and from ARB's confirmatory tests 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-193-15 be issued.

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 EVALUATION</u>	2

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TITLE 13, CALIFORNIA CODE OF REGULATIONS SECTION 2222(h)

I. INTRODUCTION

Car Sound Exhaust System, Inc. (Car Sound) of 22961 Arroyo Vista, Rancho Santa Margarita, California 92688, has applied for an exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their new aftermarket three-way catalytic converter (TWC + OC) in accordance with California regulations on new aftermarket catalytic converters. The ceramic monolith substrate of the new catalyst was manufactured by Johnson Matthey Catalyst Division (Johnson Matthey). The new aftermarket catalyst is intended for the following vehicle application:

<u>Series Number</u>	<u>Max. Eng. Size</u>	<u>Max. Veh. Test Wt.</u>
94000	5.9L	6,000 lbs.

Car Sound intends to market the new TWC + OC as a replacement for applicable vehicles whose manufacturers' warranty has expired and the need for replacement of the original equipment manufacturer (OEM) catalyst has been established and documented.

II. CONCLUSION

The applicant has submitted all the required information, and based on the applicant's submitted exhaust emissions test data and ARB's confirmatory test results, the staff concludes that the new aftermarket catalyst 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-193-15 be issued, permitting the advertisement, sale, and installation of the new aftermarket catalyst on applicable vehicles.

IV. DEVICE DESCRIPTION

Car Sound's new aftermarket TWC + OC contains two oval ceramic monolith substrates. The front reduction substrate is coated with palladium and rhodium, and the rear reduction substrate is coated with palladium. Each substrate has a volume of 24.6 cubic inches. The substrates are contained in outer stainless steel shell by wrapping them with Carborundum Expanding Paper. Aluminized heat shield is welded to the upperside of the converter to protect vehicle underbody from excessive heat. The catalyst may be sold as a unit with installation instructions or may be used in customized direct fit exhaust. It is also sold with a warranty for 25,000 miles on the substrate and five years or 50,000 miles on the container or shell.

V. DEVICE EVALUATION

Car Sound submitted data from testing conducted by Automotive Testing and Development Services, Inc. (ATDS), Ontario, California. Emissions tests were conducted on the following vehicle:

<u>Application</u>	<u>Emission Test Vehicle</u>	<u>Engine Size</u>	<u>ETW</u>
TWC + OC	1989 Dodge B250 Ram Van	5.9L	6,000 lbs.

Two test catalysts labeled 704X and 704Y were tested. Testing consisted of two cold-start CVS-75 with a simulator ("dummy" catalyst), followed by two cold-start CVS-75 for each of the test catalysts. The Air Resources Board (ARB) conducted confirmatory tests on the new aftermarket catalyst at the ARB's Haagen-Smit Laboratory in El Monte, California, using the 1989 5.9L Dodge B250 Ram Van. The test results for the catalyst are shown below:



ATDS, Ontario, California

	<u>Simulator</u>	<u>Converter 1</u>	<u>Converter 2</u>	<u>Avg. Conv. Eff.</u>
HC (g/mi)	2.622	0.492	0.479	81.4%
CO (g/mi)	34.395	8.365	8.976	74.8%
NOx (g/mi)	2.642	1.118	0.999	59.9%

Haagen-Smit Laboratory, El Monte, California

	<u>Simulator</u>	<u>Converter 1</u>	<u>Converter 2</u>	<u>Avg. Conv. Eff.</u>
HC (g/mi)	2.746	0.433	0.503	82.9%
CO (g/mi)	32.768	5.946	7.251	79.8%
NOx (g/mi)	2.294	0.828	0.975	60.7%

The above test results meet the minimum requirements of the California regulations on new aftermarket catalytic converters.