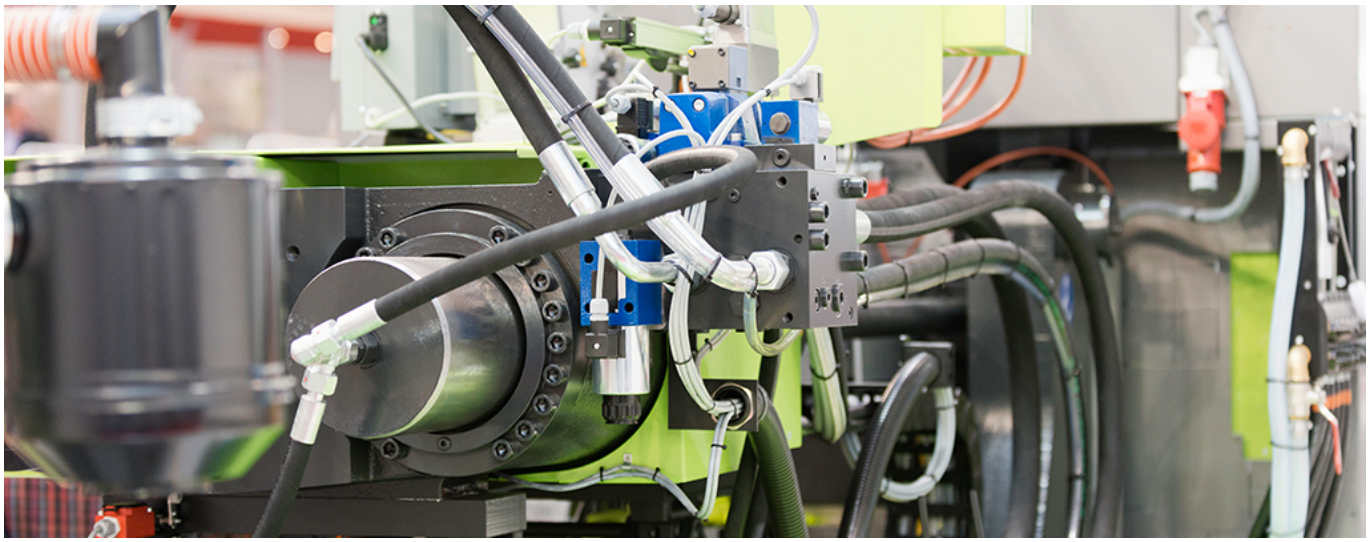
What to expect from our R&D capabilities



The goal of Green Dot Bioplastics' research and development (R&D) program is to create custom formulations that meet specific client needs. Long story short; you ask for it, we create it.

What do you gain from our R&D capabilities?

The answer – a product that matches your needs and is scalable for full production. A client's needs can range from sustainability goals to more technical requirements such as rate of degradation and strength requirements for the application they're trying to use it in.

Most of our R&D time is spent on client-based projects, but when time allows, we are always looking for breakthroughs for future development. The ideas we're coming up with are more long-term and bigger scale projects compared to what clientele is traditionally looking for. They might have a specific set of physical or chemical needs that we design around, but our own ideas are more outside the box. These outside-the-box ideas enable us to continue to offer the best, customized solutions to any clients' needs.

Often, R&D departments are faced with the challenge of scalability. It's great to create something that matches exactly what the client needs, but if the product can't scale into production, it becomes moot. Not at Green Dot. All of our developments for clients are

scalable into any-sized production.

But how is this common problem not an issue at Green Dot? First and foremost, it has to do with the equipment used. When developing a process, we always try to use the same equipment that is used in production. This enables us to get a feel of how the materials flow through the machinery. Sometimes, equipment doesn't match perfectly so our R&D team spends time at the production facility to document challenges our production team is facing.

The R&D team analyzes the products they create to ensure they can flow through the production equipment. If they don't think an organic filler will flow, the team will run tests before moving forward with production, a departure from many R&D departments. It's a two-step approach – have the right equipment and the knowledge of the full-scale process to choose the right ingredients for each biocomposite blend.

What are some of the achievements of the R&D department?

Within the walls of our R&D department, we've discovered ways of making biodegradable alloys that enable us to encompass a large range of physical properties. For example – biodegradable polymers are typically brittle, but through our research and experimentation, we can now develop biodegradable materials with properties ranging from a flexible elastomer to completely rigid and everything in between while eliminating the brittle tendencies. We've filled the gap between very flexible and very rigid to achieve nearly any physical characteristic you might be looking for.

To accomplish this, we use a wide variety of materials. Our biocomposites use fillers and fibers as reinforcement. Additionally, we can add a number of liquid-based materials to improve flexibility and flowability along with the ability to alloy the polymers together to create a synergistic effect.

What is the biggest takeaway?

The team at Green Dot has extensive knowledge of available materials that can be used in any given project. Our understanding of how to handle and blend the materials to get the best physical properties in addition to the unique capability of handling organic fibers and fillers gives us advantages in strength and quality of the biocomposites we develop.

Our bioplastics R&D capabilities are part of the equation that positions Green Dot Bioplastics

as a thought leader in the bioplastics industry.

Our R&D capabilities helped Futures Fins

Futures Fins, a surf equipment manufacturer, created an environmentally friendly biocomposite-based fin for stand-up paddleboards. Download our guide to learn how our R&D department customized a wood-plastic composite to match all of Futures Fins' needs from performance to sustainability.

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