State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER DE-07-001-08

Pursuant to the authority vested in the California Air Resources Board (CARB) 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 sections 39515 and 39616 and Executive Order G-14-012;

Relating to Verification under sections 2700 through 2711 of Title 13 of the California Code of Regulations

Rypos, Inc.
Hybrid Diesel Particulate Filter (HDPF/C)

CARB staff has reviewed Rypos, Inc.'s request for verification of their hybrid active diesel particulate filter and diesel oxidation catalyst system (Rypos HDPF/C). Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of CARB hereby finds that the Rypos HDPF/C reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85 percent reduction) (Title 13 California Code of Regulations [CCR] sections 2702 [f] and [g] and section 2708) and complies with the CARB January 1, 2009, nitrogen dioxide (NO2) limit (Title 13 California Code of Regulations [CCR] Appendix A section 2702 [f] and section 2706 [a]). Accordingly, the Executive Officer determines that the Rypos HDPF/C merits verification as a Level 3 Plus system for diesel engines on stationary emergency standby generators and emergency standby pumps, subject to the terms and conditions specified below.

This verification is subject to the following terms and conditions:

- The engine must be used in a stationary application associated with emergency standby generators or emergency standby pumps.
- The engine is greater than 50 hp and model year 1996 or newer, certified to non-road diesel engine emission standards Tier 1, Tier 2, Tier 3, Tier 4i with a rated horse power between 50 and 75 or over 750, or Tier 4 Alt 20 percent nitrogen oxides (NOx) and particulate matter (PM), and having the engine family names listed in the Attachment.
- The engine must be a certified off-road engine with PM emission levels less than or equal to 0.2 g/bhp-hr (as tested on an appropriate steady-state certification cycle outlined in the CARB off-road regulations – similar to ISO 8178 D2).
- The engine must be in its original certified configuration.
- 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.
- Rypos, Inc. must review actual operating conditions (duty cycle, baseline emissions, exhaust temperature profiles, and engine backpressure) prior to retrofitting an engine with the HDPF/C 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 HDPF/C System

Parameter	Value
PM Verification Level	Level 3 Plus: • PM - at least 85 percent reduction. • NO2- meets January 2009 limit.
Regeneration System	Active
Applications	Stationary Emergency Standby Generators or Pumps.
Engine Type	Diesel-fueled, with or without turbocharger, certified off-road engine with particulate matter (PM) emission levels less than or equal to 0.2 g/bhp-hr.
Engine Models	1996 or newer and listed in Attachment 1 to the Executive Order.
Engine Horsepower	Greater than 50 horsepower (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 diesel particulate filter (DPF).
Maximum consecutive minutes at idle	NA. Active DPF.
Number of Cold Start and 30-minute Idle Sessions before Regeneration Required	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 HDPF/C 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 (DPF), and a downstream diesel oxidation catalyst.

This Executive Order is valid provided that installation instructions for Rypos HDPF/C do not recommend tuning the engine to specifications different from those specified by the engine manufacturer.

No changes are permitted to the device unless approved by CARB. CARB must be notified in writing of any changes to any part of the Rypos HDPF/C and these changes must be evaluated and approved by CARB. Failure to report any changes shall invalidate this Executive Order.

Changes made to the design or operating conditions of Rypos HDPF/C which adversely affect the performance of the engine's pollution control system shall invalidate this Executive Order.

No person shall alter, physically disable, disconnect, bypass, or tamper with an installed CARB verified diesel emission control strategy, as outlined in Title 13 CCR section 2711(e). Should CARB become aware that a design feature of a verified device is altered, physically disabled, disconnected, bypassed, or tampered on multiple units by independent persons, Rypos will be responsible to propose a design modification and recall plan to the Executive Officer to minimize existing and potential for future tampering of the verified device.

Marketing of the Rypos HDPF/C 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 CARB.

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

CA/RYP/2007/PM3+/N00/ST/DPF01

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

In addition, Rypos, Inc. must conduct in-use compliance testing (section 2709), which involves the following: in-use compliance field testing after 100 units have been sold or leased in California and in-use compliance emissions testing after 300 units have been sold or leased in California (section 2709 (a)). Both the in-use compliance field and emissions testing proposals have to be submitted within 90 days after selling or leasing in California the 100th unit and 300th unit, respectively (section 2709 (d)). The

in-use compliance field and emission testing reports must be submitted no later than 18 months after selling or leasing the 100th and 300th units in the California market, respectively, as outlined in section 2709 (k).

In addition to the foregoing, CARB reserves the right in the future to review this Executive Order and the verification provided herein to assure that the verified system continues to meet the standards and procedures of California Code of Regulations, Title 13, section 2222, et seq and California Code of Regulations, Title 13, sections 2700 through 2711.

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

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

Executive Order DE-07-001-07 is hereby superseded and is of no further force and effect.

Executed at Sacramento, California, this 23 day of December 2020.

Richard W. Corey
Executive Officer
by

Richard Boyd
Assistant Division Chief
Transportation and Toxics Division

Attachment:
CARB Approved Model Year 1996 to 2020 Engine Families for the Rypos HDPF/C.