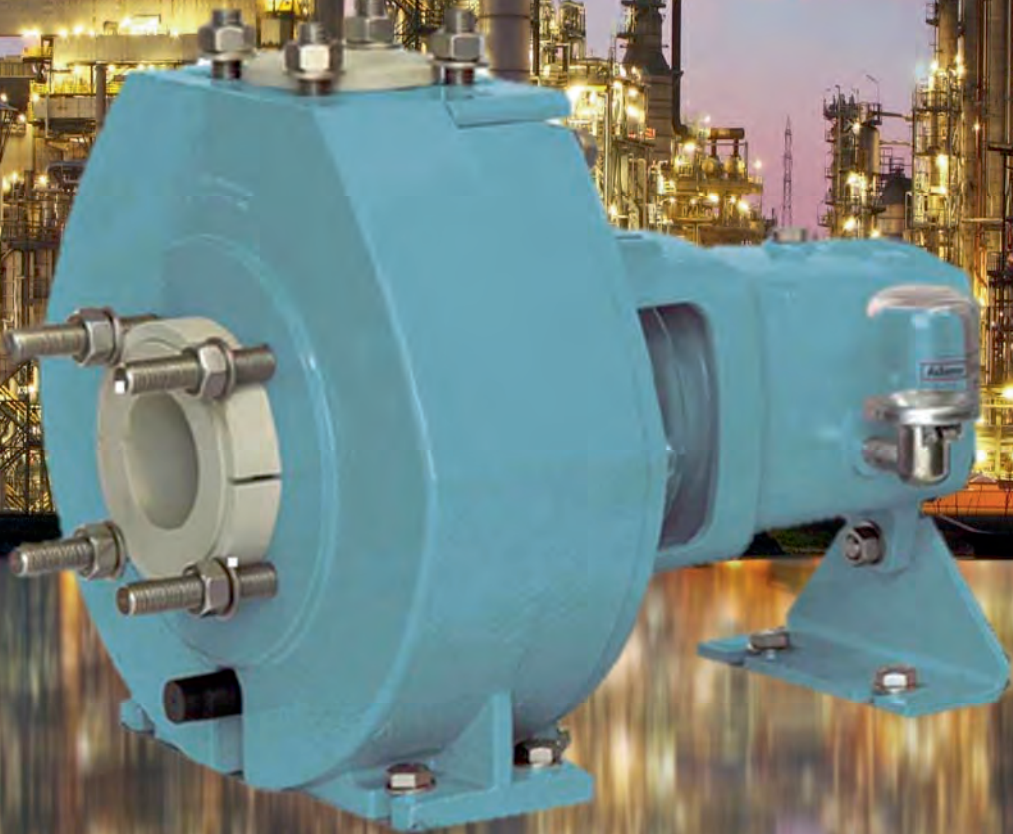


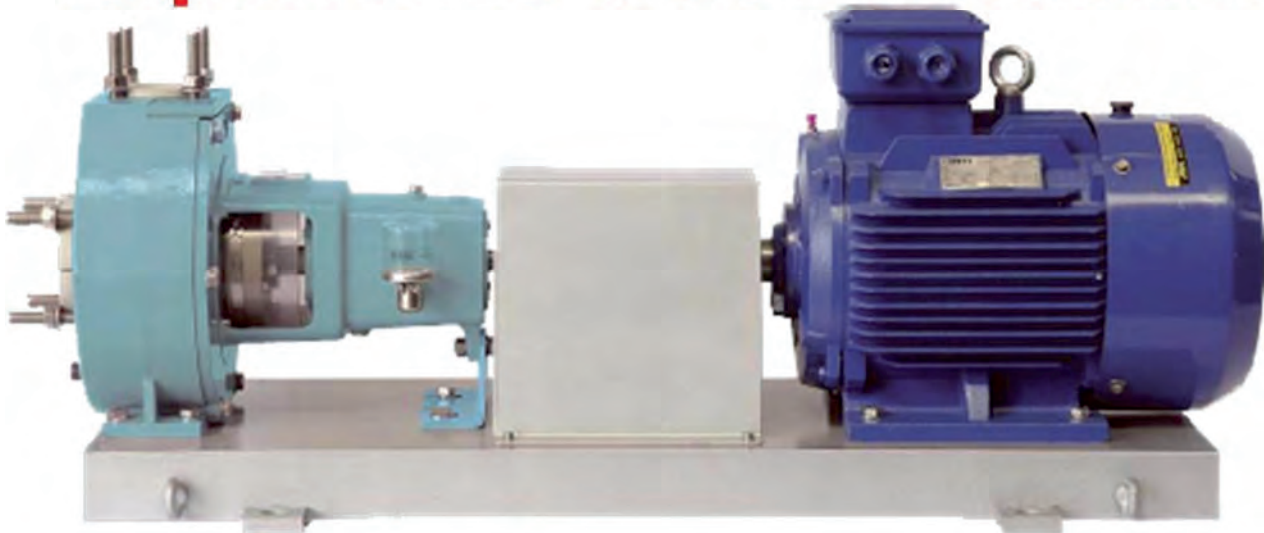
**Sims**  
SINCE 1919

**PVDF Solid Non-Metallic  
Centrifugal Pumps**



***Chemical  
Resistant Pumps***

# Experience and Excellence



**Sims PVDF Chemical Pumps** are machined from solid blocks of PVDF composite and are designed to handle very aggressive chemicals. The photograph above shows a Sims PVDF Chemical Pump fully assembled including the power frame, baseplate, coupling, coupling guard, and electric motor.



**Simsite® Structural Graphite Composite Pumps** excel in marine, wastewater, industrial, and chemical applications, and utilize a phenolic / epoxy resin system. Above is a Sims Chemical ANSI Standard pump with the power frame only.



### MAIN FEATURES

The Sims PVDF (Polyvinylidene Fluoride) Chemical Pump line is a complete range of centrifugal chemical process pumps, built in compliance with ISO2858 (Din 24256-BS5257 - NFE 44121) that are impervious to chemical attack from most chemicals.

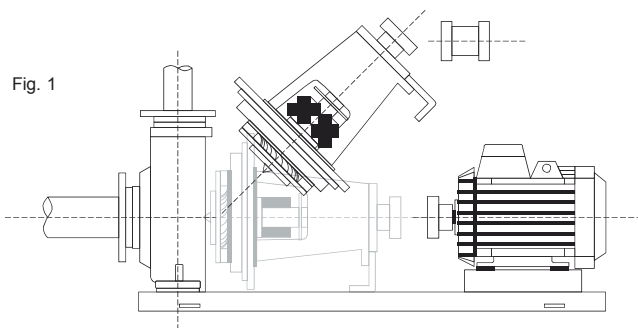
Sims PVDF Chemical Pumps are centrifugal pumps made entirely of PVDF composite, and therefore are corrosion resistant to most chemicals. These pumps are designed for ease of maintenance with standardization in mind, not only for size and performance but also for ease of installation.

### CONSTRUCTION

Sims PVDF composite Pumps are horizontal end-suction pumps with a central top discharge design. The composite impellers are single suction open faced impellers which can be converted to enclosed impellers if required. For maximum integrity and strength, the pumps are machined from solid blocks of composite. The composite casings are designed to accept metallic or composite piping. As process pumps they are designed to accept Simsite® Cartridge Mechanical Seals, as well as any commercially available mechanical seals. These Chemical Pumps can accept external mechanical seals, single mechanical seals, or even double mechanical seals. The pump shaft is supported in a power frame with radial and thrust bearings designed to accept all dynamic loading from all operating conditions. The pumps are oil lubricated and are provided with an oiler to maintain a constant level of oil to make sure that the pump maintains optimum performance.

The PVDF Composite Chemical Pumps are mounted on a composite or metallic baseplate with a motor. The pump is connected to the motor via flexible spacer couplings. Use of spacer couplings enables service of the pump without disconnecting the piping, or removing the motor (Fig. 1).

Fig. 1



### MATERIALS

The materials that come into direct contact with the chemicals being pumped are **extremely resistant** to most chemicals. There are several PVDF Composite versions of the pump, as well as several different types of mechanical seal arrangements that can be used for the parts that come into direct contact with the fluids being pumped. Sims will be able to help you select the proper pump for your application.

### TECHNICAL SERVICES

Engineering service and support is provided directly from Sims Pump headquarters in Hoboken, N.J. Sims has hydraulic design, FEA, and CFD capability and specializes in troubleshooting centrifugal pumps. All Sims Engineers are specialists in impellers and structural composite design, and can design replacement parts and/or complete pumps to meet your specific needs and performance requirements.



Above is a Simsite® Structural Graphite Composite Close-Coupled Pump with motor. Simsite® Pumps are machined from solid blocks of structural composite, NOT cast or molded, which gives them superior mechanical strength.

### APPLICATIONS

Sims takes pride in ensuring you receive the right pump for the right process. Sims Pumps are suitable for acid, hydroxide, and all types of salt solutions in varying concentrations and at various temperatures, as well as mixtures of strong acids, electrolytic baths, aromatic hydrocarbons, chlorides, alcohol, and more.

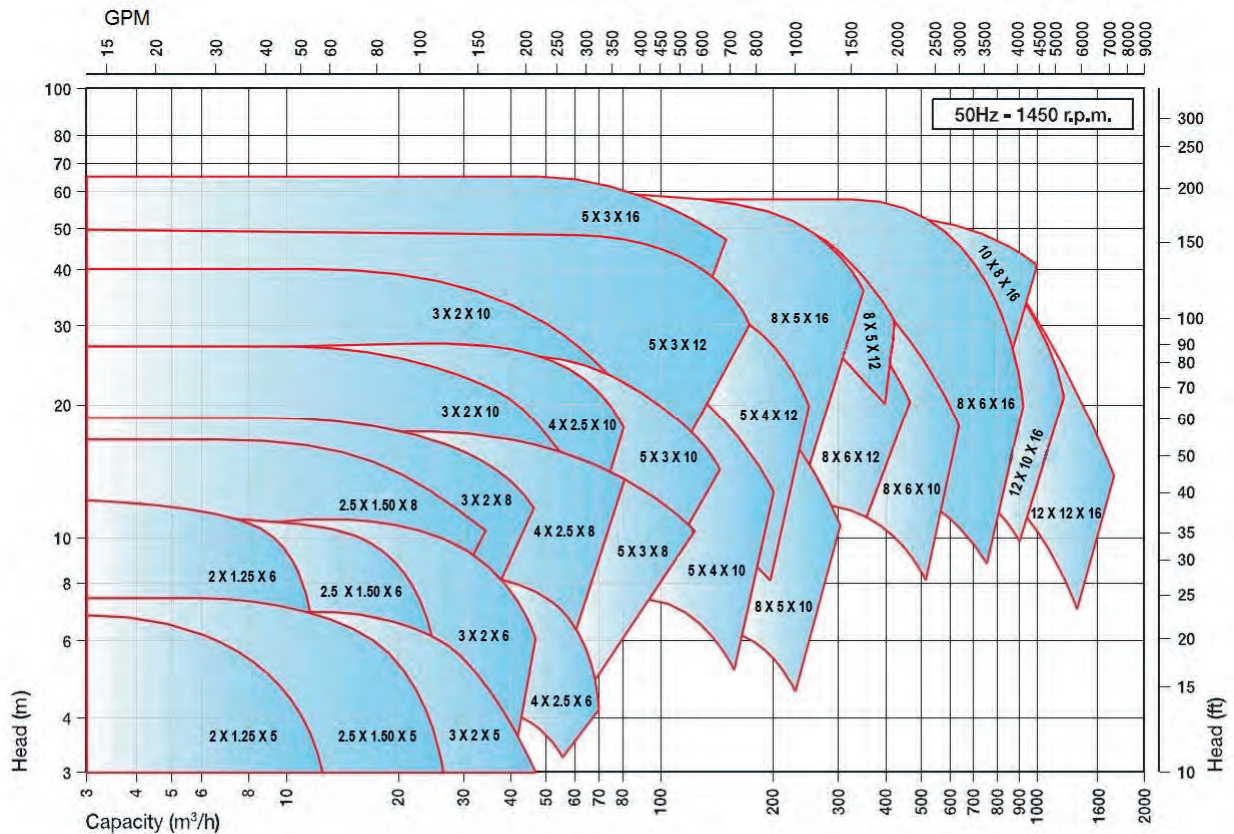
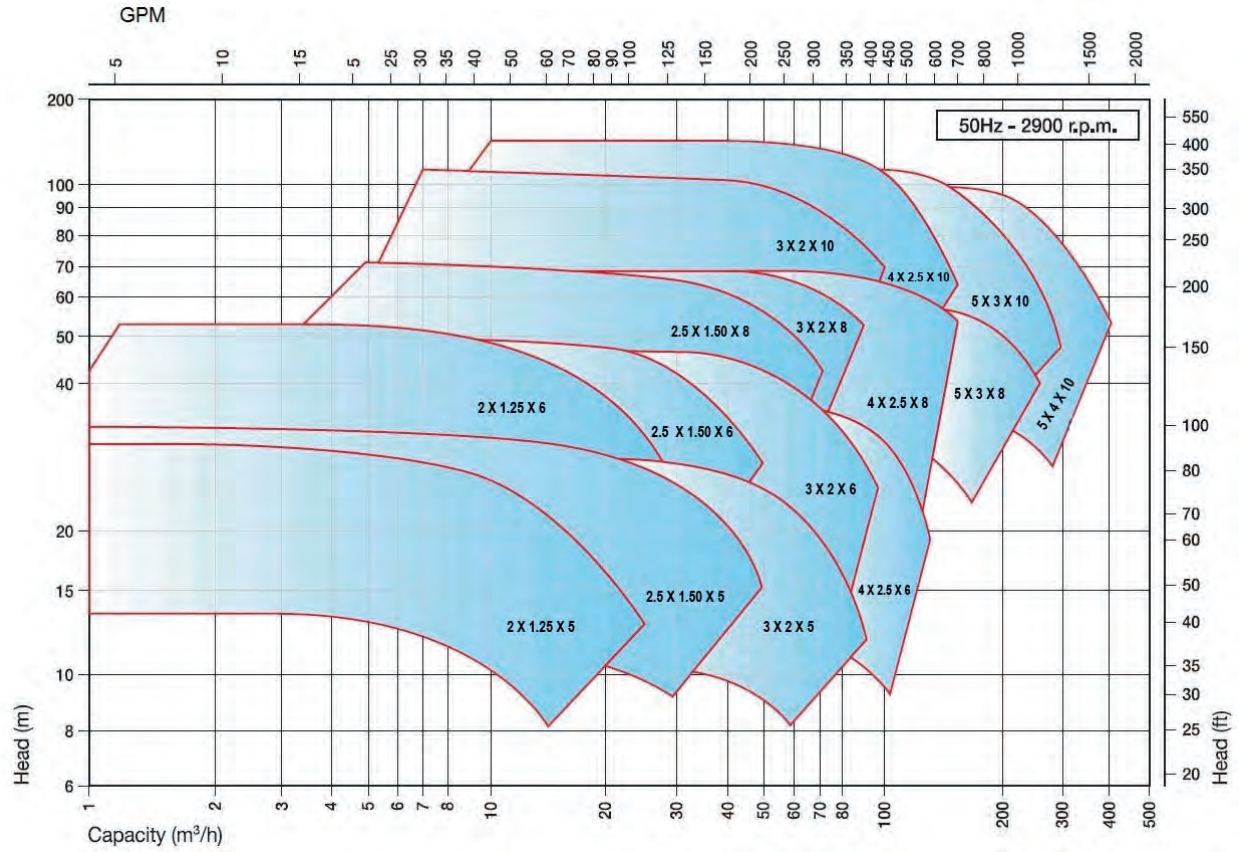
### APPLICATION EXAMPLES

- Chemical and pharmaceutical processes.
- Petrochemical, chemical, and agricultural engineering.
- Textile industries, dye treatments.
- Transfer, loading, and distribution of chemical products.
- Surface treatments (coils and wire pickling and the degreasing).
- Electro-plating treatments.
- Circulating pumps for heat exchangers in anodizing industries.
- Wastewater treatments.
- Scrubbing tower, antipollution plants.
- Fish farm water circulation.
- Thermal and seawater.
- Water purification.

### MOTORS

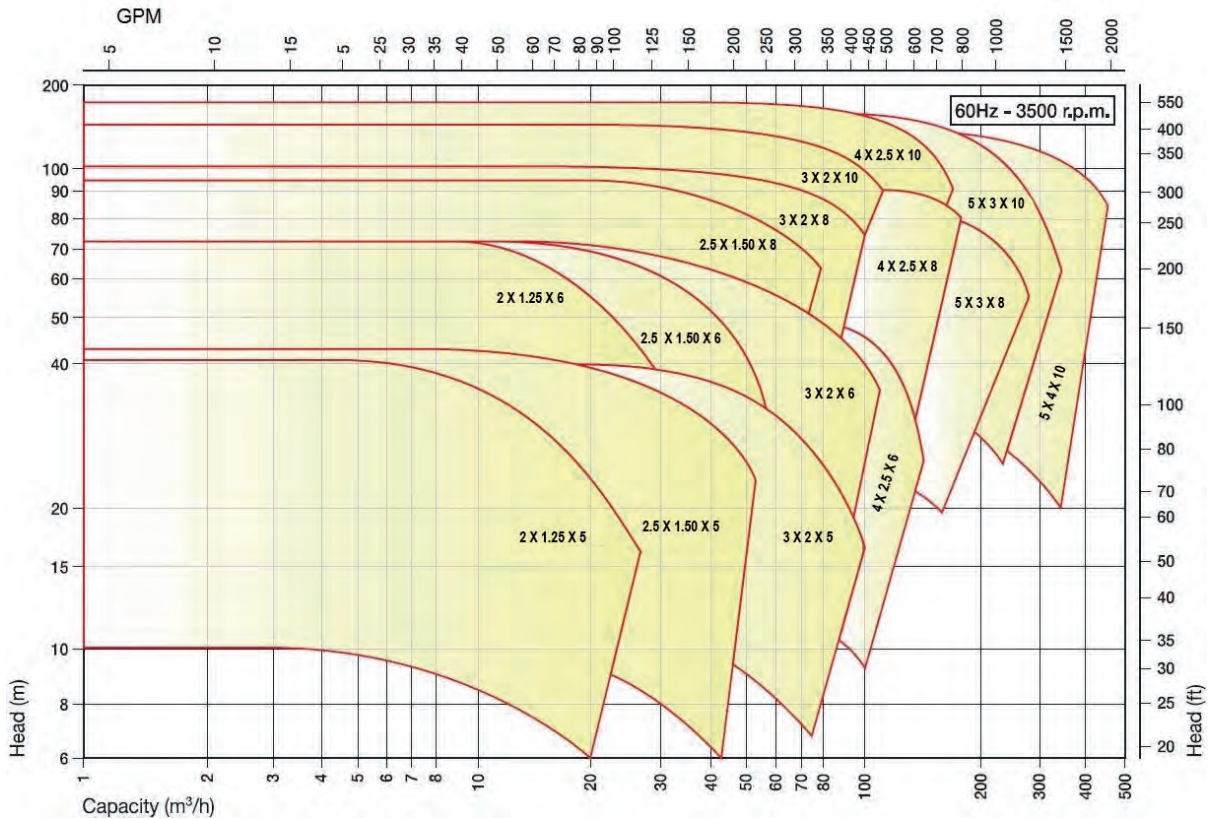
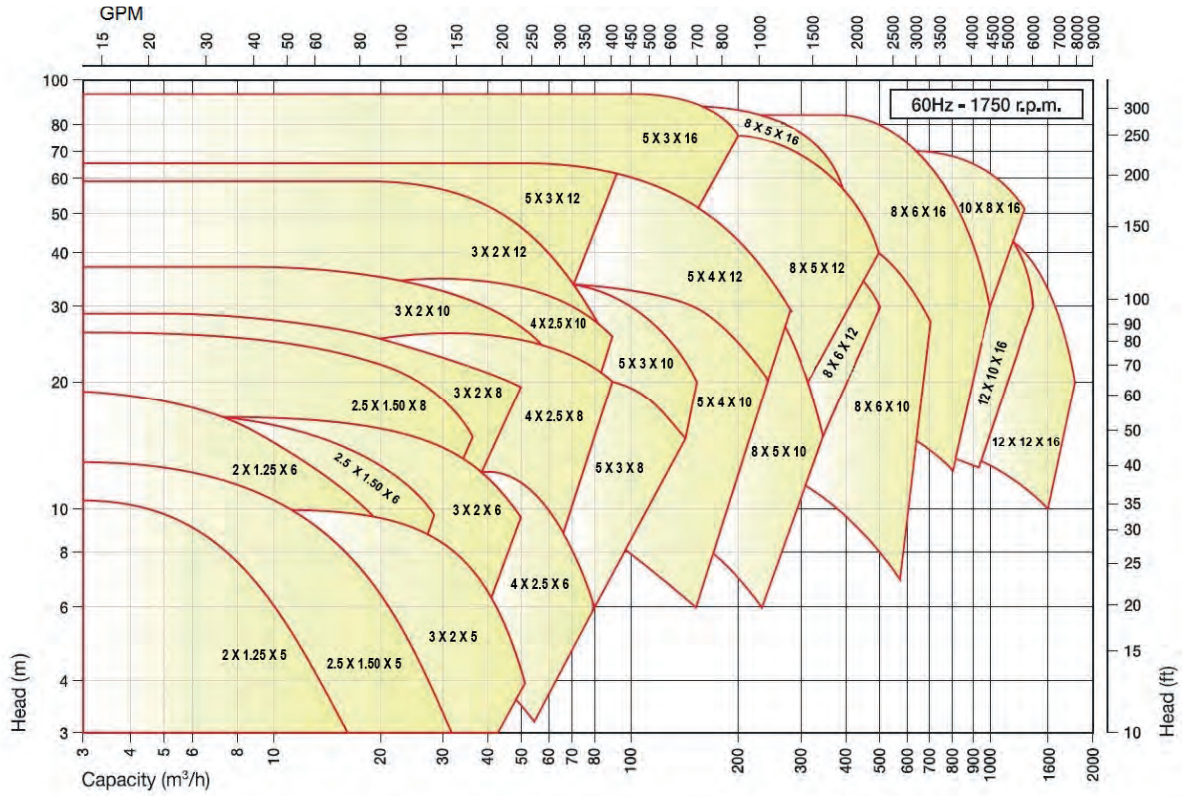
The customer can choose any motor they prefer, or Sims can choose a standard specification for a motor. For example IP55 enclosure, class F insulation, suitable - phase, suitable for 50Hz 440V, or 60Hz 440V). Other specifications are available upon request to meet customer requirements.

**Performance Curves – 50 Hz**



General performance curves for 50 Hz at both 1450 RPM and 2900 RPM are shown above. Please note that Sims Performance Curves reflect water at 68 degrees F (20 degrees C). These curves are based upon the maximum size of impeller available for each model. More detailed curves can be developed for specific performance requirements.

### Performance Curves – 60 Hz



General performance curves for **60 Hz at both 1750 RPM and 3500 RPM** are shown above. Please note that Sims Performance Curves reflect water at 68 degrees F (20 degrees C). These curves are based upon the maximum size of impeller available for each model. More detailed curves can be developed for specific performance requirements.

**MATERIALS**

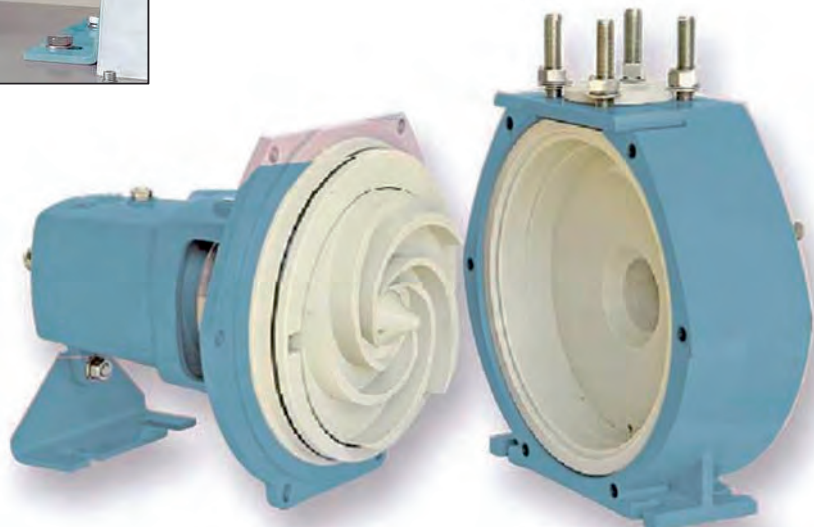
table 1

VERSION	MATERIAL
PUMP CASING	PVDF
IMPELLER	PVDF
BACKPLATE	PVDF
SLEEVE	PVDF
FLANGES	METALLIC
SUPPORT BRACKETS	CAST IRON
BASE PLATE	COATED STEEL OR COMPOSITE

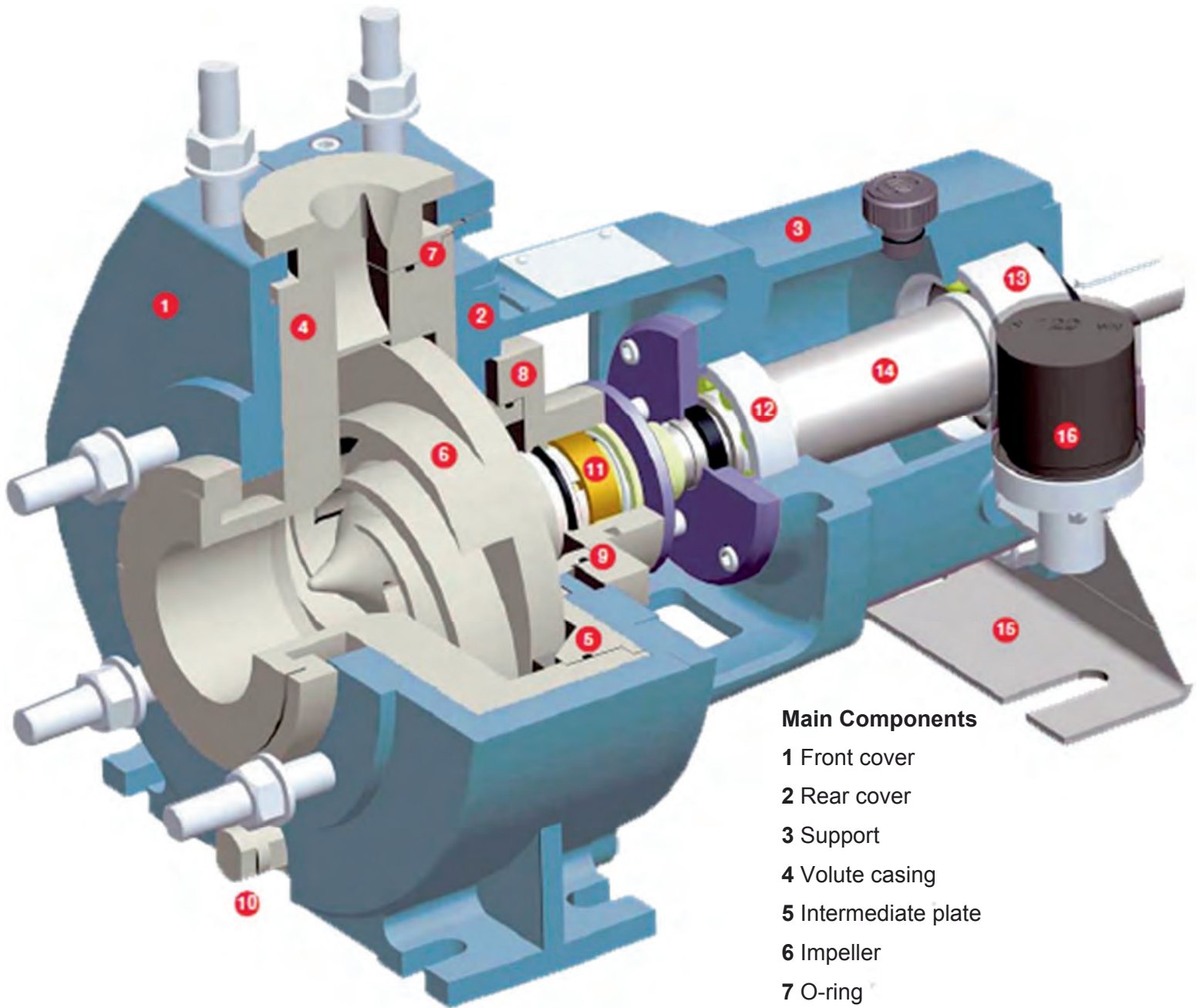
The base resin is polyvinylidene fluoride, or PVDF, a fluorinated elastomer that is highly resistant to chemicals and abrasion and has a high degree of mechanical stability. This material can withstand temperatures up to 120°C (250°F) and can operate continuously at 100° C (212°F). It is extremely resistant to strong concentrated acids, as well as hot solutions of inorganic salts, and has satisfactory resistance to organic solvents, (except for Ketones, esters and acetone).



Sims PVDF Chemical Pumps are machined from solid blocks of PVDF composite, giving them superior chemical resistance, mechanical strength, and balance.



## SECTIONAL VIEW

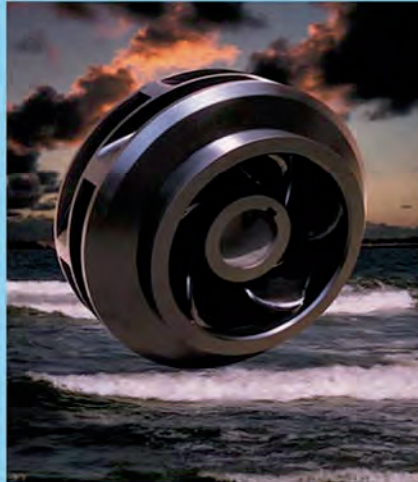
**Main Components**

- 1 Front cover
- 2 Rear cover
- 3 Support
- 4 Volute casing
- 5 Intermediate plate
- 6 Impeller
- 7 O-ring
- 8 Seal chamber
- 9 O-ring
- 10 Drain plug
- 11 Mechanical seal
- 12 Bearing
- 13 Bearing
- 14 Shaft
- 15 Support foot
- 16 Bulb lubricator

# WHEN ONLY THE BEST WILL DO

## SIMSITE® Structural Composite Products

- Longer Life
- Corrsion Resistant
- Lightweight
- High Strength
- No Electrolysis
- Always Balanced
- Higher Efficiency



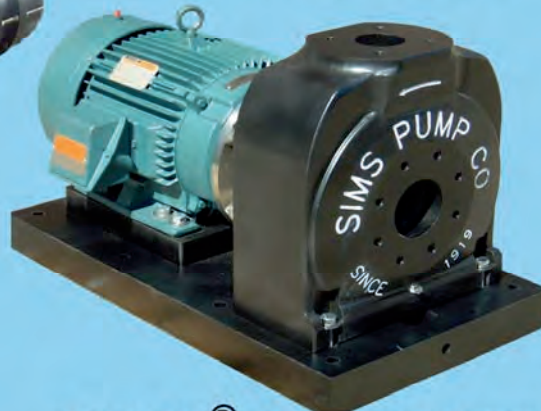
SIMSITE® Impellers for ALL Centrifugal Pumps



SIMSITE® Vertical Pumps



SIMSITE® Vertical Turbine Pump



SIMSITE® Horizontal Pumps



SIMSITE® Impellers and Casing Rings



SIMSITE® Heat Exchanger Doors

# **Simms**

SINCE 1919  
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[WWW.ImpellerStore.COM](http://WWW.ImpellerStore.COM)



SIMSITE® Composite Bearings



**IMPERVIOUS TO SALT WATER CORROSION**