

PRODUCT NEWS

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FLUID SPILLS: PREVENTION VS. CLEANUP

If you call up, "chemical spills and equipment" on your computer search using Yahoo and Google you'll find more than 5million references that include spill kits, containers, pigs, response carts, caddies, absorbents, drum accessories, gloves, safety kits, leak diverters, spill and drain barriers, wipers, duffel bags, portable spill warehouses for big hazardous spills and many additional items related to the building of berms and dikes in anticipation of spills. Inventory management of fluid inventory is a critical component of the manager's day to day operation. Questions that always arise are whether it is better to purchase smaller, more manageable quantities of the fluid at higher prices which can be poured directly out of a 1 gallon or a 5 gallon container or to purchase larger quantities and then have to deal with transferring the fluids out of the container safely. To top it off, OSHA and EPA have increased environmental health and safety (EHS) regulations so decision making in this area is critical. As we all know, if there is a spill, depending on the exact chemical and volume spilled, the paperwork for the reporting to EPA, if required, is very time consuming, and the cost of lost liquid inventory and clean up time is not an inexpensive proposition either.

The majority of spill problems are involved with getting the materials out of the drums. A large number of companies rely on workmen to manually lift and tip the 55 gallon drum and pour the fluids into a smaller drum, or use a fork lift for lifting and tipping the contents directly into another container or the final application vessel. In either case, spills are inevitable, and spill kits with related mats, pigs, berns and related equipment are necessary. This is obviously true if they are pouring from the 55 gallon drum into a smaller vessel. Overflow is difficult, almost impossible to avoid. If the drum has a faucet, it must be manually lifted to assure it is completely drained. If the faucet has clogged, it must be removed and the remainder emptied. That's a strong invitation to troublesome spills, and incomplete drainage that ends up with the throw-away of costly inventory.

	Chemical Resistance	Fits Container Opening Size	Construction	Operation	Accessories	Fluid Flow	Cost
Gravity Fed Spigot	Wide variety of chemicals	2"	Plastic	Manual/Hand Operated	Telescoping extension tube	Up to 6 GPM	\$30
Siphon System	Polypropylene	2"	Plastic	Manual/Hand Operated	Hose for remote dispensing	Up to 5GPM, leak proof	\$4 to \$13
Suction Action Pump	Polypropylene Polyvinyl Chloride	1 1/2" to 2"	Plastic	Manual/Hand Operate	Hose for remote dispensing	Up to 22-ounces per stroke	\$30 to \$85
Push Action Pump	Polypropylene Polyvinyl Chloride	3/4" to 2"	Plastic Plastic/Metal	Manual/Hand Operated	Siphon tube	8-ounces per stroke	\$12 to \$55
Rotary Action Pump	Ryton® Construction and Ryton® Vanes	2"	Plastic	Manual/Hand Operated	N/A	8-10 GPM, control of fluid is a problem	\$55 to \$175
Pressurized Action Pump	Polypropylene with Nitrile, EPDM, Santoprene or Viton	Multi-size	Plastic	Manual/Hand Operated	Controlled remote discharge telescopic tube	4.5 GPM, leak proof	\$139 to \$249

All of these manual solutions to the problem of drum emptying frequently end up with spills that present management with problems that are OSHA related to work safety or to EPA regulations because of the dangers inherent from fumes emanating from those hazardous and/or noxious materials that are not contained. Management is never happy with the loss of costly, usable fluids, particularly when a low-cost, preventive approach exists. The popular saying that "An ounce of prevention is worth a pound of cure," makes a lot of sense.

That "ounce of prevention" can be found with the use of inexpensive pumps, instead of human strength, in conjunction with mechanical lifting equipment. But the pumps must be able to handle the great variety of aggressive fluids that are being supplied in 55 gallon drums...and do it without corroding or without contaminating those liquids where high purity is involved. In addition, electrically operated pumps present an unnecessary fire danger that must be considered. The pumps selected for transferring these fluids from drums to other containers or directly into application equipment must low in initial cost, easy to repair and maintain, readily available and simple to use. The following pump types are the major non-electric, nonmetallic drum-emptying devices that are currently in use. Here's how they compare in cost and performance.

PULL ACTION PUMP

These pumps operate from the top of the drum. They include a discharge hose that runs down the side and enters into the smaller container. They use an internal plunger that must be pulled up and pushed down to create the suction needed to create and maintain the flow. The fluid flow is erratic and unsteady, emerging with a pulsing, spitting action that can prove a safety hazard. The transfer output with a 2" bung adapter can be up to 22 ounces per stroke and the volume depends on the strength and repetitive action of the employee. They range in price from \$30.00 to \$85.00, have a short operating life, are not field repairable and need to be replaced on a regular basis.

PUSH ACTION PUMP

Similar in action to Pull Action pumps, these units require a simple up and down action created merely by pushing on the top of the pump. They come with a siphon tube long enough to reach the bottom of the drum. They generally deliver up to 8 ounces per stroke, which makes transferring large quantities very time consuming. They range in price from \$12 -55 per unit, are not field repairable and generally require replacement after a few months.

ROTARY ACTION PUMP

This type of pump is threaded into the top of a drum. They are activated by a crank handle which as it turns it builds up the suction and starts the flow. It requires constant cranking to maintain the flow and accurate timing is necessary to avoid spillage when stopping the flow. This is very critical when filling a small container. These pumps offer a transfer rate of 5-20 gallons per minute. They are field repairable but they break down frequently and it is often more convenient and economical to purchase a new pump when the unit fails because the spare parts available cost very close to the original unit which runs \$55 -\$175 per pump.

PRESSURE ACTION PUMP

This pump design is mounted on the top of the drum and is held in place with an airtight rubber compression fitting. Pressure is added by simply pumping the piston several times. This automatically prepares the fluid to flow. Opening the spring-loaded tap starts the flow and closing the tap stops it. Pressure needs to be added from time to time to keep it flowing. Fluids are dispensed in a smooth, continuous stream at rates to 4.5 gallons per minute. An internal safety design relieves pressure if the vessel reaches 7psi. This meets UN safety standards. These rugged, all plastic pumps, at a cost of \$139 to \$249 per unit, have a life expectancy of 10 years and an extremely low anticipated maintenance cost for an annual or bi-annual change of an O-ring. Identified by their trade name, GoatThroat, the pumps are furnished with all fluid contact components made of polypropylene, a thermoplastic material that is light in weight, will not corrode, and is widely used in the chemical, pharmaceutical, food and other process industries that require resistance over a broad pH range of acids and caustics as well as solvents.

The four nonmetallic pumps described above make it clear that when it comes to solving the problems of handling the environmental and workplace problems created by liquid spills, prevention beats clean-up by a wide margin.

LET OUR INDUSTRY EXPERTS HELP YOU TO SELECT THE RIGHT PUMP FOR YOUR FLUIDS.

- Visit our website: www.goatthroat.com
- Call us: 866 NewGoat (639 4628)
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