



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
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Sacramento, California 95812 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

November 13, 2012

Mr. Peter Guzman
Manager New Product Application
Rypos, Inc.
150 Hopping Brook Road
Holliston, Massachusetts 01746

Dear Mr. Guzman:

Using the *Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines* (Procedure), the Air Resources Board (ARB) has reviewed the Rypos, Incorporated (Rypos) application for the conditional verification of the Rypos ActiveDPF/C3+™ diesel particulate filter (DPF) titled, "RYPOS ActiveDPF/C3+™ Active Diesel Particulate Filter for Rubber Tire Gantry Cranes Application for Conditional Verification", dated October 15, 2012. Based on the evaluation of the data provided, and pursuant to the terms and conditions specified below, ARB hereby finds that the Rypos ActiveDPF/C3+™ DPF reduces emissions of diesel particulate matter (PM) consistent with a Level 3 Plus device (greater or equal to 85 percent reduction and compliant with the 2009 nitrogen dioxide standard) when in use in rubber tired gantry (RTG) cranes powered by certified Tier 3, 2, or 1, or pre-certification off-road diesel engines. ARB also finds that the Rypos ActiveDPF/C3+™ satisfactorily completed at least 33 percent of the durability demonstration period for RTG cranes. Accordingly, ARB determines that the system merits conditional verification and, subject to the terms and conditions specified below, classifies the Rypos ActiveDPF/C3+™ as a Level 3 plus system for RTG crane applications that use diesel engines. Engines for which the Rypos ActiveDPF/C3+™ is verified, the verified parts list, verified labels, swapping and re-designation information, and other product information can be found here:

<http://www.arb.ca.gov/diesel/verdev/companies/rypos/activedpf3.htm>

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

- The Rypos ActiveDPF/C3+™ is conditionally verified for a period not to exceed one year from the date of this letter. The conditional verification does not receive an executive order.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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- For the Rypos ActiveDPF/C3+™ to be considered for full verification, Rypos, Incorporated, must complete all remaining requirements as specified in this letter within one year of the date of this letter. If these conditions of full verification are not satisfied by the aforementioned time period, the verification is automatically terminated.
- Conditional verification is equivalent to verification for the purposes of satisfying the requirements of in-use emission control regulations.
- Certified engines for which the Rypos ActiveDPF/C3+™ is verified can be found here:

<http://www.arb.ca.gov/diesel/verdev/companies/rypos/activedpf3.htm>

- The engine must be used in a RTG crane application.
- The engine is greater than 50 hp and a certified Tier 3, 2, or 1, or pre-certification nonroad diesel engine.
- The engine must be in its original certified configuration if it was certified to Tier 1, Tier 2, or Tier 3 nonroad diesel engine emission standards. The attached engine family list identifies the certified engines applicable to the Rypos ActiveDPF/C3+™ when used on RTG cranes.
- The engine must not employ exhaust gas recirculation.
- 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 a two or four-stroke.
- The engine can be turbocharged or naturally-aspirated.
- The engine must be certified for use in California or pre-certification.
- Rypos must review actual operating conditions (duty cycle, baseline emissions, and engine backpressure) prior to retrofitting an engine with the Rypos ActiveDPF/C3+™ to ensure compatibility.

- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The other terms and conditions specified in Table 1 below.

Table 1: Summary of Conditions for the Rypos ActiveDPF/C3+™ System	
Parameter	Value
PM Verification Level	Level 3 Plus: <ul style="list-style-type: none"> • PM - at least 85 percent reduction. • NO₂ - meets January 2009 limit.
Regeneration System	Active
Applications	Both diesel-electric and diesel-hydraulic rubber tired gantry (RTG) crane applications.
Engine Type	Diesel-fueled, with or without turbocharger, certified Tier 3, 2, or 1, or pre-certification off-road engines.
Engine Horsepower	Greater than 50 hp.
Fuel	California diesel fuel with less than or equal to 15 ppm sulfur or a biodiesel blend provided that the biodiesel portion of the blend complies with ASTM D6751, the diesel portion of the blend complies with title 13 (CCR), sections 2281 and 2282, and the blend contains no more than 20 percent biodiesel by volume.
Minimum Exhaust Temperature for Filter Regeneration	Not Applicable (NA). Active DPF.
Maximum consecutive minutes at idle	NA. Active DPF.
Number of Hours of Operation Before Cleaning of Filter Required	Inspect every 1000 hours and clean if needed. Active DPF.

The Rypos ActiveDPF/C3+™ consists of a filter housing, electrical control circuit, and filter cartridges made of sintered metal fibers, referred to as an active sintered metal diesel particulate filter, and a downstream diesel oxidation catalyst.

Since there may be significant engine configuration and operation variations from application-to-application, Rypos will review operating conditions (duty cycle, baseline emissions, engine backpressure, maintenance history, and lube oil consumption) prior to retrofitting an engine with a Rypos ActiveDPF/C3+™ to ensure compatibility. The product must not be used with any other systems or engine modifications without ARB and manufacturer approval.

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Furthermore, the engine on which the Rypos ActiveDPF/C3+™ DPF is installed should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.

A copy of this Conditional Verification letter must be provided to the ultimate purchaser at the time of sale.

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

CA/RYP/2012/PM3+/N00/OF/DPF01

This identification number should be used in reference to this verification as part of the system labeling requirement. Labels attached to the Rypos ActiveDPF/C3+™ DPF and the engine must be identical.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Rypos, Inc., is responsible for honoring the record keeping requirements (section 2702), their warranty (section 2707), and conducting in-use compliance testing (section 2709).

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

Rypos, Incorporated, must ensure that the installation of the Rypos ActiveDPF/C3+™ DPF system conforms to all applicable industrial safety requirements. The Rypos ActiveDPF/C3+™ must not be located over any occupied space (RTG crane operator compartments), or in a way which would result in any noncompliance with any applicable safety standards, and any other location deemed unacceptable by Rypos. The terms and conditions of this conditional verification must be satisfied regardless of where the system is sold in order for the system to be considered verified. Systems sold as verified, or which carry an ARB-approved label, must satisfy all the terms and conditions of this conditional verification letter.

Systems conditionally verified in this letter shall conform to all applicable California emissions regulations. This conditional verification does not release Rypos,

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Incorporated, from complying with all other applicable regulations. Violation of any of the above conditions shall be grounds for revocation of this conditional verification.

In addition to the foregoing, ARB reserves the right in the future to review this conditional verification letter and the exemption provided herein to assure that the exempted and conditionally verified add-on or modified part continues to meet the standards and procedures of title 13, sections 2222, et seq, and sections 2700 through 2711, of the CCR.

Thank you for participating in ARB's diesel emission control strategy verification program. Should you have any questions or comments, please contact Mr. John Lee, Air Resources Engineer, at (916) 327-5975 or jlee@arb.ca.gov.

Sincerely,



Cynthia Marvin, Chief
Stationary Source Division

Attachment

cc: John Lee
Air Resources Engineer
Control Strategies Section