

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-466  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

UNLIMITED TECHNOLOGIES INTERNATIONAL, INC.  
"THREE-WAY CATALYTIC CONVERTER SERIES SA090"

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, Unlimited Technologies International, Inc. (UTI) of 8632 Wilkinson Blvd, Charlotte, North Carolina 28214, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 to market their aftermarket series SA090 three-way catalytic converter (TWC), with or without "ignitor" metal screen, for the following application, except for vehicles equipped with an on-board diagnostic II system:

Type	Use	Series No.	Max. Eng. Size	Max. Test Veh. Wt.
TWC	TWC	SA090	5.7L (350 CID)	4,500 lbs.
TWC	OC	SA090	5.7L (350 CID)	4,500 lbs.

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 using AlliedSignal Environmental Catalyst (ASEC) bench-aging cycle ARL-102, accepted by the ARB for this application to be equivalent to 25,000 miles durability mileage accumulation using AMA driving cycle (Reference Appendix IV, Title 40, part 86, Code of Federal Regulations (June 28, 1977)).

Whereas, emissions tests conducted at Northern California Diagnostic Laboratories (NCDL), Napa, California, showed the following conversion efficiencies which meet the minimum requirements for new aftermarket catalytic converters:

Pollution Component	TWC Catalyst Application Test Results	
	Without Ignitor	With Ignitor
HC: Min. Requirement	70%	70%
UTI's series SA090	87.6	87.7
CO: Min. Requirement	70	70
UTI's series SA090	83.5	83.9
Nox: Min. Requirement	60	60
UTI's series SA090	83.1	82.8

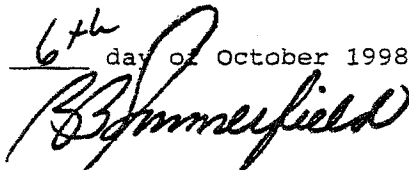
IT IS HEREBY RESOLVED that the above catalytic converter is exempt from the prohibitions in Vehicle Code Section 27156 for installation on the approved application vehicles subject to the following conditions:

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.
3. Any oral or written references to this Executive Order or its content by Unlimited Technologies International, 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. Unlimited Technologies International, 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.
6. Unlimited Technologies International, Inc. has elected to conduct emission testing of one production catalytic converter, at a minimum, for every 5,000 converters produced, in lieu of their quality control procedures as required in Paragraph IX of California Evaluation Procedures for New Aftermarket Non-Original Equipment Catalytic Converters. Their production quantity data must be submitted to the ARB on semi-annual basis on or before February 15 for the first period, and on or before August 15 for the second period.

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 6<sup>th</sup> day of October 1998.

  
R.B. Summerfield, Chief  
Mobile Source Operations Division

EVALUATION OF UNLIMITED TECHNOLOGIES INTERNATIONAL, INC.'S SERIES SA090  
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)

I. INTRODUCTION

Unlimited Technologies International, Inc. (UTI) of 8632 Blvd, Charlotte, North Carolina 28214, has applied for an exemption from the prohibitions in Vehicle Code Section 27156 for their new series SA090 aftermarket three-way catalytic converter (TWC) in accordance with California regulations on new aftermarket catalytic converters. The ceramic monolith substrate of the new catalyst was manufactured and bench-aged by AlliedSignal Environmental Catalyst (ASEC). The new aftermarket catalyst is intended for the following vehicle application:

<u>Converter Type</u>	<u>Converter Use</u>	<u>PN/Series</u>	<u>Max. Eng. Size</u>	<u>Max. Veh. Test Wt.</u>
TWC	TWC	SA090	5.7L	4,500 lbs.
TWC	OC	SA090	5.7L	4,500 lbs.

The new catalytic converter may be sold with a metal screen called "ignitor" in front of the substrate. UTI intends to market the new TWC as a replacement for catalytic converters on applicable vehicles whose manufacturers' warranty has expired and the need for replacement of the original equipment manufacturer (OEM) catalytic converter has been established and documented. Excluded from the application are those vehicles equipped with an On-Board Diagnostic II (OBD-II) system.

II. CONCLUSION

The applicant has submitted all the required information, and based on the applicant's submitted exhaust emissions test data, 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 application.

III. RECOMMENDATION

Staff recommends that the exemption be granted as requested and that Executive Order No. D-466 be issued, permitting the advertisement, sale, and installation of the new aftermarket catalyst on applicable vehicles.

IV. DEVICE DESCRIPTION

UTI's new aftermarket TWC is designed to use oval ceramic monolith substrate. The substrate is coated with platinum and rhodium in 5:1 ratio. Each substrate measures 3.0 inches along the major axis, 6.0 inches along the minor axis, and 6.0 inches in length, and has a volume of 93 cubic inches. The active constituents of the washcoat are alumina, ceria, and barium. The substrate is

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October 1998

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

Unlimited Technologies International, Inc. (UTI) of 8632 Wilkinson Blvd, Charlotte, North Carolina 28214, has applied for an exemption of their new series SA090 aftermarket three-way catalytic converter (TWC) from the prohibitions in Vehicle Code Sections 27156, in accordance with California regulations on new aftermarket catalytic converters. The two test catalysts were aged using AlliedSignal Environmental Catalyst (ASEC's) bench-aging cycle, ARL-102. Each converter contains one substrate of ceramic monolith type. The substrate is coated with platinum and rhodium in 5:1 ratio. The new catalytic converter may be installed on TWC and OC vehicles powered by an engine of 5.7L or less, and having an equivalent test weight of 4,500 lbs. or less, except for those vehicles equipped with an On-Board Diagnostic II (OBD-II) system. It may also be installed with a metal screen which UTI refers to as "ignitor" located in front of the substrate.

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-466 be issued.

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contained in outer 316L 20 gauge stainless steel shell with Unifrax Corporation's NV type chemiluminescent material or intumescent mat, to prevent vibration and exhaust bypass. The electrically charged screen or "ignitor", which may be installed in front of the substrate, is made of 14 gauge stainless steel. The shell is sealed by seam weld, and bushings are attached by arc welding. The container has a volume of 170 cubic inches. Aluminized soft steel heat shield is spot-welded to the upper and bottom sides of the converter to protect vehicle underbody from excessive heat, and prevent materials on the ground from direct contact with the catalyst shell. The catalyst may be sold as a unit with installation instructions or may be used in customized direct fit exhaust application. 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, and the end pipes.

V. DEVICE EVALUATION

UTI submitted data from testing conducted by Northern California Diagnostic Laboratories (NCDL), Napa, California. The test catalysts were aged by AlliedSignal Environmental Catalyst using their ARL-102 bench-aging cycle. The test catalysts were shipped directly to NCDL where the emissions tests were conducted for three-way (TWC) application using a 1995 Dodge RAM 15000 5.9L at the equivalent test weight (ETW) of 5,500 lbs., which were the certification parameters for the test vehicle selected by UTI. However, the application limits for the new catalyst cannot exceed 5.7L/4,500 lbs. since the catalyst was aged for that application. UTI did not conduct testing on oxidation vehicle; however, the installation of the new catalyst on oxidation is permissible under Paragraph I of California Evaluation Procedures for New Aftermarket Non-Original Equipment Catalytic Converters, for the same application limits as the TWC. Duplicate test set were conducted on the catalyst. The first test was conducted without the "ignitor" incorporated, and the second test was conducted with the "ignitor" incorporated. The test catalysts were labeled as #3 and #4. 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 test results for the catalyst are shown below:

NCDL, Napa, California

TWC - Without Ignitor

	<u>Simulator</u>	<u>Cat #3</u>	<u>Cat #4</u>	<u>Conv. Eff.</u>
	<u>Average</u>	<u>Average</u>	<u>Average</u>	<u>Average</u>
HC (g/mi)	1.853	0.241	0.217	87.6%
CO (g/mi)	21.342	3.651	3.361	83.5%
NOx (g/mi)	6.983	1.223	1.137	83.1%

TWC - With Ignitor

HC (g/mi)	1.853	0.224	0.227	87.7%
CO (g/mi)	21.342	3.343	3.527	83.9%
NOx (g/mi)	6.983	1.225	1.171	82.8%

The above test results show that series SA090 meet the minimum requirements of the California regulations on new aftermarket catalytic converters. The results also show that the "ignitor" has no effect on the performance of the catalyst. Due to time constraints, the ARB did not conduct confirmatory tests on the catalyst.