Your Engineered Solutions for Chemical Resistant Thermoplastic Pumps for the handling of abrasive, corrosive, explosive, slurry, sludge and ultrapure liquids.
Introduction

The wet end components of every pump are made from corrosion and abrasion resistant engineered plastics such as, polypropylene (PP) and polyvinylidene fluoride (PVDF). Completely inert, these thermoplastics are impervious to acids, caustics, salts, solvents, chlorides, halogens, and other aggressive, abrasive chemicals that can attack pumps made of metals, plastic or rubber lined metals, and fiberglass reinforced plastics.

Whereas metals (including stainless steel, Hastelloy® and other high alloys) have accepted annual rates of corrosion, chemically inert thermoplastic components do not. As a result, pumps provide long, trouble-free service life and prevent the contamination of reagent-grade chemicals and other ultrapure fluids.

The wet end is comprised of solid, thick-sectioned, stand-alone components (unlike plastic linings), that are easily replaced, maximizing uptime while minimizing cost.

Unlike mass produced pumps, pumps are engineered to individual requirements in configurations including: cantilevered, close-coupled, integral-motor shaft, bearingless, sealless, self-priming, magnetic drive and more. It means that a pump can meet and exceed your performance requirements, while conforming to your new or existing dimensional specifications.

These unique attributes make pumps ideal for transfer, neutralization, disinfection, dosing, effluent collection, lift station, odor control, and recirculation — virtually any new or retrofit application in which corrosive, abrasive, or ultrapure fluids are handled.

Materials of Construction

All fluid contact parts of a pump are injection molded or fabricated of solid, chemically inert, thermoplastics.

These components offer significantly broader chemical resistance over the full pH range than components made of stainless steel and other alloys. pumps are therefore superior for handling of acids, caustics, solvents, chlorides, halogens and other corrosive or hazardous fluids, including mixed or unknown liquids, plant effluents and waste streams.

Unlike metals, thermoplastics are inert, eliminating corrosion and assuring the integrity of ultrapure water, reagent grade chemicals and other fluids required by chemical and pharmaceutical manufacturers, printed circuit board fabricators, utilities and other companies whose processing operations cannot tolerate contamination.

Thermoplastic pumps also provide greater abrasion resistance than metals, making them superior for pumping of drainage sumps, containment areas, effluent collection vessels and other applications in which abrasive-containing fluids can be encountered.

In addition, thermoplastics eliminate problems of wicking, absorption and abrasion associated with pumps made of fiberglass-reinforced plastics (FRP), and problems of tearing, cracking and peeling associated with plastic-lined metal pumps.

As a result, pumps have no equal for safe, dependable handling of wastewater, caustics, acids and ultrapure liquids — the applications for which they are specifically designed and constructed.
ADVANTAGES OF THERMOPLASTIC PUMPS OVER METAL PUMPS

- No galvanic corrosion or rusting. Metals corrode, thermoplastics do not.
- Superior resistance to abrasion compared to metals.
- Greater chemical resistance over the full pH range compared to metals.
- No ionization/metallic contamination of the fluid.
- No problems with galling. Easier maintenance.
- Significantly lighter than metal pumps, allowing easier installation and maintenance.

ADVANTAGES OF THERMOPLASTIC PUMPS OVER FIBERGLASS REINFORCED PLASTICS (FRP) PUMPS

- No interbatch product contamination. Fiberglass composites wick and absorb by capillary action.
- Solid homogeneous thermoplastics do not.
- Superior resistance to abrasion compared to thermoset composites.
- Greater chemical resistance over the full pH range than thermosets.

ADVANTAGES OF THERMOPLASTIC PUMP OVER THERMOPLASTIC-LINED METAL PUMPS

- No pinpoint porosity
- No substrate separation
- No expansion differential between metal and liner
- No metal contact due to surface abrasion, nicks or gouges

### TEMPERATURE LIMITS OF THERMOPLASTICS

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>MAXIMUM TEMP. °C</th>
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<tbody>
<tr>
<td>PP Polypropylene</td>
<td>60</td>
</tr>
<tr>
<td>PE Polyethylene</td>
<td>93</td>
</tr>
<tr>
<td>PVDF Polyvinylidene fluoride</td>
<td>105</td>
</tr>
<tr>
<td>ECTFE Ethylene Chlorotrifluorethylene</td>
<td>95</td>
</tr>
<tr>
<td>PTFE Polytetrafluorethylene</td>
<td>95</td>
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</tbody>
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- Temperature limits of thermoplastics for various materials.
Industries we serve

- Chemical
- Electronics
- General
- Metal Finishing
- Metalworking
- Pharmaceutical
- Pollution control
- Power, Energy and Utility
- Pulp and Paper
- Wastewater Industrial
- Wastewater Municipal

Fluids we pump

- Acid salts
- Acids
- Alkalies
- Alum
- Ammonia
- Bromine
- Calcium
- Carbon slurries
- Caustic soda
- Caustic solutions
- Caustics
- Chlorine
- Chronic acid
- Chromium
- Corrosive slurries
- Corrosives
- Deionized water
- Glycerine
- Groundwater
- Halogens
- Hot brine
- Hydrochloric acid
- Hydrofluoric acid
- Hydrogen peroxide
- Hydrogen sulfide
- Inorganic Contaminants
- Iron
- Nickel
- Nitric acid
- Phosphoric acid
- Polymers
- Polyvinyl acetate glue
- Sodium
- Sodium dichromate
- Sodium hydroxide
- Sodium hypochlorite
- Sodium thiosulphate
- Solder flux
- Solvents
- Sulfates
- Sulfuric acid
- Ultrapure water
- Various wastewater
- Zinc
- Zinc ammonia
- Zinc chloride solution

Other Products

- Horizontal Centrifugal Mechanical Seal or Gland Packing Pumps in SS304 or SS316
- Sanitary grade as per FDA Centrifugal Pumps SMS or Tri Clover Fittings in SS304 or SS316
- Magnetic Drive Seal less 100% Leak Proof Horizontal Centrifugal Pumps in SS304 or SS316
- Self Wet Priming Centrifugal Mechanical Seal Pumps in SS304 or SS316
- Horizontal Multistage Mechanical Seal Pumps in SS304 or SS316 for Ultrapure or Hotwater
- AODD dry self priming pumps for fluids used in CIP and SIP areas with FDA & 3A approval