RNG Plastics®

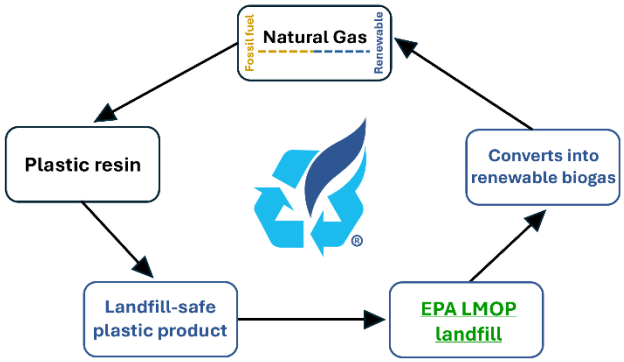
Renewable Fossil Fuel Plastics

Thom Chin • Danville, CA • 510-774-0303 • Thom@RNGPlastics.com

FAQs

Renewable Landfill-Safe Plastics at EPA Regulated Landfills

Process Overview: Plastic Resin to RNG Feedstock via Landfill Capture



1. **What Are RNG Plastics?** They are renewable fossil fuel plastics that are fully converted/ upcycled into renewable natural gas (RNG) at EPA regulated landfills. RNG is the same feedstock used to make virgin plastics.
2. **Why Is the Technology Beneficial?** RNG Plastics represent the highest plastic sustainability model on Earth. RNG Plastics support a circular process with verified carbon footprint reductions, as certified by Intertek LCA.
3. **What Are the Carbon Footprint Benefits?** Enables carbon offsets through RNG renewal, with estimated stacked credit values of $200-$400 per ton (Verra 2026 projections, based on methodologies like VM0018 for methane avoidance and waste attributes). Supply chain stakeholders (manufacturers, packers, distributors, end-users) can apply these to meet environmental objectives.
4. **How Are they Made?** Manufacturers seamlessly supplement their current resins with a tiny amount of RNG Plastic **EPS resin**—an **Enhanced Polymeric Structure** precisely formulated via our audit-verified, data-driven **AI Science Hub**—ensuring scientifically accurate compatibility for all compatible plastic types (e.g., PE, PET; see Q10). In EPA landfills only, it passively enables conversion into RNG.
5. **How Does the Supplemental EPS Technology Work in a Plastic Product?** It remains dormant and has no effect on the plastic's properties, such as rip and tear resistance, dart drop, OTR, or haze. Only after the EPS enhanced product reaches the landfill does it activate. It reduces the life of the plastic (widely recognized by polymer scientists as about 100 years) meeting the an EPA regulated landfill's 30-year life requirement.
6. **How Does the Plastic Get Converted into RNG at Landfills?** EPA regulated landfills are multi-million dollar **recovery centers**. Waste, including plastics, can sit dormant for up to four years in a tightly covered, sealed environment to prevent pre-release of greenhouse gases (GHG). Giant wells are then drilled, which creates a high heat biodigester environment with built-up aerobic gases (primarily CO2). The escaping gases are primarily from bioplastic and contaminated organic materials. These wells are capped and the gases are then safely captured and diverted to an adjacent facility, avoiding atmospheric release. The landfill heats up to as much as 130°F, initiating a conversion into an anaerobic process that converts waste into methane (RNG) for up to 30 years.

During this phase, RNG Plastics are renewed into their original feedstock—natural gas—with no pre-release of GHG. Traditional plastics remain buried with minimal conversion. Converts to RNG (methane) at 70-95% capture efficiency per EPA LMOP, yielding ~0.5-1 m^3 per kg plastic based on ASTM and LCA testing.

Thom Chin • Danville, CA • 510-774-0303 • Thom@RNGPlastics.com

7. **Are there Microplastic, Toxins or Waste Left Behind?** None. Aligns with zero-contamination goals, per REACH/FDA approvals and 2025 research on nanoparticles. After about 10 years or so, all that remains is a little water vapor and a tiny amount of biomass. It is FDA- and REACH-approved.
8. **Are RNG Plastics Recyclable?** Yes. ASTM certification with Aropha is available.
9. **Can they Get Certified?** Yes. ASTM certification is available through Aropha, Inc., an ISO 17025 facility and Intertek, the world's largest LCA certification service (for carbon credit validation). These certifications are backed by 30 years of EPA methane capture records.
10. **What Types of Plastics Can Use the Technology?** RNG Plastic EPS technologies are precisely formulated via our audit-verified, data-driven AI Science Hub, ensuring scientifically accurate compatibility for extrusion in most fossil fuel plastics. Adaptable for laminates and dissimilar materials; stable up to 550°F. Exclusions: silicones, bioplastics, and hybrids.

Plastic Type	Examples	Compatibility Notes
PE:	LDPE, HDPE, MMW, CPE, TPE, NTH	Broad; adaptable for film, thermoforms, sheets
PP/BOPP:	BOPP	Containers, gift wrap, packaging films.
PVC:	Flexible, semi-flexible, rigid	Gloves, film laminates, tubing
Nylons:	6, 66,	Barrier films Carpeting.
PET:	PETE, PETG, RPET, CPET	Ideal for containers, barrier films.
Foams:	EPS, PE, PET, FUS	Container padding, support
Nitrile (NBR):	All types	Gloves, medical wear.
Tie Layers:	EVA, EVOH, EPDM	For laminates; stable to 550°F.

11. **How much more does it cost?** 2 cents per pound; carbon credit revenue ($200-$400/ton estimated) can offset to below virgin resin costs.
12. **Where can you buy RNG Plastic EPS resins?** In North America and Asia, from Landfill-Safe LLC. It is sold only to licensed manufacturers.

intertek
Total Quality. Assured.

The Global Certification Leader

Valued EPA Partner

LANDFILL METHANE OUTREACH PROGRAM

30 years of proven results

AROPHA

International ASTM Certification