

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER Q-15-020

Small Off-Road Engine Evaporative Emissions System Components

Solar Plastics, Inc.
EnviroGuard
Innovative Products

WHEREAS, pursuant to California Health and Safety Code, sections 39600, 39601, and 43013, the California Air Resources Board (ARB) has established a certification process for evaporative emissions system components designed to control gasoline emissions from small off-road engines (SORE), as described in California Code of Regulations, title 13, section 2767.1;

WHEREAS, pursuant to California Health and Safety Code, section 43013, ARB has established criteria and test procedures for determining the compliance of evaporative emission system components with the design requirements in Cal. Code Regs., title 13, section 2754;

WHEREAS, pursuant to Cal. Code Regs., title 13, section 2767.1, ARB Executive Officer may issue an executive order (EO) if he determines that the SORE evaporative emission system component or innovative product conforms to the applicable performance requirements set forth in Cal. Code Regs., title 13, section 2754 and 2755;

WHEREAS, pursuant to California Health and Safety Code, sections 39515 and 39516, ARB Executive Officer issued EO G-05-008 delegating the Chief of ARB Monitoring and Laboratory Division (MLD) authority to certify SORE evaporative system components and innovative products; and

WHEREAS, Solar Plastics, Inc. submitted an application for certification as an innovative product under in Cal. Code Regs., title 13, section 2767(c) for the model EnviroGuard process and materials for rotationally molded fuel tanks.

NOW, THEREFORE, I, Michael T. Benjamin, Chief of MLD, find that fuel tanks produced using Solar Plastics, Inc. EnviroGuard process and materials specifications set out in Attachment A, constitute innovative fuel tanks pursuant to Cal. Code Regs., title 13, section 2767(c). Fuel tanks produced following Solar Plastics, Inc. process and materials specifications are hereby deemed equivalent to those tanks listed in Cal. Code Regs., title 13, section 2752(a)(5). This finding is based on Solar Plastics, Inc. demonstration that such fuel tanks have a permeation rate less than 1.5 grams per square meter per day set forth in Cal. Code Regs., title 13, section 2754, when tested at a constant temperature of 40 °C using California Phase 2 Certification Fuel in accordance with approved Alternate Test Procedure ATP-15-003.

IT IS ORDERED AND RESOLVED that no tank permeation data is required to be submitted in the certification process for equipment using the Solar Plastics, Inc. model EnviroGuard process and materials for rotationally molded fuel tanks.

IT IS ORDERED AND RESOLVED that all fuel tanks made from Solar Plastics, Inc. EnviroGuard with minimum and average wall thicknesses equal to or greater than the values listed in Table 1, incorporated herein, will yield a maximum permeation rate no larger than the certified emission level also listed in Table 1. Fuel tanks made using Solar Plastics, Inc. EnviroGuard innovative product are certified for use in SORE equipment.

Table 1

Specifications for Solar Plastics, Inc. EnviroGuard Rotationally Molded Fuel Tanks		
Minimum Barrier Wall Thickness (millimeters)	Average Overall Tank Wall Thickness (millimeters)	Reported Permeation Rate (grams/meter ² /day)
1.5	4.5 or greater	0.4

IT IS FURTHER ORDERED that equipment manufacturers utilizing Solar Plastics, Inc. EnviroGuard for fuel tanks shall provide warranty to purchasers of the fuel tanks. The warranty must conform to the requirements of Cal. Code Regs., title 13, section 2760.

IT IS FURTHER ORDERED that the certified EnviroGuard rotationally molded fuel tanks shall be installed in accordance with the manufacturer's installation and use instructions for the tanks. A copy of this EO and installation and use instructions for the fuel tanks shall be provided to manufacturers purchasing Solar Plastics, Inc. EnviroGuard rotationally molded fuel tanks for installation on small off-road engines and equipment introduced into commerce in California.

IT IS FURTHER ORDERED that Solar Plastics, Inc. EnviroGuard rotationally molded fuel tanks introduced into commerce in California shall be clearly identified by a permanent identification showing the manufacturer's name, EO number, and model number.

IT IS FURTHER ORDERED that any modification of the Solar Plastics, Inc. approved process and material specifications for producing EnviroGuard rotationally molded fuel tanks is prohibited. Any alteration or modification of the process or material specifications set out in Attachment A of this EO will require the manufacturer to apply for a new EO.

IT IS FURTHER ORDERED that the Solar Plastics, Inc. EnviroGuard rotationally molded fuel tanks shall be compatible with fuels in common use in California at the time of certification and any modifications to comply with future California fuel requirements shall be approved in writing by the Executive Officer or the Executive Officer's delegate.

IT IS FURTHER ORDERED that the innovative product certification of the Solar Plastics, Inc. EnviroGuard rotationally molded fuel tanks can be referenced in certification applications for small off-road engines and equipment that use SORE unless the Executive Officer finds that the Solar Plastics, Inc. EnviroGuard rotationally molded fuel tanks no longer meet the performance requirements set forth in Cal. Code Regs., title 13, section 2754, when tested pursuant to Cal. Code Regs., title 13, section 2765.

Executed at Sacramento, California, this 18th day of November 2015.



Dr. Michael T. Benjamin, Chief
Monitoring and Laboratory Division

Executive Order Q-15-020
Attachment A

Solar Plastics, Inc. Solar EnviroGuard Two Layer Material System—Process and
Material Specifications

Model: Solar Enviroguard

This information has been sanitized to withhold proprietary or confidential
information which can be provided on a need to know basis by Solar Plastics,
Inc.

1. Material Specifications: Solar EnviroGuard

Components of Solar EnviroGuard two layer material system.

A. Outer Layer -

Material Composition: Ingenia SL 120
Minimum Average Wall Thickness: 3.0 mm

B. Inner Barrier Layer -

Material Composition: Arkema Rilsan Roto 11
Minimum Average Wall Thickness: 1.5 mm

2. Process Parameters—Two Layer Tank

A. Manufacturing Process: Roto-Molding

B. Molding Process:

1. Heat Cycle Layer 1 - Outside: \approx 10 - 30 minutes.
2. Heat Temperature: \approx 550°F +/- 50°F.
3. Heat Cycle Layer 2 – Barrier: \approx 3 - 10 minutes.
4. Heat Temperature: \approx 520°F +/- 50°F.
5. Cooling Cycle: A combination of ambient air fan and water spray to achieve good adhesion and desired removal temperature between 80°F and 180°F.