

Safety concerns puts premium on metal detection

Safety concerns in the food and beverage industries are increasing, with one result being that blowmolders have been forced to take on more quality assurance tasks. One near Toronto supplying blowmolded bottles to the food and pharmaceuticals market was requested by an unidentified customer to add metal detection capability to its arsenal.



Fortress Technology offers metal detection with purpose-built conveyance systems.

The processor invested in two Standard rectangular metal detectors, integrated with a Vector conveyor system, all supplied by Toronto-based metal detection equipment manufacturer Fortress Technology Inc. Adam Lang, marketing manager at Fortress, says the equipment was installed following the processor's processing machinery, prior to case packing. The conveyor is a separate component, housing the metal detector; Lang says his firm typically sells the complete conveyor/detector system, as it's imperative that the conveyor is built to minimize noise that can interfere with the detector.

The conveyor transports the bottles through the metal detector. If metal is detected, the detector sounds an error signal and also blows the contaminated product off the line.

Lang explains that there are two types of metal detection systems typically of interest to plastics processors: standard rectangular systems with integrated conveyor for finished product or bagged raw material (see photo), and gravity systems for inline inspection of free-flowing bulk dry materials. *Fortress Technology Inc., Scarborough, Ontario; +1 416-754-2898; www.fortresstechnology.com*

Technology produces virgin-like pellets from PET bottle scrap

The Vacurema Multi-KT process permits recycling of washed post-consumer bottle flake that has the purity of virgin resin. The inherent viscosity (IV) of this PET bottle flake can be increased from starting values of about 0.76 to melt-filtrated



Erema PET reprocessing system Vacurema Multi-KT 2016T-VS produces virgin-like regrind.

pellets with IV levels of 0.82 or better, at virgin material rating, without the help of chemical assistance or conventional solid state polymerization reactor (SSP) technology. This imparts an improved cleaning effect to the process, which meets FDA standards of produced material. The manufacturer says that unlike other PET recycling processes that use extrusion, the Vacurema process features intensive drying and IV increase of bottle flake in high vacuum before the extrusion process. Pre-dried, crystalline PET is then added, which reduces the change of hydrolytic degradation in the extruder. It is also said to save up to 30% in energy costs compared to competitive systems. *EREMA Ges.m.b.H., Ansfelden, Austria; +43 732 3190105; www.erima.at*

Three colors on LSR press with one barrel and one injection unit

Using a 110-ton all-electric Toshiba injection molding machine, Fluid metering equipment, Gayson coloring, and a new Dow Corning liquid silicone rubber (LSR) material, a white 10g plaque, with overmolded Toshiba blue and red strips (84 cm², each), was molded on one machine with one barrel thanks to a novel tool.

The key was a new M.R. Mold tool technology, wherein colorants are introduced to clear LSR inside the mold via their own valve-gate runner nozzles, keeping the metering equipment, screw, and barrel free of the different colors. The two-cavity tool features a six-drop valve-gate cold-runner system. In the system, the red and blue stripes were overmolded simultaneously onto the white plaque via a slide mechanism in the tool. By mixing in the colorant in the cavity instead of the barrel, the need for time-consuming purges is eliminated, and multimaterial LSR parts without multiple injection systems are made possible, saving costs and setup times. M.R. Mold sells a line of proprietary silicone baking cups, provided in a variety of colors, which heretofore necessitated long changeover times to fully purge colorants prior to molding a new color cup. With the new system, each cavity could receive its own coloring on the same machine, with no changeover downtime. Those cupcake cups are molded in an eight-cavity tool, and M.R. felt it could apply this system in that tool, for potentially eight different color LSR parts in one machine cycle. *Dow Corning Corp., Williams Township, MI; www.dowcorning.com; Fluid Automation Inc., Wixom, MI; www.fluidautomation.com; Gayson Silicone Dispersions Inc., Barberton, OH; www.gayson.com; M.R. Mold & Engineering Corp., Brea, CA; www.mrmold.com; Toshiba Machine Co. America; Anaheim, CA; www.toshiba-machine.com.*