

**State of California  
AIR RESOURCES BOARD**

**EXECUTIVE ORDER DE-06-001-01**

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code Section 39515 and 39616 and Executive Order G-02-003;

Relating to Exemptions under Section 27156 of the Vehicle Code, and Verification under Sections 2700 through 2710 of Title 13 of the California Code of Regulations

Johnson Matthey, Inc.  
Partial Continuously Regenerating Technology (PCRT™) Particulate Filter

ARB has reviewed Johnson Matthey, Inc.'s request for verification of PCRT™ Particulate Filter. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of ARB hereby finds that the PCRT™ Particulate Filter reduces emissions of diesel particulate matter (PM) consistent with a Level 2 device (greater than or equal to 50 percent reductions) (Title 13 California Code of Regulations (CCR) Sections 2702 (f) and (g) and Section 2708). Accordingly, the Executive Officer determines that the system merits verification and, subject to the terms and conditions specified below classifies the PCRT™ Particulate Filter as a Level 2 system, for the applications listed in Table 1 and engine families listed in Attachment 1.

Table 1: Appropriate Applications for the PCRT™ Particulate Filter

Diesel Emission Control Strategy	Application
PCRT™ Particulate Filter	All On-Road Applications only

The aforementioned verification is subject to the following terms and conditions:

- The engines are originally manufactured from model year 1988 through 1993 having the engine family names listed in Attachment 1.
- The engine must not employ exhaust gas recirculation.
- The application must have a duty cycle with an average temperature profile greater than 240 degrees Celsius for 40 percent of the operating cycle.
- The engine must not have a pre-existing original equipment manufacturer oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter.
- The engine must be certified in California for on-road applications.

- Engines manufactured from 1988 – 1990 must be certified at a PM emission level of at most 0.6 grams per brake horsepower-hour (g/bhp-hr).
- Engines manufactured from 1991 – 1993 must be certified at a PM emission level of at most 0.25 g/bhp-hr.
- The engine must be four-stroke.
- The engine can be turbocharged or naturally aspirated.
- The engine can be mechanically or electronically injected.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- Lube oil, or other oil, should not be mixed with the fuel.
- The engine must be operated on diesel fuel with a sulfur content of no more than 15 parts per million (ppm) by weight.
- The product must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the CCR, unless explicitly verified for use with the fuel additive(s).
- The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.
- The other terms and conditions specified below.

IT IS ALSO ORDERED AND RESOLVED: That installation of the PCRT™ Particulate Filter, manufactured by Johnson Matthey, Inc. of 380 Lapp Road, Malvern, Pennsylvania 19355, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the PCRT™ Particulate Filter is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on heavy-duty on-road vehicles listed in Attachment 1.

This exemption is only valid provided the engines meet the aforementioned conditions.

The PCRT™ Particulate Filter consists of a diesel oxidation catalyst followed by a flow through filter substrate. The major components of the PCRT™ Particulate Filter are identified in Attachment 2.

This Executive Order is valid provided that installation instructions for PCRT™ Particulate Filter do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the PCRT™ Particulate Filter, as exempted by ARB, which adversely affect the performance of the vehicle's pollution control system, shall invalidate this Executive Order.

No changes are permitted to the device. The ARB must be notified in writing of any changes to any part of the PCRT™ Particulate Filter. Any changes to the device must be evaluated and approved by ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the PCRT™ Particulate Filter using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from ARB.

This Executive Order shall not apply to any PCRT™ Particulate Filter advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

As specified in the Diesel Emission Control Strategy Verification Procedure (Title 13 CCR Section 2706 (g)), ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

**CA/JMI/2006/PM2/N00/ON/FTF01.**

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Johnson Matthey, Inc. is responsible for honoring the required warranty (Section 2707) and conducting in-use compliance testing (Section 2709).

As of January 1, 2007, systems that increase emissions of nitrogen dioxide (NO<sub>2</sub>) by more than 30 percent of the baseline oxides of nitrogen (NO<sub>x</sub>) emissions will no longer be candidates for verification.

As of January 1, 2009, systems that increase emissions of NO<sub>2</sub> by more than 20 percent of the baseline NO<sub>x</sub> emissions will no longer be candidates for verification.

In addition to the foregoing, ARB reserves the right in the future to review this Executive Order and the exemption and verification provided herein to assure that the exempted and verified add-on or modified part continues to meet the standards and procedures of CCR, Title 13, Section 2222, et seq and CCR, Title 13, Sections 2700 through 2710.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations.

This Executive Order does not release Johnson Matthey, Inc. from complying with all other applicable regulations.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

Executive Order DE-06-001 is hereby superseded and is of no further in force and effect.

Executed at El Monte, California, this 23<sup>rd</sup> day of August 2006.

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Robert H. Cross, Chief  
Mobile Source Control Division

Attachment 1: ARB Approved Engine Families for the PCRT™ Particulate Filter.

Attachment 2: Part Numbers and Model Numbers of the PCRT™ Particulate Filter.