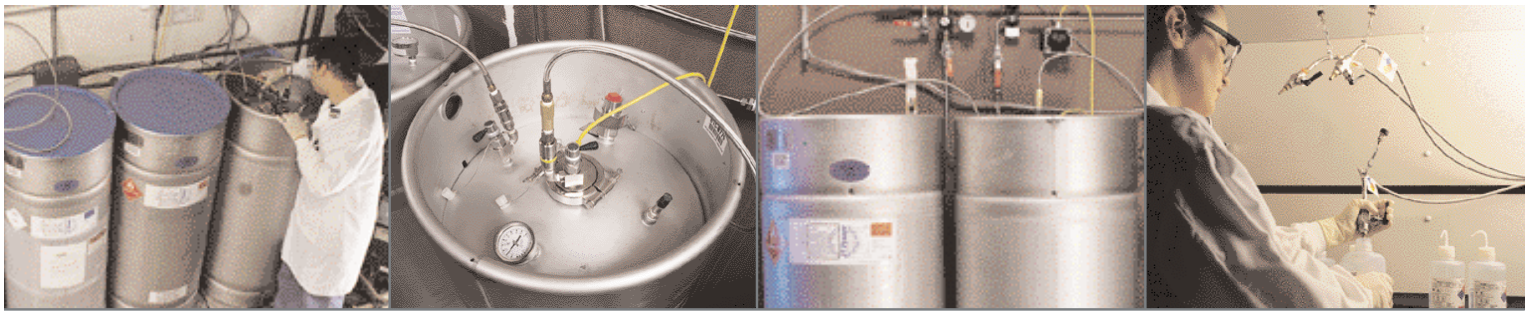


MG Scientific

National Sanitation Foundation

Type of Company:
Certifies products to meet association standards

Location:
Ann Arbor, MI

Concerns:
Decrease solid waste

Employee Safety

Reduce QC checks for solvents

MG High Purity Solvent Delivery System

National Sanitation Foundation ("NSF") was searching for ways to reduce waste. When Aaron Brackman, Exposure/Extraction Group Leader at the Ann Arbor based organization, began looking at the volume of packaging waste generated by solvents used in their laboratories, he saw a huge opportunity for waste reduction simply by changing solvent containers. He discovered the MG High Purity Solvent Delivery System, and knew he had found his solution.

"NSF certifies products to meet certain standards set by a consortium of associations, plus the EPA and NSF. We test products in our chemistry labs and physical labs. If the product meets the standard, we certify it with our certification stamp," explains Brackman. "For example, let's say we needed to test plumbing pipes. Before the pipes are certified, we test them chemically and physically. I work in one of the seven chemistry labs, and we would test the pipe by soaking it in a water solution. We take the water sample and add methylene chloride to it."

Decreasing Solid Waste

"We were generating a great deal of waste by using methylene chloride, which was packaged in 4 liter bottles, four per box. The box was made of cardboard, and the bottles were protected by Styrofoam on the inside. We were going through four to eight boxes every week. And the bottles had to be rinsed, which generated more hazardous waste. The bottles were also a safety concern when they were broken in the trash. That was a lot of waste. We needed a solution," continues Brackman. "I knew there were several products on the market that would meet our needs and asked our MG representative if he had any recommendations. He told me about the MG High Purity Solvent Delivery System and recommended the JT Baker CYCLETAINER® brand. The product not only met our expectations, it exceeded our expectations.

"We chose this system for a few reasons. First, MG Scientific was able to provide us with the support we needed to show potential cost savings. Second, the brand of solvent is important because of the type of tests we perform, and we considered JT Baker's solvents a good fit. The solvent must be very clean," notes Brackman. "Because of this new system, we received an award at the 4th Annual Washtenaw County Waste-Knot Awards Program. We were honored with the 2001 Waste-Knot Award, which is an annual environmental award for reducing solid waste. We were disposing of several cardboard boxes and a lot of Styrofoam, instead we now have one 215-liter reusable tank. It is great."

Increasing Employee Safety

Protecting employees is a concern at any laboratory. NSF uses methylene chloride, which can have adverse effects on the nervous system, liver, cardiovascular system and blood by inhalation or absorption through the skin. It is suspected of causing cancer in some cases. "Besides reducing our

solid waste, the MG High Purity Solvent Delivery System has helped to protect the safety of our employees as well. We are handling the solvents less, so there is less chance of inhaling and less exposure to the skin. With the easy to use dispensing systems there is less spillage and breakage so we are using less solvent, too," explains Brackman.

Reducing Solvent QC Checks

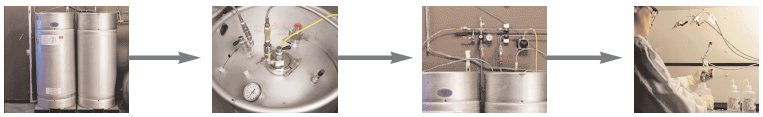
"We have also decreased the risk of contamination of the solvent with the MG system, because the container is sealed. And now when we're testing batches, they come from the same lot within the 215 liters of solvent. We always QC the solvent when we receive a new lot. When we were using the bottles, we might have had more than one lot received during the week, so we were testing more often. From lot to lot there are different impurities due to the environmental conditions at the manufacturing facility or the ingredients used to manufacture — they have different lot numbers, per production run. Before we were always testing, and maybe two or three lots out of a dozen lots were not up to our standards. Now we're saving a lot of time by having to test the solvent less often."

System Installation

The first step of system installation is an on site survey by MG Scientific's experts. The volume and types of solvents used are reviewed, along with the physical configuration of the laboratory and warehouse areas. MG determines system requirements and recommends a specific system for the installation. A detailed diagram is developed showing solvent container location(s), piping and dispensing locations, along with the system cost. Once the plan and budget are approved, MG makes all arrangements for installation and supervises the entire process.

"We have the MG High Purity Solvent Delivery System installed in the Extraction Lab, providing solvent to different fume hoods," says Brackman, describing the installation. This configuration is one approach and is shown below.

Delivery	Hook Up	Piping	Dispensing
MG delivers solvent in containers	Containers hook up at loading dock	Stainless steel pipes carry solvent to lab	Solvent dispensed in fume hood



MG Scientific's Role

"We have been working with MG for about two years," notes Brackman. "They are great to work with. Their pricing is competitive, and they are able to provide expertise in the field. Their service is great, especially their timeliness. I don't need to do as much ordering now, because they automatically refill the solvent tanks. When I did, though, I always used the Internet. The order process is really user friendly. I met Jim McKeown during our evaluation of the MG High Purity Solvent Delivery System, and he was very helpful during the process. We enjoy working with MG."

MG Scientific
Supplying laboratories since 1985
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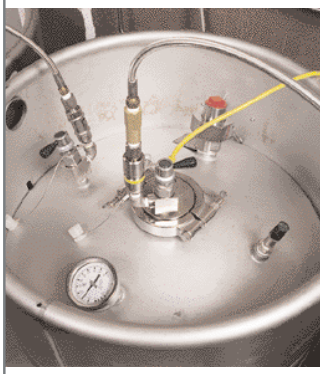
The Quick Connect feature facilitates an easy, safe connection from the CYCLE-TAINER® to the pipe system.



As a safety feature, solvent flow is automatically shut off when the valve is disconnected. The system carries an FM rating for fire.

Pipes are installed to run from the containers to each laboratory. One container can feed several laboratories.

Dispensing within the hood area with just the push of a lever is safe and convenient.