

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-280-3
Relating to Exemptions Under Section 27156
of the Vehicle Code

AIRTEK, INC. (dba CATCO)
"THREE-WAY PLUS OXIDATION CATALYTIC CONVERTER SERIES 44000"

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, AirTek, Inc. (AirTek) of 4410 W. 37th Avenue, Hobart, Indiana 46342, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 to market their aftermarket series 44000 three-way plus oxidation catalytic converter (TWC + OC) for the following application, except vehicles equipped with OBD II system:

Type	Use	Series No.	Max. Eng. Size	Max. Test Veh. Wt.
TWC + OC	OC	44000	5.9L (360 CID)	5,000 lbs.
TWC + OC	TWC	44000	5.9L (360 CID)	5,000 lbs.
TWC + OC	TWC + OC	44000	5.9L (360 CID)	5,000 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 mileage accumulation using AMA driving cycle (Reference Appendix IV, Title 40, part 86, Code of Federal Regulations (June 28, 1977)), for 25,000 miles.

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.

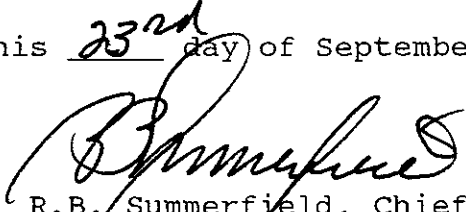
AIRTEK, INC. (dba CATCO)
"AFTERMARKET THREE-WAY PLUS OXIDATION
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3. Any oral or written references to this Executive Order or its content by AirTek, Inc., its principals, agents, employees, distributors, dealers, or other representatives must include 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. AirTek, 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 23rd day of September 1997.


R.B. Summerfield, Chief
Mobile Source Operations Division

State of California
AIR RESOURCES BOARD

EVALUATION OF AIRTEK, 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 1997

EVALUATION OF AIRTEK, 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)

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

AirTek, Inc. (AirTek (dba Catco)) of 4410 W. 37th Avenue, Hobart, Indiana 46342, 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, in accordance with California regulations on new aftermarket catalytic converters. The two test catalysts were aged using two 5.9L Chrysler vehicles ballasted to 5,000 lbs. equivalent test weight on AMA driving cycle. The substrates are of ceramic monolith type. The front and rear substrates both contain palladium and rhodium. The new catalytic converter may be installed on TWC + OC, TWC, and OC vehicles powered by an engine of 5.9L or less, and having an equivalent test weight of 5,000 lbs. or less.

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-280-3 be issued.

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EVALUATION OF AIRTEK, 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)

I. INTRODUCTION

AirTek, Inc. (AirTek) of 4410 37th Avenue, Hobart, Indiana 46342, has applied for an exemption from the prohibitions in Vehicle Code Sections 27156 for their new aftermarket three-way plus oxidation catalytic converter (TWC + OC) in accordance with California regulations on new aftermarket catalytic converters. The ceramic monolith substrates of the new catalyst were manufactured by Alchemy Catalyst, Inc., a company partially owned by AirTek. 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 + OC	TWC + OC	44000	5.9L	5,000 lbs.
TWC + OC	TWC	44000	5.9L	5,000 lbs.
TWC + OC	OC	44000	5.9L	5,000 lbs.

AirTek intends to market the new TWC + OC 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, except vehicles equipped with On-Board Diagnostic System II (OBD-II).

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-280-3 be issued, permitting the advertisement, sale, and installation of the new aftermarket catalyst on applicable vehicles.

IV. DEVICE DESCRIPTION

AirTek's new aftermarket TWC + OC is designed to use oval ceramic monolith substrates. The front and rear substrates are both coated with palladium and rhodium. Each substrate measures 4.75 inches in width, 3.15 inches in height, and 2.10 inches long, and has a volume of 26.77 cubic inches. The substrates are contained in outer 409 stainless steel shell with 3M Interam Mat wrap, to prevent vibration and exhaust by-pass. The shell is sealed by tig weld. Aluminized soft steel heat shield is spot-welded to the upper side 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 substrates, and five years or 50,000 miles on the container or shell, and the end pipes.

V. DEVICE EVALUATION

AirTek submitted data from testing conducted by Roush Laboratories, Garden Grove, California, and California Environmental Engineering (CEE), Santa Ana, California. Mileage accumulation was conducted by Roush Laboratories using a 1976 carbureted 5.9L Chrysler Cordoba, and a 1978 carbureted 5.9L Chrysler Cordoba. The two mileage accumulation vehicles were ballasted in order to achieve the required equivalent test weight of 5,000 pounds. Roush Laboratories also conducted emissions testing for three-way plus oxidation and oxidation applications before the laboratory was shut down. The ARB allowed the

transfer of three-way testing to CEE. Emissions tests were conducted on the following test vehicles approved by the ARB:

<u>Application</u>	<u>Emission Test Vehicle</u>	<u>Engine Size</u>	<u>ETW</u>
TWC + OC	1991 Dodge Ram 350 Van	5.9L	5,000 lbs.
TWC	1994 Dodge Ram Van	5.9L	5,000 lbs.
OC	1978 Chrysler Cordoba	5.9L	5,000 lbs.

The test catalysts were labeled 4000-101 and 4000-102. Testing consisted of two cold-start CVS-75 with a simulator ("dummy" catalyst), followed by three cold-start CVS-75 for each of the test catalysts. Two of the three tests which conformed to required test-to-test variability were selected for calculation of catalyst conversion efficiencies. Due to time constraint, ARB did not conduct confirmatory tests on the new aftermarket catalyst. The test results for the catalyst are shown below:

Roush Laboratory, Garden Grove, California

TWC + OC

	<u>Simulator</u>	<u>Cat 4000-101</u>	<u>Cat 4000-102</u>	<u>Conv. Eff.</u>
	<u>Average</u>	<u>Average</u>	<u>Average</u>	<u>Average</u>
HC (g/mi)	2.312	0.529	0.444	78.9%
CO (g/mi)	41.311	11.668	11.738	71.6%
NOx (g/mi)	1.566	0.729	0.665	55.4%

		<u>OC</u>		
HC (g/mi)	1.897	0.519	0.527	72.4
CO (g/mi)	59.668	3.508	3.167	94.4

CEE, Santa Ana, California

		<u>TWC</u>		
HC (g/mi)	2.906	0.379	0.283	88.6%
CO (g/mi)	23.481	6.375	5.911	73.8%
NOx (g/mi)	4.117	0.953	0.916	77.2%

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