

# Static Mixer: Designed for Additive Manufacturing

## CHALLENGE

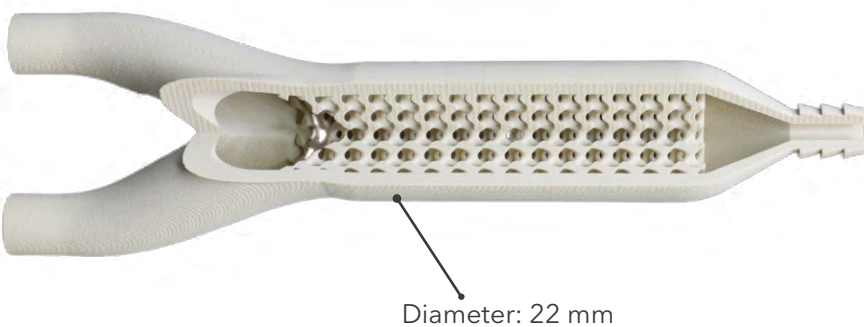
A supplier of fluid handling products is developing a new reactor system that requires a high efficiency static mixer. Most static mixing elements are molded, which has geometric limitations that reduce performance. High performance static mixers are difficult to produce, therefore they are costly and come in limited sizes and materials. This company needs a mixing element that can survive the organic solvents used in their reactor, while having a complex geometry that can quickly and efficiently mix their reagents.

## SOLUTION

Inkbit Vista can produce highly complex, chemically resistant static mixers. Wax support material is easily removed, despite the mixer having challenging geometry that would be impossible to mold or machine. The chemically resistant epoxy material does not swell or lose strength even after prolonged exposure to organic solvents, ensuring that the mixer will operate effectively over time. Despite being much more effective than commercially available mixers, the parts printed using Inkbit Vista are significantly lower cost than traditionally made designs and can be produced in high volume.

## KEY TAKEAWAYS

1. Excellent chemical compatibility
2. Significant cost savings compared to molded or machined components
3. Complex geometries are straightforward for Inkbit Vista



## Highlights

Print Time: 2.18 hours

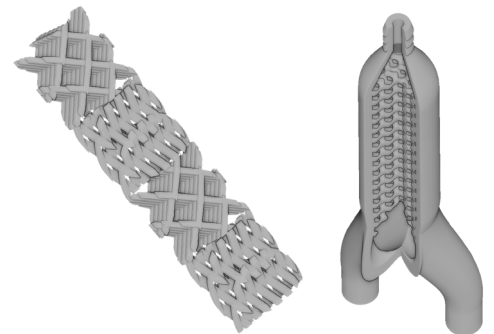
Cost per part: \$2.25

Number in build: 56

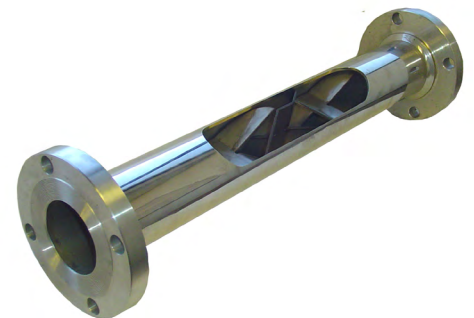
## Material:

Titan Chem Epoxy EP-C-003

## Designing Static Mixers



*Static mixer geometries are a difficult manufacturing problem.*



*Printing static mixers provides a lower cost option compared to traditional methods.*