FORTIFY

Specialists in filled and fiber reinforced photopolymers

CKM™

CONTINUOUS KINETIC MIXING MODULE

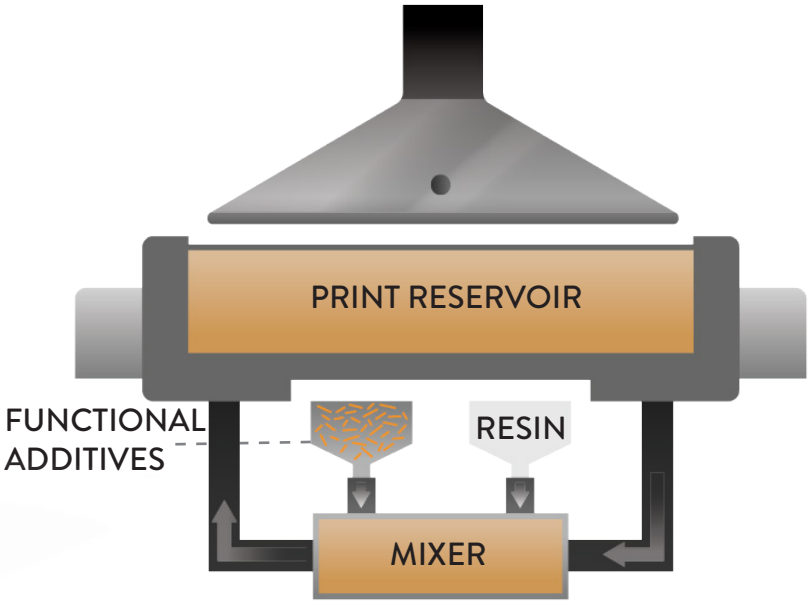
KEY FEATURES:

- Maintains uniform suspension
- Wide range of fibers and particles
- Supports high viscosity material
- Heating to 80 Deg C

CONTINOUS: Resin is circulated throughout the printing process
KINETIC: Mixing energy is tuned for each material
MIXING: Ensuring uniform distribution

3D PRINTING WITH FUNCTIONAL ADDITIVES

Reinforcing fiber and particles have enhanced material properties in traditional plastic manufacturing processes for decades. Fortify now brings this proven approach to additive manufacturing. CKM enables printing of photopolymer resins with uniformly distributed functional additives The system ensures that particles stay in suspension instead of agglomerating or settling to the bottom of the vat.



ENHANCED MATERIAL PROPERTIES

Additives incorporated by CKM ehance mechanical performance (strength, stiffness, toughness, wear, and heat deflection temperature) as well as thermal and electrical properties (conductance and dielectric strength). Fortify combines the scalability, resolution, and surface quality of photopolymers with the performance expectations of traditional high performance polymers.

FIBER ALIGNMENT: Fortify can enhance material properties even further by aligning reinforcing fibers throughout printed parts. Learn more about our Fluxprint™ magnetic alignment module at 3DFortify.com

CKM™ VERIFICIATION

Fortify verifies the uniformity of additives distributed in printed parts by analyzing samples taken from different regions of the part. Our testing includes:

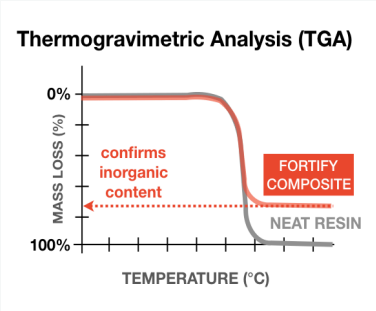
- TGA (thermogravimetric analysis) to confirm percentage concentrations of organic content.
- SEM (Scanning Electron Microscopy) to show different particle count and type.
- Optical Microscopy, to confirm visual composite uniformity.

Results throughout the part are confimred within an acceptable range.

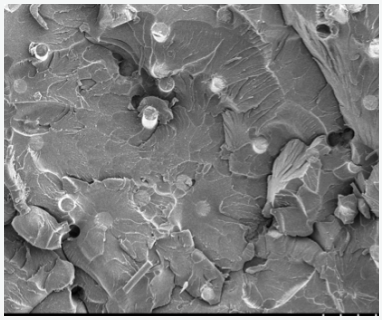
Sample gear 3D printed using CKM technology

LAYER DATA: 900 OF 1,000

TGA



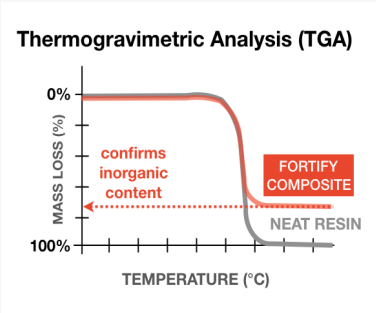
SEM



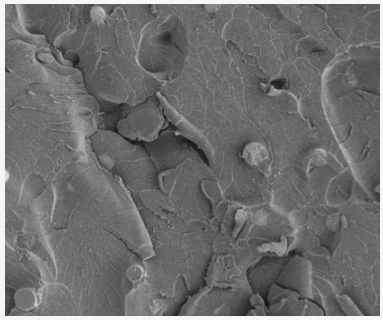
MICROSCOPY

LAYER DATA: 100 OF 1,000

TGA



SEM



MICROSCOPY

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WHAT'S IN YOUR RESIN?

Discuss your material challenges with our engineering team today.

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