# MATERIALS

## Standard ABS and Nylon Polymer Materials Today. A Material Supplier Network to Fast-Track Innovations for Tomorrow

Evolve is helping companies bring their innovations to life. From complex geometries, part consolidation and multi-material parts/components that can be produced in a single pass, to designing completely new products that can be manufactured in new ways to maximize functionality.

**Our proprietary process of standard ABS and Nylon materials enables us to meet some of the most demanding manufacturing specifications.**

The Evolve Materials Development Headquarters located in Rochester, New York, is staffed with engineers ready to convert your favorite engineering-grade thermoplastic into a STEP™ (Selective Thermoplastic Electrophotographic Process) compatible toner for the Evolve SVP™ (Scalable Volume Production) platform. We have formed partnerships with well-known global suppliers of materials and end customers to formulate solutions with specific properties and performance.

In addition to our growing standard material offerings, we continue to work with customers to develop materials needed for their applications. A development agreement (DA) provides a low risk, low initial investment, phased approach to the development process with milestones that guarantee progress to your final performance goal.

This structure provides benefits to the customer as they are able to enter a market early with an additive process paired with the specific materials needed for their applications.

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## KEY VALUE

Evolve uses standard thermoplastics for feedstock. Through a proprietary process these resins are 'micronized' into the small particles that are needed for the Electrophotography portion of Evolve's additive STEP technology process. This allows customers to leverage their knowledge of the preferred materials into additively manufacturing parts with no surprises about composition or performance. Knowing the desired end product thermoplastic behavior and requirements allows customers to specify toners that will most closely match current material performance and benefits, including compatibility with post processing such as plating or painting, when desired.

## RECYCLING AND WASTE

The process to convert pellets to STEP compatible powder is sustainable with near zero waste or scrap. Undersized and oversized particles created during the process are fed back to the melt state along with virgin material such that in the end 100% of what goes into the process is used without waste. This is not only good for the environment; it is also part of the path to the lowest possible material cost.

## EXAMPLE MATERIAL DEVELOPMENT PROJECTS:

- ABS (color, heat stable, UV/weather resistant, transparent)
- Nylon 11 (semi-crystalline)
- Nylon 11 (amorphous)
- TPE (TPU, PEBA)
- PP Polypropylene
- POM
- Nylon 6
- PBT
- What is your need – ask our team

## MATERIALS DEVELOPMENT

Looking for a specific material for your application? We provide optional levels of engagement:

### Commercialization

- Materials already demonstrated but not yet commercially available can be fast-tracked to meet your specific needs or modified by moving into concept development first

### Concept Development

- This is typically taking materials where we have already completed proof of concept
- Materials at the Proof of Concept phase are reduced to practice for performance and scalability
- Includes optimization for robust performance hitting all operational, property and costs targets

### Proof of Concept

- This is typically the earliest stage of a development program
- New-to-STEP materials which fit into a known micronization process and have SVP compatible heating and thermal characteristics

### Emerging Materials JDA (Joint Development Agreement)

- For materials outside of our standard SVP platform's process, there is the option to engage with us via a JDA. This provides us with the ability to develop new materials and a platform or process to additively manufacture them with the specific properties you need

## LEARN MORE

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