



# Nytef Application Ideas

## Downtime Reduced With “Designer” Polymer

**Background:** A food processing and filling equipment manufacturer produces a line of high performance pumps for the food processing industry. These pumps run non-stop to meet the required throughput of high volume food processors, making these low-maintenance, highly efficient pumps highly desired by plant managers, maintenance personnel and engineers at major processors everywhere.

**Problem:** Many of the pump components were originally designed in stainless steel, but were switched to better performing polymer materials as the pumps evolved. However, one of the new materials specified by the OEM quickly showed problems in terms of brittleness, food contamination, poor wear characteristics and lack of FDA compliancy. The customer went back to the original stainless steel, but found it was prone to excessive wear, which was not acceptable.

**Nytef Engineered Solution:** Because of the relatively unique operating environment for these pumps, Nytef’s technical service team determined that no standard engineering plastic material would meet the requirements for extended part service life. Working with raw material suppliers, Nytef soon developed a unique, “designer” polymer based on UNITEM PEI, increasing impact strength by a factor of four, resulting in much less brittle parts; lowering the coefficient of friction by over 50% for greatly enhanced wear; and maintaining the required FDA compliancy. Downtime is now approximately 10% compared to previously required maintenance, making for very satisfied end users.



*Lip seal and bearing housings machined from Nytef’s “Designer Polymer” (custom-filled Unitem) exceed all of the manufacturers specifications for performance, including greatly enhanced service life and FDA compliance.*

### Industries

- Aerospace
- Automotive
- Chemical
- Food/Beverage
- Petroleum
- Pharmaceutical
- Medical
- Semiconductor
- Transportation
- Packaging/Labeling

### Materials

- Acetal
- Nylon
- PEEK
- PPS
- PBT
- PPO
- PVDF
- PEI (Ultem®)
- Polycarbonate
- Custom Filled

### Nytef Customer Fulfillment Centers

- Philadelphia- 1620 Woodhaven Ave., Bensalem, PA
- Chicago- 1610 Jarvis Ave., Elk Grove Village, IL
- Los Angeles- 13185 Imperial Hwy., Whittier, CA
- West Palm Beach- 6643 42<sup>nd</sup> Terrace, North, FL

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