3M pioneers 3D printing for PTFE - the world's first 3D printed fully fluorinated material—combining the design freedom of additive manufacturing with the unparalleled performance of PTFE.
Imagine the possibilities.

For the first time, fully fluorinated polymers such as 3M™ Dyneon™ PTFE can be processed via 3D printing. 3M has pioneered a proprietary technology that opens new opportunities previously unachievable with traditional processing techniques.

This new 3M process uses a tailored material formulation and open-source stereolithography, also known as vat polymerization, technology for prototype, small batch, and serial production of high-performance parts. Resulting parts display properties comparable to those produced by traditional manufacturing techniques.

You provide the inspiration and specifications; we'll print the parts based on your CAD files to meet your specifications.
Benefits of additive manufacturing with PTFE

Why go “3D”?

Unparalleled design freedom
• Greater geometric flexibility that adds functionality, enabling novel designs
• Creates possibilities for weight reduction, tailored performance

Enhanced product development cycles
• Accelerates and improves design iteration

Potential cost savings
• Streamlines production by printing integrated assemblies in fewer steps
• Reduces inventories by printing parts “on-demand”
• Provides enhanced part functionality and performance benefits
Unique properties of 3D printed PTFE

Unmatched performance.

For printing, we use a tailored formulation of PTFE, a versatile and unique polymer. Both our material formulation and post-processing steps are optimized to produce parts with physical properties comparable to those of conventionally produced parts.

Although atypical for most additive manufacturing processes, properties of 3D printed PTFE are highly isotropic. Stereolithography is used to selectively cure a photosensitive liquid PTFE resin. This process offers all the advantages of traditional 3D printing along with high dimensional resolution for producing highly-detailed, isotropic and intricate parts. Our 3D printing process for PTFE can produce miniaturized geometric structures as small as 0.2 mm.
Whether it’s creating parts to withstand the most severe chemical processing environments or providing a precise fit for a unique electronics application, customers can bring their designs to life like never before.

Small, intricate parts that are impractical or impossible to machine from PTFE are a great fit for our additive manufacturing technology, creating a new world of possibilities – and a new way of doing business. Whether you need prototyping, small batch manufacturing or serial production, harness our extensive fluoropolymer expertise and unique additive manufacturing capabilities to bring your designs to life.

Ideal applications and markets

Where 3D printed PTFE fits best.

Printing Capabilities

1. Complex, impossible-to-machine geometries up to 120×80×80mm
2. Lightweight with honeycomb and lattice structures
3. Smooth surface finish, fine features and labels
4. Miniaturized structures
5. Integrated assemblies
Application opportunities

Discover how you can take advantage of the unique capabilities of 3M's 3D printed PTFE.

Tube suspension fixture
Custom fixture for assembly, mounting and cleaning

Atomizing nozzle
Transport device

Filter
Processing equipment used in chemical processing industry

Slide carrier
Sample holder used in research laboratories

Inline static mixer
Mixing/stirring element used in pharmaceutical industry

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