

**State of California  
AIR RESOURCES BOARD**

**EXECUTIVE ORDER DE-04-013-02**

Pursuant to the authority vested in the Air Resources Board 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 Verification under Sections 2700 through 2710 of Title 13 of the California Code of Regulations

Lubrizol Engine Control Systems  
AZ Purifier™ and AZ Purimuffler™

The California Air Resources Board (ARB) has reviewed Lubrizol Engine Control System's request for verification of the AZ Purifier™ and AZ Purimuffler™. Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of the ARB hereby finds that the AZ Purifier™ and AZ Purimuffler™ reduce emissions of diesel particulate matter (PM) consistent with a Level 1 system (greater than or equal to 25 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 AZ Purifier™ and AZ Purimuffler™ as a Level 1 system, for the application listed in Table 1 and engine families listed in Attachment 1.

Table 1: Appropriate Applications for the AZ Purifier™ and AZ Purimuffler™

Diesel Emission Control Strategy	Application
AZ Purifier™ and AZ Purimuffler™	On-road Application

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

**For Cummins and Navistar Engines:**

- The engines are on-road medium heavy-duty diesel engines (model year 1991 to 2003) listed in Attachment 1, Table 1.
- The engine is four-stroke.
- The engine does not include an exhaust gas recirculation system.
- The engine can be turbocharged or naturally aspirated.
- The engine must not have a pre-existing oxidation catalyst.

- The engine must not have a pre-existing diesel particulate filter.
- 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 (e.g. not biodiesel blends or alternative diesel fuels) with a sulfur content of no more than 15 parts per million by weight.
- The product must not be operated with fuel additives, as defined in Section 2701 of Title 13, of the California Code of Regulations, 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.

**For Detroit Diesel Corporation Engines:**

- The engines are originally manufactured from model years 1973 through 1993 listed in Attachment 1, Tables 2 and 3.
- The engine may be manufactured before the adoption of on-road certification regulations in California.
- Engines manufactured before 1988 must be equipped with a backpressure monitor.
- 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) and greater than 0.01 g/bhp-hr.
- Engines manufactured from 1991 - 1993 must be certified at a PM emission level of at most 0.25 g/bhp-hr and greater than 0.01 g/bhp-hr.
- The engine is two-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 (e.g. not biodiesel, biodiesel blends or alternative diesel fuels) with a sulfur content of no more than 350 parts per million by weight.
- The engine must not have a pre-existing oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter.
- 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.

### **For Cummins and Detroit Diesel Corporation Engines:**

- The engines are on-road heavy heavy-duty diesel engines (model year 1991 to 2002) listed in Attachment 1, Table 1-1.
- The engine is four-stroke.
- The engine does not include an exhaust gas recirculation system.
- The engine can be turbocharged or naturally aspirated.
- The engine must not have a pre-existing oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter.
- 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 (e.g. not biodiesel blends or alternative diesel fuels) with a sulfur content of no more than 15 parts per million 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 AZ Purifier™ and AZ Purimuffler™, manufactured by Lubrizol Engine Control Systems of 165 Pony Drive, Newmarket, Ontario, Canada L3Y 7V1, has been found not to reduce the effectiveness of the applicable vehicle pollution control system, and therefore, the AZ Purifier™ and AZ Purimuffler™ is exempt from the prohibitions in Section 27156 of the Vehicle Code for installation on on-road vehicles with engines listed in Attachment 1, Tables 1 - 3.

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

The AZ Purifier™ is a catalyst module that is typically installed in the engine exhaust piping upstream of the original vehicle muffler. The AZ Purimuffler™ is an integrated converter muffler, which is installed in place of the original vehicle muffler and is normally purchased as direct fit designs. The major components of the AZ Purifier™ and AZ Purimuffler™ are identified in Attachment 2, Tables 1 and 2.

This Executive Order is valid provided that installation instructions for the AZ Purifier™ and AZ Purimuffler™ do not recommend tuning the engines to specifications different from the engine manufacturers'.

Changes made to the design or operating conditions of the AZ Purifier™ and AZ Purimuffler™, as verified by the ARB, which adversely affect the performance of the engines, 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 AZ Purifier™ and AZ Purimuffler™. Any changes to the device must be evaluated and approved by the ARB. Failure to do so shall invalidate this Executive Order.

Marketing of the AZ Purifier™ and AZ Purimuffler™ 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 the ARB.

This Executive Order shall not apply to any AZ Purifier™ and AZ Purimuffler™ advertised, offered for sale, sold with, or installed on an on-road 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 (i)), the ARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:  
**CA/LUB/2004/PM1/N00/ON/DOC01.**

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Lubrizol Engine Control Systems is responsible for honoring their warranty (Section 2707) and conducting in-use compliance testing (Section 2709).

In addition to the foregoing, the 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 certified under this Executive Order shall conform to all applicable California emissions regulations.

This Executive Order does not release Lubrizol Engine Control Systems from complying with all other applicable regulations.

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

Executed at El Monte, California, this 23<sup>rd</sup> day of September 2005.

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Robert H. Cross, Chief  
Mobile Source Control Division

Attachment 1: ARB Approved Engine Families for the AZ Purifier™ and AZ Purimuffler™

Attachment 2: Part Numbers and Model Numbers for the Approved AZ Purifier™ and AZ Purimuffler™