

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-193-23

Relating to Exemptions under Section 27156
of the Vehicle Code

Car Sound Exhaust System, Inc.

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 System, 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 95500 three-way catalytic converter (TWC) for the following applications, except for vehicles equipped with an on-board diagnostic II (OBD-II) system (Title 13, CCR, Section 1968.1):

Model-year	Make	Model	Engine Size	Part Number	Type
1988-95	Chevrolet/GMC	C/K 2500	5.7L (350 CID)	95506	Pickup
1988-95	Chevrolet/GMC	C/K 3500	5.7L (350 CID)	95506	Pickup
1988-95	Chevrolet/GMC	C/K 2500	7.4L (454 CID)	95509	Pickup
1991-95	Chevrolet/GMC	C/K 3500	7.4L (454 CID)	95509	Pickup
1988-95	Chevrolet/GMC	G/V 2500	5.7L (350 CID)	95506	Van
1991-95	Chevrolet/GMC	G/V 3500	5.7L (350 CID)	95506	Van
1988-95	Chevrolet/GMC	G/V 2500	7.4L (454 CID)	95509	Van
1991-95	Chevrolet/GMC	G/V 3500	7.4L (454 CID)	95509	Van
1988-95	Chevrolet/GMC	Suburban 3500	5.7L (350 CID)	95509	SUV
1988-95	Chevrolet/GMC	Suburban 3500	7.4L (454 CID)	95509	SUV
1991-95	Chevrolet/GMC	P30 Series	6.0L (366 CID)	95509	Truck
1991-95	Chevrolet/GMC	P30 Series	7.4L (454 CID)	95509	Truck
1992-95	Dodge	W2500/3500	5.9L (360 CID)	95509	Van
1992-95	Dodge	D2500/3500	5.9L (360 CID)	95509	Pickup

WHEREAS, pursuant to the authority vested in the Executive Officer by Health and Safety Code Section 39515 and in the Chief, Mobile Source Operations 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 of the catalyst for 90 hours using AlliedSignal Environmental Catalyst's (ASEC's) ARL-102 cycle in lieu of the AMA driving cycle (Reference Appendix IV, Title 40, part 86, Code of Federal Regulations (June 28, 1977)).

WHEREAS, emissions tests conducted at Automotive Testing and Development Services (ATDS), Ontario, California, using a 1991 Chevrolet 7.4L 3500HD Pickup Truck showed the following conversion efficiencies which meet the minimum requirements for new aftermarket catalytic converters:

<u>Pollution Component</u>	<u>TWC</u>
HC: Min. Requirement	70%
Car Sound's series 95500	79.6
CO: Min. Requirement	70
Car Sound's series 95500	72.6
NOx: Min. Requirement	50
Car Sound's series 95500	76.8

IT IS HEREBY RESOLVED that the above catalytic converter is exempt from the prohibitions in Vehicle Code Section 27156 for installation on the applicable 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.
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 emission 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.'s 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 21st day of February 2002.



Allen Lyons, Chief
New Vehicles/Engine Programs Branch

EVALUATION SUMMARY

Manufacturer Name: Car Sound Exhaust System, Inc.

Name of Device: Series 95500 Three-way catalytic converter (TWC).

Background:

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 Section 27156 of the California Vehicle Code (VC) for its series 95500 new aftermarket TWC. The new aftermarket catalytic converter is for installation on pre-OBD-II vehicles listed below with the application limits of 7.4L engine size and 13,000 pounds equivalent test weight (ETW). The corresponding maximum Gross Vehicle Weight Rated is 15,620 pounds.

Model-year	Make	Model	Engine Size	Part Number	Type
1988-95	Chevrolet/GMC	C/K 2500	5.7L (350 CID)	95506	Pickup
1988-95	Chevrolet/GMC	C/K 3500	5.7L (350 CID)	95506	Pickup
1988-95	Chevrolet/GMC	C/K 2500	7.4L (454 CID)	95509	Pickup
1991-95	Chevrolet/GMC	C/K 3500	7.4L (454 CID)	95509	Pickup
1988-95	Chevrolet/GMC	G/V 2500	5.7L (350 CID)	95506	Van
1991-95	Chevrolet/GMC	G/V 3500	5.7L (350 CID)	95506	Van
1988-95	Chevrolet/GMC	G/V 2500	7.4L (454 CID)	95509	Van
1991-95	Chevrolet/GMC	G/V 3500	7.4L (454 CID)	95509	Van
1988-95	Chevrolet/GMC	Suburban 3500	5.7L (350 CID)	95509	SUV
1988-95	Chevrolet/GMC	Suburban 3500	7.4L (454 CID)	95509	SUV
1991-95	Chevrolet/GMC	P30 Series	6.0L (366 CID)	95509	Truck
1991-95	Chevrolet/GMC	P30 Series	7.4L (454 CID)	95509	Truck
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1992-95	Dodge	D2500/3500	5.9L (360 CID)	95509	Pickup

Recommendation:

Grant exemption to Car Sound as requested, and issue Executive Order D-193-23.

Device Description:

Car Sound's new aftermarket TWC is designed to use three oval ceramic monolith substrates. The substrates are coated with platinum and rhodium in the ratio of 2:1. The dimensions of the substrates are 5.70 inches for the major axis, 3.20 inches for the minor axis, and 2.93 inches in length. The volume of each substrate is 46.3 cubic inches. The substrates are contained in a shell constructed from 409-grade stainless steel. The substrates are wrapped with a Fiberfrax XPE Expanding Paper, to prevent vibration and exhaust by-pass. The shell is sealed by seam weld, and a piece of aluminized heat shield is spot-welded to the upper side of the converter to protect the vehicle underbody from excessive heat. The catalytic converter will be sold as a universal fit with installation instructions. It comes with a warranty for 25,000 miles on the substrates, and five years or 50,000 miles on the container or shell, and the end pipes.

AlliedSignal Environmental Catalyst (ASEC) of Tulsa, Oklahoma, is the catalyst supplier for Car Sound's series 95500 TWC.

Discussion/Basis for Exemption Recommendation:

Car Sound submitted data on the series 95500 TWC from testing conducted at Automotive Testing and Development Services (ATDS) laboratory, Ontario, California. ASEC performed the catalyst rapid aging using its ARL-102 for 90 hours. Emission tests were conducted on a 1991 Chevrolet 7.4L 3500HD long bed pickup truck. An additional load of 440 pounds (lbs.) was added to the vehicle to bring the equivalent test weight to 13,000 lbs. as desired by the applicant.

The evaluation of the new aftermarket catalytic converter is solely based on the bench-aging by ASEC and emission tests conducted at ATDS. The limits of application of Car Sound's series 95500 TWC will be 7.4L/13,000 lbs., with the corresponding maximum gross vehicle weight rating (GVWR) of 15,620 lbs. The test catalysts were labeled T1020 A1 and T1020 A2. Testing consisted of two cold-start CVS-75 tests with a simulator ("dummy" catalyst), followed by two cold-start CVS-75 tests for each of the test catalysts. The average of the two test results for each test catalyst was used to calculate the conversion efficiency. The overall conversion efficiency for the catalyst model is the average conversion efficiency of the two test catalysts. The test results for the series 95500 catalyst are shown below:

ATDS, Ontario, California

	<u>Simulator</u>	<u>Catalyst T1020 A1</u>	<u>Catalyst T1020 A2</u>	<u>Conv. Eff.</u>
	<u>Average</u>	<u>Average</u>	<u>Average</u>	<u>Average</u>
<u>TWC</u>				
HC (g/mi)	3.155	0.653	0.637	79.6%
CO (g/mi)	52.950	14.092	14.975	72.6%
NOx (g/mi)	8.302	1.980	1.870	76.8%

The above test results meet the minimum requirements of the California regulations on new aftermarket catalytic converters. The Air Resources Board (ARB) did not conduct confirmatory tests on the new aftermarket catalytic converter.