Not your Ordinary Labels

DEL WILLIAMS

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In the chemical industry, simple adhesive labels are anything but simple.

To protect the public from danger and the manufacturer from liability, chemical industry labels not only identify ingredients, proper use and handling, but also warnings, first aid, emergency procedures and such, typically on the product, packaging, and transport container. Product labels must stay legibly adhered, with the proper substrates, adhesives and inks, usually for the life of the product. These labels often must comply with regulatory and hazard communication standards from agencies such as OSHA, the EPA, NFPA, or DOT.

Labeling for transport containers, including fuel and chemical carriers, may have to withstand sun, moisture, abrasion, heat/cold extremes, power washing, and cleaning with solvents on a variety of surfaces.

Since variable data and changing regulation can render pre-printed labels “obsolete,” labels are often printed in small quantities to avoid wasted inventory. In addition, these “simple” labels must simplify inventory management, enhance quality, and keep the unit price affordable, while helping to meet manufacturing standards such as ISO 9001.

Although labeling is admittedly the *last* thing a chemical manufacturer considers when bringing a product to market, labels play a vital role in the industry, and can even help to boost new sales. By following a few advanced label-printing tips,

manufacturers can meet their regulatory, quality, sales and inventory management requirements more easily than ever.

Print on Demand for Labels

Perhaps the most significant development in label printing in the last decade is the introduction of print on demand (POD). Although widely adopted in recent years within the book publishing industry, POD has only recently established a foothold with label printers as the technology has been adapted for label printing, and more shops make the capital investment in the equipment.

POD label presses are full-color digital print systems that offer greater flexibility than conventional presses, specifically in terms of job setup and changeover times. For the chemical industry, POD printing of labels reduces lead times, improves supply chain management, equates to shorter run lengths and minimal stock holding, and satisfies the requirements of variable data and other last minute changes.

“POD provides greater flexibility, faster turnaround time and the ability to make last second changes and adjustments,” says Eric Marschner, co-owner of American Label & Tag, a Canton, MI-based manufacturer of custom labels, tags, decals and nameplates that is now offering POD for labels. “For the chemical industry, the ability to quickly produce and receive custom labels is appealing when compared to the longer runs of labels using conventional label presses.”

Quick label turnaround can sometimes help to boost sales and open new markets, as it has for Phoenix Dental, a Fenton, MI-based dental product manufacturer with the motto “Better Dentistry Through Chemistry.” When Phoenix Dental, Inc. sought to expand sales of Super Seal, its potassium oxalate chemistry product that prevents tooth sensitivity, quick label turnaround was crucial.

“Our Japanese market required product immediately, and in order to ship it that same day we needed lot labels completed,” says Sherry Moffitt, Phoenix Dental’s Chief Development Manager. “Traditional label printing would have caused an unacceptable delay of at least 1 to 2 weeks, and the quality could have been compromised if rushed.”

“American Label & Tag printed the labels digitally on demand and hand-delivered them to us that afternoon with fine quality,” explains Moffitt. “We were able to ship the same day and kept our promise to our key Japanese customers. Now the market is growing nicely.”

POD can also help shorten the time between spotting a market need and getting a new product to market.

“When we spot a market need, American Label & Tag can create within a week a labeled, packaged prototype for us that we can put into prospective customers’ hands,” adds Moffitt. “It has definitely helped us close some deals and will play a necessary part in the launching of several new products.”

One-Stop Shop Capability

Despite POD's potential, traditional label printing is still less expensive for longer production runs — if turnaround time is not an issue. Yet with Just In Time manufacturing and frequent changes due to variable data — such as date, shift, lot, product, or operator ID number — the clock is always ticking on chemical industry labels, so to speak.

When turnaround time is of the essence, an expert "one-stop shop" label printer can eliminate bottlenecks and expedite delivery. By definition, a label printer that must outsource any aspect of the project automatically delays turnaround time. Outsourcing a die, for example, will add a week or two; not to mention opening the possibility that the die maker could be backlogged or fail to deliver as expected.

Instead, label printers that are vertically integrated such as American Label & Tag, with all the capabilities from design and prototyping to die making and shipping, can turn jobs around much faster. With the addition of POD, turnaround time and the desired look has never been faster.

"With today's economic challenges, if a company stumbles once it may not get another chance," says Moffitt. "If I am ever in a jam, I turn to a one-stop shop like American Label & Tag. Since they're capable of everything from design and graphics to die making and digital printing on demand under one roof, we can get labels, tags, material safety data sheets, marketing material and more in as little as one day when needed."

Vendor Managed Inventory (VMI)

When chemical manufacturers may produce many products, with different sizes, materials and labeling requirements, maintaining proper label inventory can be expensive and time consuming. In such cases, VMI — where the vendor holds the inventory and releases it to the manufacturer on an "as needed" basis — is worth considering. Similar to just in time manufacturing in automotive, it reduces upfront inventory and handling expense, and can even enhance quality.

"The pay-as-you-go option of American Label & Tag helps us maximize our cash flow, buying power, and labor efficiency," says Brad Cox, Chief Operations Officer of Phoenix Dental. "Instead of ordering, buying, and storing our next three runs of labels, tags, or marketing materials in-house, as we did previously, we can now secure the materials at bulk rates, have them stored in their climate-controlled conditions until needed, and order them about a week in advance."

"In partnering with them, we're saving about 33% on labeling-related costs," concludes Cox. "The quality is fine, and our delivery and product development is faster. We're more competitive, expanding our market share, and growing into new markets."

Label Optimization

Getting the right labels on-site is just part of the job, according to Marschner. Companies like his work in partnership with the manufacturer or packager to produce the right label, while keeping costs down.

“For cost efficiency, chemical industry manufacturers not only need to know how many labels are on a roll, but also how big the roll is, which way it’s oriented, and how it’s going on and coming off,” says Marschner. “An effective labeling partner will look at all the factors, including consolidating or standardizing where possible to deliver the best product at the best price.”

Bar code labels used for product identification and inventory control can be produced in different materials. To optimize these Marschner says, “From box, bag, and tote labels to drum, carton, and container labels, all bar code designs should be designed to be scanned and verified in-house before and after production, and consecutive bar coding should be available.”

Full material traceability, or back-tracking the supply chain and handling of all a product’s raw materials, can also help to prevent or limit potential recall if there’s ever a question of sub-par product, materials or processes. This protects both the manufacturer and the consumer.

Companies like American Label & Tag, for instance, can provide full material traceability for labels with a unique bar code system issued to all incoming raw materials from suppliers. The bar coding stays with the material in-house. Label bar code testing and verification also ensures that all are readable before shipment, which safeguards against potential returns to the manufacturer.

Label Substrate & Adhesive Expertise

Chemical industry manufacturing can require labeling that should remain legible and fade-resistant for years. Other labeling, such as that used in internal manufacturing processes may be designed for easy removal or repositioning.

“Since label substrate and glue/adhesive requirements can vary widely, it’s best to work with a partner who can explore your needs and guide you to the best options,” says Marschner, whose company has refined its label substrate and glue expertise by working with industry giants such as 3M for decades.

For many types of caution, first aid, or personal protection labels used in the manufacture, transport, storage, or disposal of chemical products, Marschner suggests labels in coated, pressure-sensitive paper form or vinyl, with ultra-violet protection for durability and outdoor use.

As for internal production processes, printer compatible labels can be made to apply and cleanly remove from nearly any surface with no residue. This enables containers to be continually reused without a special placard label or labor to scrape off the old label.

Labeling for transport containers, however, including fuel and chemical carriers, may have to withstand sun, moisture, abrasion, heat/cold extremes, power washing, and cleaning with solvents on a variety of surfaces.

“On the toughest applications, a multi-layered material of thermal mylar and high-strength acrylic adhesive can make sense,” advises Marschner. “Labels can be designed to withstand temperatures up to 300 °F, and a clear mylar lamination can be nearly impervious to solvent with great abrasion resistance.” In an industrial environment, labels like these can be designed to withstand 120 minutes of direct power spray with a cleaning solution and can be scanned within six feet for convenient inventory control.

Returnable containers also require labeling when transporting product to ensure proper handling, along with identification and destination info. Transport rack labels can typically require variable data with two different labels on every shelf.

“For transport label applications ranging from steel and corrugated plastic to thermoformed containers and knock-down returnables, polyester over-laminated with clear mylar is a popular choice,” says Marschner.

Product & Brand Security

Tamper-evident labels, with nicks or perforations that cause the label to fall apart when tampered with, are found in the chemical industry. While these can be sufficient, more advanced security options should be offered by a reliable label vendor.

“Secure labels that fall apart when peeled up or read ‘void’ in the residual adhesive are available,” says Marschner. “This can discourage trying to attach the label to another product or container.”

“For greater security, micro text, visible watermarks, color shifting inks, holograms, and difficult alignments are becoming viable options to protect chemical industry products from counterfeiting and bootlegging, which can be a problem overseas,” adds Marschner. “More covert means such as hidden overprints, graphic characters, encrypted codes, and invisible inks or images detectable only in ultra-violet light are options as well.”

American Label & Tag Inc. is a quality manufacturer of custom labels, tags, decals, and nameplates. It maintains all approvals for its labeling products, including cGMP, ISO 9002, ISO 9001-2000, QS 9000, and UL certification.

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