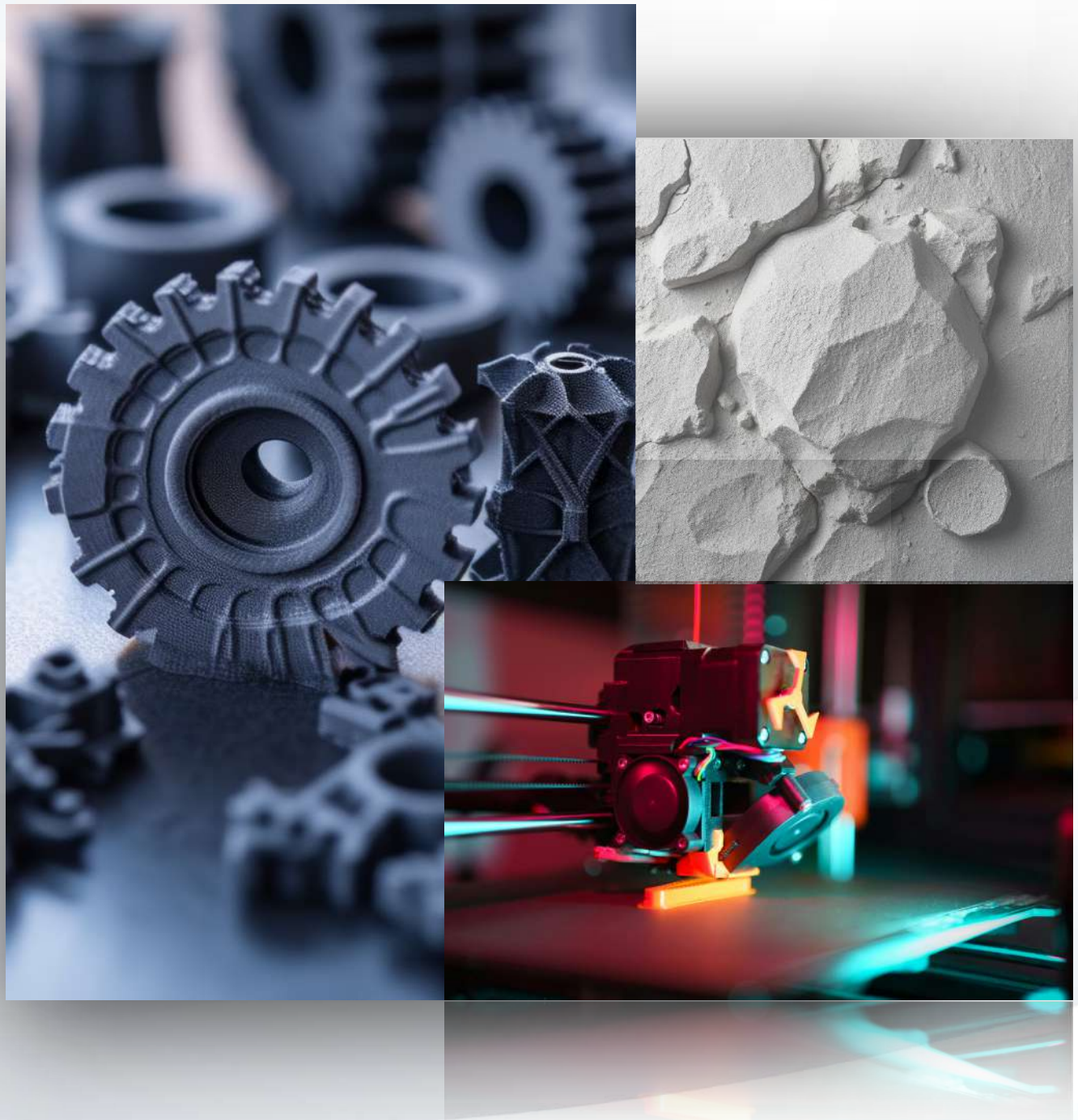
SYNCORE

# SYNCORE
# Product Catalogue



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TRADE BEYOND FORECAST

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# Syncore 3D Printing Material Characteristic Category

## 1. Graphene composite Polylactic Acid (PLA) filaments:

PLA can be manufactured using the same equipment as petrochemical polymers, making the production process reasonably cost effective.  PLA is the second most often made bioplastic (after thermoplastic starch) and shares properties with polypropylene (PP), polyethylene (PE), and polystyrene (PS), as well as being biodegradable. Furthermore, PLA can be derived from various biomass sources, including corn starch and sugar cane. Additionally, it can be modified by incorporating other substances to impart distinct characteristics. This is especially relevant for PLA filaments, as the inclusion of these materials enables 3D printed PLA to serve a variety of applications.

## 2. Graphene Composite Polyester (PETG) filaments:

Polyethylene terephthalate glycol, often referred to as PETG, is a thermoplastic polyester recognized for its remarkable chemical resistance, durability, and superior formability in manufacturing processes. Due to its low forming temperatures, PETG can be readily vacuum-formed, pressure-formed, and heat-bent.

PETG is a highly regarded material for contemporary 3D printing and is rapidly gaining popularity within the community due to its increasing availability. When using the appropriate print settings, PETG filament is easy to work with, offers outstanding layer adhesion, and produces no unpleasant odors during printing. Its minimal shrinkage characteristics allow for the creation of larger prints compared to materials such as PLA or ABS. Additionally, PETG is remarkably durable and exhibits excellent resistance to chemicals, making it suitable for producing items that can withstand high temperatures and possess impressive impact resistance.

## 3. Graphene Composite Nylon filaments

Polyamide (PA), often referred to as Nylon, is a semi-crystalline thermoplastic characterized by its low density and high thermal stability. construction plastics, nylon offers outstanding wear resistance,

Nylon is a robust and rigid engineering plastic known for its excellent bearing and wear characteristics. It is commonly utilized as a substitute for metal bearings and bushings, often used as a favorable coefficient of friction. Additional advantages of nylon include a lighter part weight, reduced operational noise, and  impressive temperature resistance along with strong impact strength.

This guide explores the characteristics, enhancements, and uses of PA materials, providing designers and manufacturers with in-depth knowledge on how to effectively leverage these polymers.



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# Product List

| Product Type | Color | Charateristics & Properties |
|---|---|---|
| PLA+graphene (PLA+Graphene) | Black, Grey, Matte, Glitter, Luminous, Silk Rainbow, Marble, Wooden, etc. | It is lightweight, has a matte texture, and is reinforced with graphene fibers for exceptional strength and hardness without feeling plastic. |
| PLA+graphene+carbon fiber (PLA+Graphene+CF) | Black, Grey | Made with graphene and carbon fiber, it is tough, strong, and resistant to impacts, making it ideal for creating durable parts. |
| PETG+graphene (PETG+Graphene) | Black, Grey, Matte, Fluorescent, Rainbow colors | Adding white graphene upgrades the toughness and impact resistance of PETG, making the printed parts durable against drops and impacts, less likely to break, resistant to acids and bases, and available in various colors. |
| PETG+graphene+glass fiber (PETG+Graphene+GF) | Black | Made stronger with graphene and glass fiber, it is tough and resistant to cuts and tears. |
| Nylon+graphene (PA+Graphene) | Black, Grey, Original color | Adding white graphene makes printed parts strong and impact-resistant, so they can withstand drops and hits. PA has a low shrinkage rate during printing, which helps prevent cracking or warping. |
| Nylon+graphene+carbon fiber (PA+Graphene+CF) | Black | Made with graphene and carbon fiber, it is tough, strong, and resistant to impacts, making it ideal for creating durable parts. |
| Nylon+graphene+glass fiber (PA+Graphene+GF) | Black | Reinforced with graphene and glass fiber, it has high strength and cut and tear resistance. |

For further information tailored to your needs, we invite you to reach out to our dedicated product sales specialist.



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