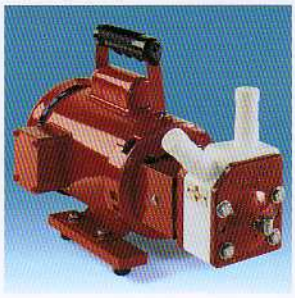
THERMOPLASTIC PUMPS

for corrosive, abrasive, hazardous, and ultrapure fluids

SUMP-GARD®
Vertical
Centrifugal Pumps

CHEM-GARD®
Horizontal
Centrifugal Pumps



FLEX-I-LINER®
Rotary
Peristaltic Pumps

PUMP/TANK
Nonmetallic
Systems

VANTON

Why Vanton has become the preferred manufacturer of engineered thermoplastic pumps:

We not only pioneered the thermoplastic pump, we perfected it.

In 1950, Vanton developed a revolutionary all-plastic pump for use in conjunction with **the first heart-lung device.** The design limited fluid contact to only two nonmetallic parts: a plastic body block and a flexible liner. This was the birth of our Flex-i-liner® rotary pump. Its self-priming sealless design made it an industry standard for the handling of corrosive, abrasive and viscous fluids as well as those that must be transferred without contaminating the product.

We then developed horizontal and vertical centrifugal pumps designed to take advantage of the superior chemical inertness, abrasion resistance, low weight and moldability of thermoplastics.

Vanton now offers the most comprehensive line of thermoplastic pumps in the industry.

This should give you some idea of what our pumps go through before you get them.

We put our pumps through the paces to make sure they live up to expectations. When they leave our plant, we know they are best by test, not by guess. To the best of our knowledge, no other pump manufacturer puts every pump through such a complete battery of hydraulic, vibration and electrical tests.

Vanton pumps are subjected to the following tests wherever appropriate:

1. Hydrostatic test for leak tightness.
2. Operational check of pump performance to specified conditions of service.
3. Vibration evaluation.
4. Noise level analysis.
5. Measurement of voltage, amperage, kilowatts and power factor at varying outputs.

Sometimes the simplest designs yield the most efficient products.

Don't be misled by the apparent simplicity of the design of Vanton pumps. Uncomplicated construction makes our pumps more cost effective and easier to maintain. Here's why:

1. Fluid contact is limited to chemically inert thermoplastics and elastomers.
2. Extensive component interchangability permits wide choice of available materials and the use of many new ones as they are developed.

The simplicity of our designs assures long, trouble-free operation. Since each pump is individually tested and its characteristics permanently recorded for instant retrieval, spare parts can be supplied accurately, rapidly and economically, regardless of the age, or model of the pump.

Our pumps work round the clock. So do we.

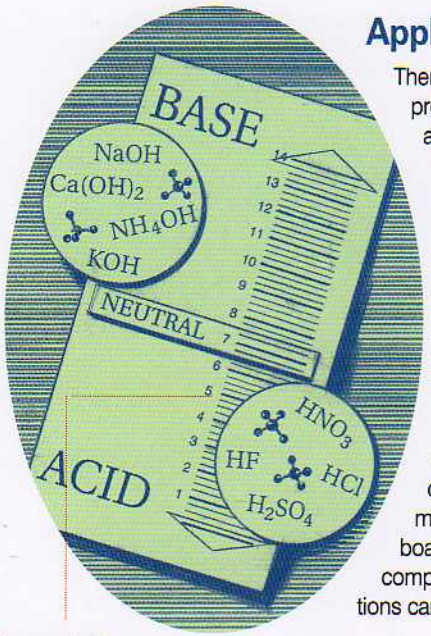
As pioneers in the design, manufacture and application of thermoplastic pumps, we have long been tuned in to the need for **round-the-clock operation** and dependable service.

Whether the problem is related to pump installation or start-up, changing operating conditions or emergency needs, there is never a 9 to 5 work syndrome at Vanton. Early or late, weekdays or weekends or holidays, if you need Vanton service, it's yours for the asking.

Our highly trained worldwide sales/service representatives are as near as your telephone, and if for any reason you can't reach them, there's always a headquarters specialist available by phone, fax, or e-mail.

Check our website for the Vanton office close to you.

Why engineered thermoplastics are specified for handling corrosive, abrasive, hazardous, and ultrapure fluids:



Applications

Thermoplastic components are preferred over stainless steel, exotic alloys, FRP solid materials or linings because they offer broader use for handling acids, caustics, solvents, chlorides, halogens and other corrosive, abrasive or hazardous fluids, even mixed or unknown liquids, plant effluents and waste streams. Their chemical inertness assures purity when handling ultrapure water and other fluids required by chemical and pharmaceutical manufacturers, printed circuit board fabricators, utilities and other companies whose processing operations cannot tolerate contamination.

Thermoplastics provide broad chemical resistance over the full pH range.

Safely and dependably pump process fluids or waste streams of mixed or even unknown chemicals from your laboratory or production facility without worrying about corrosion or metallic contamination.

Although extensive corrosion resistance charts are available from Vanton and other sources, there is no substitute for experience, and no company with as much experience in the application of thermoplastic pumps as Vanton. The latest edition of this Technical Library Index of published data on specific applications is available for the asking.

MATERIALS OF CONSTRUCTION		PROPERTIES			
MATERIAL		MAXIMUM TEMP. °F	°C	SPECIFIC GRAVITY	WEIGHT LOSS (MILLIGRAMS) TABER, 1000 CYCLES
PVC	polyvinyl chloride	140	60	1.30	12-20
CPVC	chlorinated polyvinyl chloride	210	99	1.49	20
PE	polyethylene	200	93	.92-.94	5
PP	polypropylene	185	85	0.94	15-20
PVDF	polyvinylidene fluoride	275	135	1.75	5-10
ECTFE	ethylene chlorotrifluorethylene	300	149	1.75	5-10
PTFE	polytetrafluorethylene	500	260	2.14-2.20	500-1000
FRP	fiberglass reinforced plastic	250	121	3.4-5.0	388-520
SS	stainless steel type 304/316	NA	NA	7.9	50

No contamination of ultrapure water, pharmaceuticals or semiconductor chemicals

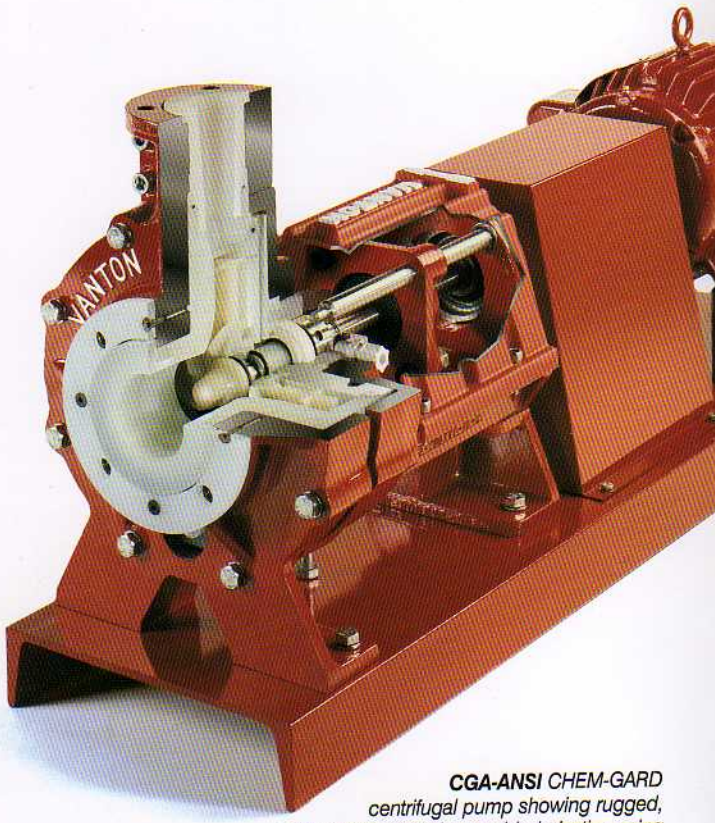
Thermoplastics are one-sixth the weight of stainless steel

Ten times more abrasion-resistant than stainless, five times more than FRP

CHEM-GARD®
Horizontal centrifugal pumps

These heavy-duty and rugged horizontal centrifugal pumps are designed, engineered and constructed to handle corrosive, abrasive and other aggressive fluids, as well as those liquids which must remain free of metallic contamination. CHEM-GARD® pumps are available in a wide selection of thermoplastics and in ANSI/DIN, self-priming, close-coupled and integral pump/shaft motor designs.

Their unique sliding front bearing design asssures minimum shaft overhang, simplifies maintenance, and allows all types of mechanical seals to be utilized. Vanton's unique reverse-mounted seal arrangement avoids metal contact with fluid and eliminates need for exotic metal seals. Rated for flows to 1450 gpm (330 m³/hr), heads to 400 feet (122 meters), and for use at temperatures to 275°F (135°C).



***CGA-ANSI** CHEM-GARD centrifugal pump showing rugged, armored construction, molded plastic casing and impeller, and easy-access seal with sliding bar pedestal design to simplify maintenance. Standard construction materials include PVC, CPVC, PP, PVDF and ECTFE.*

CG thermoplastic centrifugal pump is metal armored

The Vanton CHEM-GARD CG design was the first horizontal centrifugal pump engineered from inception to utilize the unique characteristics of thermoplastics. It is not a metal pump made of nonmetallics. Design features include molded plastic components, tangential discharge, wide open seal area and retractable front bearing to simplify maintenance and accommodate all popular mechanical seals.

CGA centrifugals meet ANSI and DIN standards for process pumps

These end suction pumps combine centerline discharge and back pullout construction with the CHEM-GARD wide open seal, sliding bar pedestal design. They meet ANSI B-73.1 and international process pump standards. Metal armoring of the plastic casing and flanges enables these thermoplastic pumps to handle the same nozzle loadings as metal pumps.

CGV vortex pumps handle solids-laden liquids and slurries

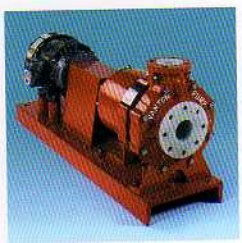
All Vanton CHEM-GARD pumps are available with recessed, dynamically balanced impellers, custom sized and trimmed to suit the shapes, dimensions and physical properties of included solids. CGV pumps are rated for flows to 900 gpm (205 m³/hr) at heads to 240 feet (73 m) with performance for individual applications dependent on the characteristics of the fluid handled. They can be furnished in the full line of thermoplastics and are designed for clog-free pumping of fluids with soft, hard or stringy materials—even with solids to 3 inches (75 mm) in diameter.

CGCC close-coupled pump offers compact size, economy, purity

The CHEM-GARD CGCC close-coupled, thermoplastic pump sees wide use in clean room applications. It offers a small footprint, and limits fluid contact parts to natural, unpigmented PVDF or polypropylene to avoid contamination. CGCC pumps are often specified by original equipment manufacturers as an integral component on standard systems because they accommodate any C-face motor, and are available in chemically inert thermoplastics at relatively low cost for flows to 550 gpm (125 m³/hr) at heads to 220 feet (67 m).

PG PRIME-GARD® pump is self-priming

This heavy-duty, self-priming, centrifugal pump handles flows to 175 gpm (40 m³/hr), making it ideal for acid buggies, sump and tank evacuation, and emergency overload pumping. It is often specified for in-line pump service where headroom prevents the use of vertical pumps, and other applications where self-priming from depths to 15 feet (4.6 m) may be required. These pumps are available in the full line of homogeneous thermoplastics, and the pedestals are interchangeable with all standard CHEM-GARD models.



CGM sealless ANSI centrifugals feature magnetic drive

Vanton magnetically driven ANSI pumps are ideal for handling corrosive, and hazardous fluids. They are constructed with a dual nonmetallic containment can assembly: PTFE for the inner can in contact with the process liquid, backed by a rugged FRP outer can. This innovative design minimizes troublesome eddy currents. The pump conforms to Hydraulic Institute Standards and offers an air cooled, dry running, tertiary seal. Flows to 450 gpm (102 m³/hr), heads to 280 feet (85 m).

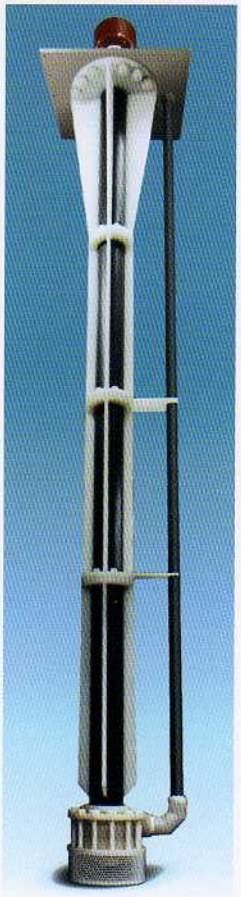
SUMP-GARD®

Vertical centrifugal pumps

Every wetted component in a Vanton SUMP-GARD® vertical pump, including the heavy-wall shaft sleeve, is offered in PVC, CPVC, PP, PVDF, and other non-metallic materials compatible with the pumped fluid. This eliminates corrosion and minimizes abrasion, resulting in lower maintenance, longer pump life, and contamination-free products. SG pumps are configured for sumps to 50 ft. (15 m) deep, and handle flows to 1450 gpm (330 m³/hr), heads to 245 ft. (85 m), and temperatures to 275°F (135°C).

SUMP-GARD pumps are ideal for the transfer and treatment of process fluids, plant effluents and industrial or municipal water and waste streams. They are available with vortex pump heads to pass sludges, slurries and stringy materials as well as fluids with solids to 3 inches (75 mm) in diameter.

***SG** SUMP-GARD pump showing rugged, ribbed column construction, molded casing and impeller, and thick-sectioned thermoplastic sleeve isolating the stainless steel shaft from fluid contact.*



SGL "Giraffe" design overcomes depth and headroom restrictions

The patented construction of these thermoplastic sump pumps keeps all wetted components, including the segmented shaft sections and couplings, isolated from fluid contact. It simplifies and reduces costs associated with shipping, installation, and maintenance. In addition, it makes lengths to 50 feet (15 m) practical, and allows installation in areas with limited headroom. The pumps handle flows to 1450 gpm (330 m³/hr) against heads to 245 feet (85 m), and are available in the same choice of materials as standard SG pumps.

SGK cantilevered bearingless pump has dry run capability

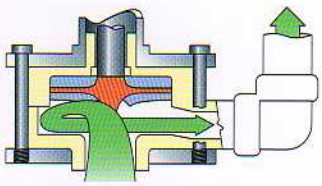
Vanton SGK cantilevered sump pumps feature a large diameter, plastic sleeved, alloy steel shaft that eliminates the need for immersed bearings or bushings, allowing run-dry operation for extended periods. Rugged epoxy-coated cast iron motor bracket accommodates NEMA, IEC, and standard European motors. Lengths to six feet (2 m) (deeper with tailpipe), flows to 1000 gpm (227 m³/hr) at heads to 210 feet (64 m).

SGW vertical pump for semiconductor and OEM applications

The SGW centrifugal pump is a very compact, low-cost unit engineered for use with standard C-face motors, and designed for simple washdown of the motor area without contaminating the pumped product. It is ideal for OEM applications due to high reliability, long service life and low maintenance. It is the preferred choice for computer chip and wafer production, printed circuit board fabrication and other processes involving ultrapure water and chemicals. Rated for flows to 220 gpm (50 m³/hr) at heads to 125 feet (38 m), lengths to 22 inches (.56 m).

SGH integral pump/motor shaft design saves space and reduces maintenance

SUMP-GARD SGH pumps feature integral pump/motor shafts supported by large motor bearings. This low profile design simplifies maintenance and allows easy replacement of the plastic-sleeved stainless steel shaft. Thermoplastic construction of all wetted components ensures dependable pumping of corrosive and abrasive chemicals and wastes, and eliminates metallic contamination. Flows to 350 gpm (80 m³/hr), heads to 180 feet (55 m), and lengths to 3 feet (.9 m).



SGV vortex pump head for sludges, slurries and solids laden fluids

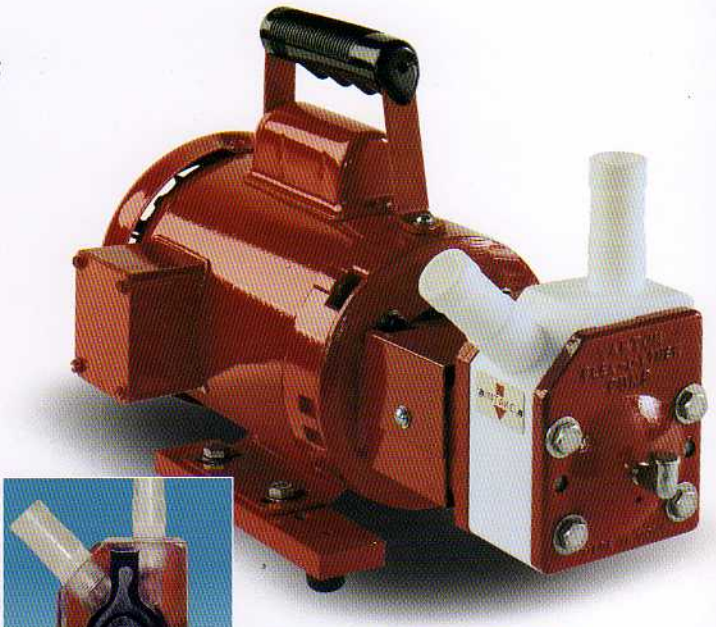
Vanton SUMP-GARD pumps with recessed, dynamically balanced clog-free impellers are suitable for a wide range of sludges and slurries, and fluids with stringy materials or solids to 3 inches (75 mm) in diameter. Wetted components of homogeneous thermoplastics eliminate corrosion and contamination, and minimize abrasion. SGV pumps are rated for flows to 900 gpm (205 m³/hr) at heads to 240 feet (73 m), with actual performance determined by the characteristics of the fluid being pumped.

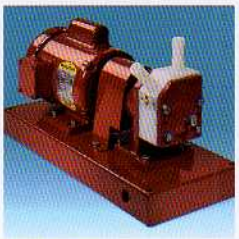
FLEX-I-LINER®

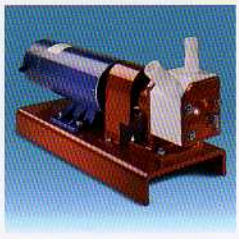
Sealless, self-priming rotary pumps

Vanton FLEX-I-LINER® peristaltic type rotary pumps transfer sample or meter acids, caustics, solvents, salts, chlorides, and ultrapure chemicals—even viscous fluids to 6000 SSU (1300 centistokes) and slurries containing soft solids and abrasives. They are suitable for clear, volatile liquids as well as for vacuum service and gas transfer. Gentle pumping action permits pumping latex emulsions and other shear sensitive liquids.

These sealless, self-priming pumps operate in either direction, wet or dry, in any position. Unique design eliminates shaft seals, stuffing boxes, and other potential sources of leakage. Only two nonmetallic parts contact fluid— the rugged body block and durable elastomeric flexible liner. Maintenance is easy and no special tools are required. Flows from .33 gpm (1.26 lpm) to 40 gpm (9 m³/hr) at pressures to 45 psig (310 kPa). Temperatures to 250˚F (121˚C).







Close-coupled FLEX-I-LINER portable model shown with totally enclosed electric motor. Pumping is accomplished by a rotor mounted on an eccentric shaft rotating within a flexible liner. This creates a squeegee action on the fluid which is trapped between the outer surface of the liner and the inner wall of the pump body.

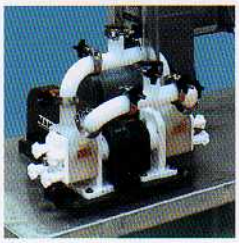
Body blocks are available in polypropylene, UHMW polyethylene and Teflon. Flexible liners can be furnished in natural rubber, Neoprene, Buna N, Hypalon, Viton, and Nordel.

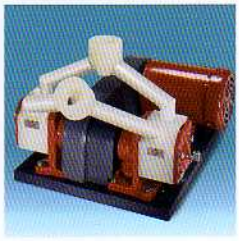
XB & CC models satisfy laboratory, production and OEM applications

FLEX-I-LINER pumps are available close-coupled to an electric motor, or pedestal-mounted with electric motor drive or gasoline engine, as well as air powered when required for handling volatile fluids. For metering with ±5 percent accuracy, variable speed motors or belt drives may be used. Models may be hand carried, installed on casters, or wheel-mounted on mobile equipment for portability.

Dosing is automatic, reliable with variable speed pump

Variable speed FLEX-I-LINER pumps offer automatic dosing capability with dependable accuracy. A sensor immersed in the fluid being treated continuously relays data on pH, conductivity, or other variables, to a controller which adjusts pump motor speed and dosage rate. The design simplicity reduces the cost, maintenance, downtime, and complexity associated with dosing and metering applications.





Sanitary, sealless, metering pump has flame polished body

With no internal crevices, dead spots, threads, seals, or bearings, this FLEX-I-LINER self-priming pump is ideal for sanitary metering of pharmaceuticals, foods, and other contamination-sensitive products. The body block in the unit illustrated is molded of UHMW polyethylene with flame polished interior surfaces, and spin-welded suction and discharge quick-disconnect fittings. The rugged flexible liner is molded of food grade elastomers. Metal never touches fluid.

Drum pump runs dry, self-primes, cuts maintenance

Ideally suited to evacuate drums, the FLEX-I-LINER pump is self-priming, can run dry for extended periods, and is simple to maintain. It also runs slowly—1750 versus 5000 rpm for typical drum pumps—and offers greater safety and convenience in a diversity of situations. Compact in size with integral handle, it fits neatly on drum lids without hazardous protrusions, and has sufficient lift characteristics to operate from the floor, skid or stand.

Air-driven plastic pump handles volatile fluids, gases

For pumping volatile chemicals and gases where safety requirements prohibit the use of electric power, or in remote areas where electric power is not available, FLEX-I-LINER pumps can be supplied with rotary vane air motors which develop 2000 rpm on 90 psi (620 kPa). These motors can be furnished in models for clockwise rotation, or reversible operation to change flow direction. Control of the air motor drive offers a convenient means for varying flow rates within ±5 percent.

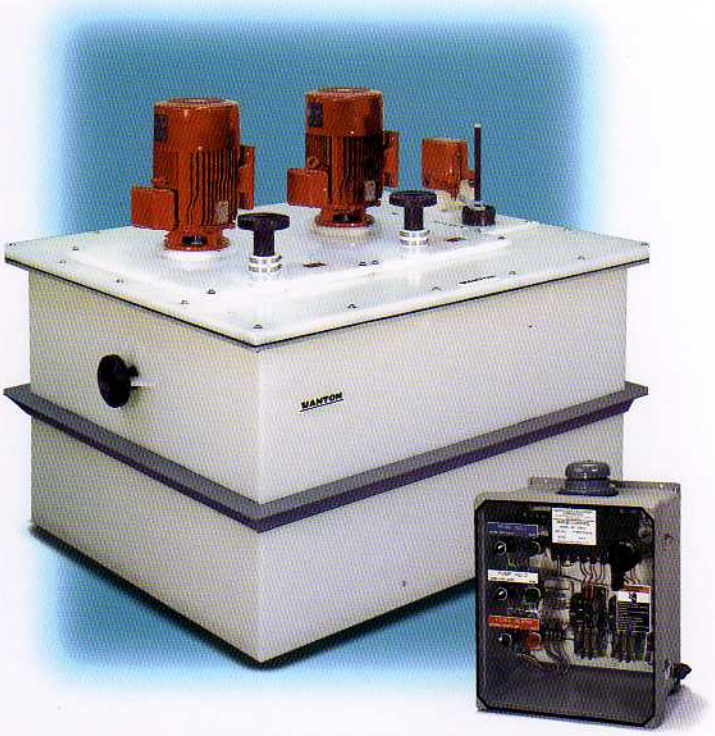
Duplex configuration features high capacity, smooth operation

"Duplex" FLEX-I-LINER pumps offer 70 percent higher flows than "Simplex" configurations while minimizing vibration at higher pressures. One motor/gearbox drives two opposing eccentric shafts oriented 180˚ out of phase/rotation, cancelling pumping pulsations generated within each fluid cavity. Manifolds provide common suction and discharge connections. Duplex systems are available in the same thermoplastic and elastomeric materials as single-stage units.

PUMP/TANK

Integrated, engineered systems

Vanton offers custom and standard, square, rectangular, and cylindrical nonmetallic pump/tank systems in a wide choice of thermoplastics, thermosets, and plastic lined metal. Capacities to 5000 gallons (19 m³). Double wall tanks with built-in leak detection, skid-mounted and mobile designs, and floating pontoon configurations can be furnished with the appropriate thermoplastic pumps, and all system control and monitoring devices including sensors, alarms, valves, actuators, and fully instrumented control panels. All wetted components are of homogeneous thermoplastics or other nonmetallics, all of which resist a wide range of corrosive chemicals, making Vanton pump/ tank systems the ideal choice for collecting, transferring and treating process chemicals as well as mixed and unknown wastes.



"DUPLEX" PUMP/TANK SYSTEM configured with two SUMP-GARD SG Series vertical pumps, rising rod float controls, instrumentation, and control panel to customer specifications.

Cylindrical pump/tanks with capacities to 2500 gallons

Cylindrical tanks of PP, PE, PVC, PVDF, and other thermoplastics are available in capacities to 2500 gallons (9.5 m³). The system shown is equipped with a stainless steel stand, rising-rod level control, and a vertical SUMP-GARD® SG thermoplastic pump. The cover plate is sealed with an EPDM gasket, and the pump is fitted with a FUME-GARD™ vapor seal to protect external bearings and motor from corrosion.

Duplex pump/tank system handles corrosive wastes

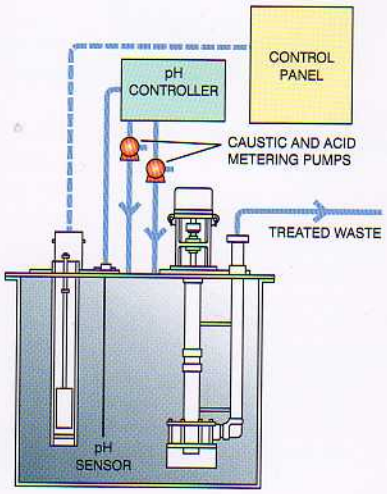
For handling corrosive chromic acid and other plating chemicals Vanton custom engineered this "Duplex" pump/tank system. All pumps, tanks, valves, level controls, and associated piping are skid-mounted, ready for operation upon connection to external piping and wiring. Two PVC SUMP-GARD vertical centrifugal pumps handle flows to 1200 gpm (270 m³/hr), heads to 180 feet (55 m), and temperatures to 140°F (60°C).

Mobile pump/tank system handles diversity of wastes

Vanton mobile pump/tank systems handle a broad range of corrosive and abrasive wastes from multiple sites. This system consists of a 500-gallon (2 m³) cylindrical tank of polypropylene, and pedestal-mounted FLEX-I-LINER® sealless, rotary peristaltic pump rated for 20 gpm (4.5 m³/hr). All wetted components of the system are made of chemically inert thermoplastics or elastomers that provide resistance to a wide range of corrosive, abrasive, hazardous, and toxic wastes.

Double wall tanks provide back-up protection against leakage

Collecting hazardous wastes often requires the added measure of leak protection afforded by double-wall tanks. Primary and secondary tanks are sized and blocked to provide ample void space between tanks to contain leakage. Sensors positioned between walls are linked to a controller which activates visual and audible alarms. These mobile systems are equipped with Vanton SG polypropylene pumps and FlexPlug® valves to provide safe, efficient handling of corrosive wastes.

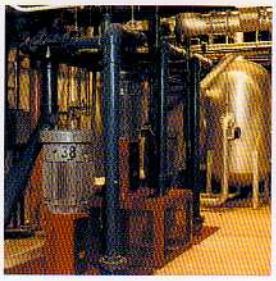


Custom engineered, nonmetallic pump/tank systems continuously adjust and control the pH of corrosive process chemicals and plant wastes

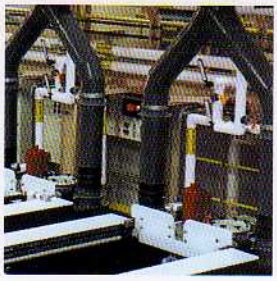
This fully integrated, automatic system is designed to neutralize acids and alkalies by monitoring pH and controlling the addition of sodium hydroxide, hydrochloric acid, or other neutralizing agents. A PLC (programmable logic controller) linked to a pH level sensor controls variable speed Vanton pumps which meter the neutralizing agents. In closed-loop recirculation mode, one or more SUMP-GARD vertical centrifugal pumps create the turbulence needed to mix the solution and prevent the settling of solids. Once the tank is filled, automatically actuated thermoplastic valves open the circulation loop to discharge the fluid. All wetted system components are furnished in homogeneous thermoplastics compatible with the fluids to be handled, eliminating corrosion and minimizing maintenance.

Vanton user-friendly, self-contained neutralization systems simplify compliance with National Pollutant Discharge Elimination System (NPDES).

WORLDWIDE SALES AND SERVICE
website: www.vanton.com



Processing:
chemicals, petrochemicals, pharmaceuticals, pulp/paper, foods, semiconductors, textiles, minerals



Manufacturing:
metal fabrication, electric/electronic equipment, computers, cleaning, pickling, plating, finishing

Water/Wastewater:
municipal and industrial chemical transfer and treatment, lift stations, pH neutralization, filtration

Environmental:
air, water, hazardous/toxic wastes, pollution control, system design, remediation, federal/local compliance

The pioneer and world leader in engineered thermoplastic pumps

Innovative from the start, Vanton is dedicated to problem-solving through close, personal customer involvement. Our product development programs are linked to user requirements for trouble-free pumping of aggressive fluids, eliminating product contamination and helping industry and municipalities meet the challenges imposed by environmental regulations.

Regardless of the Vanton pump you specify, rest assured that it is engineered to provide the ultimate in performance, longevity, and ease of maintenance...and that Vanton's knowledgeable staff of sales engineers, service technicians and over 400 representatives, is devoted to ensuring your total satisfaction. We welcome your inquiries.

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