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PAPER, FILM & FOIL CONVERTER

p26 **Special Report**

RELEASE LINER

Threats & Opportunities

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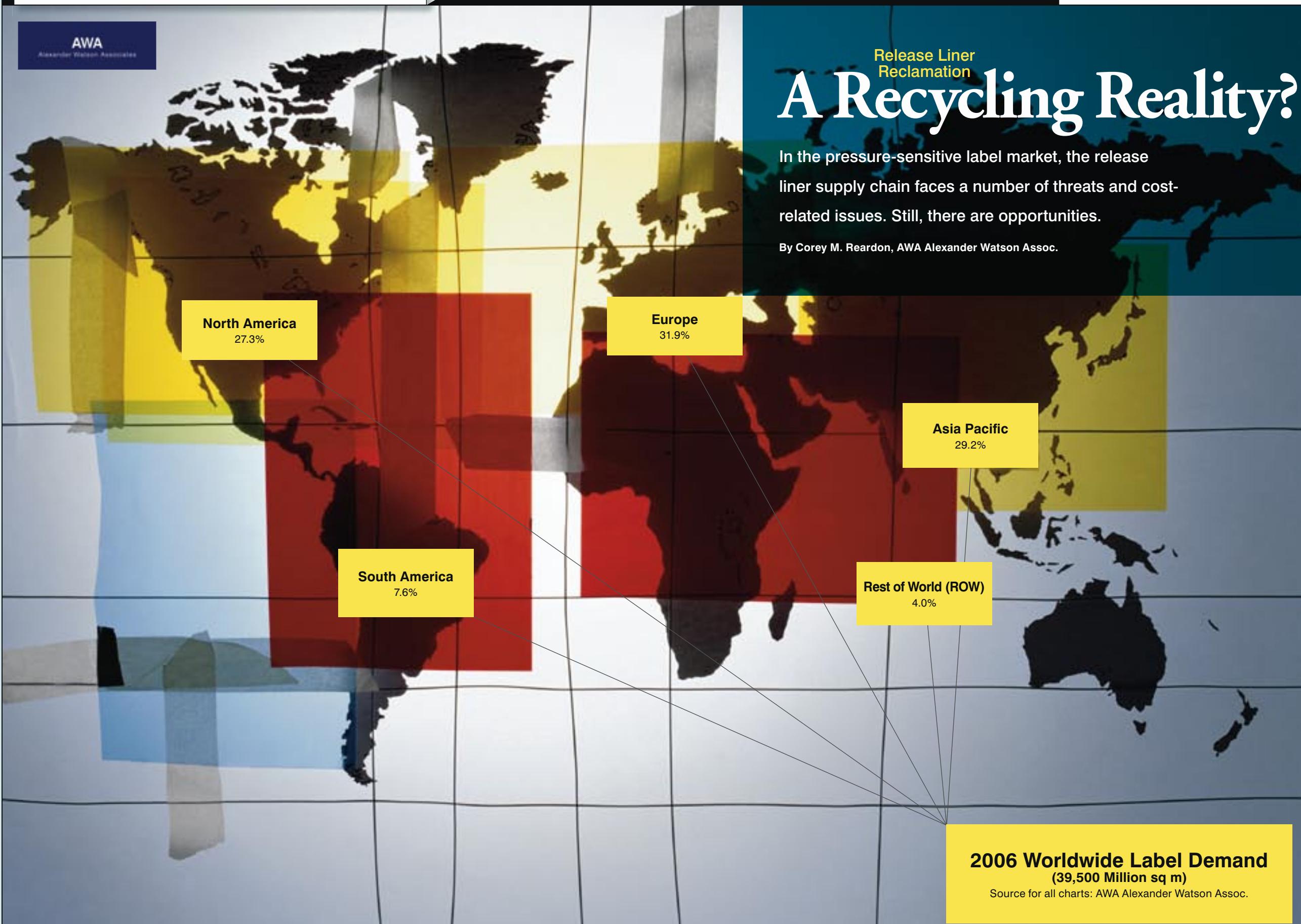
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Release Liner Reclamation A Recycling Reality?

In the pressure-sensitive label market, the release liner supply chain faces a number of threats and cost-related issues. Still, there are opportunities.

By Corey M. Reardon, AWA Alexander Watson Assoc.



2006 Worldwide Label Demand
(39,500 Million sq m)
Source for all charts: AWA Alexander Watson Assoc.

Around the globe, there is much current activity in the release liner market. While its reputation in many quarters remains as a “necessary evil,” this is because it represents a high percentage of the cost of a pressure-sensitive label—typically 20%–30%.

As the world’s attention focuses on environmental sustainability, the need to commission a strong working platform for reuse and recycling of release liner waste becomes increasingly imperative. The issue of release liner recyclability largely has been resolved, thanks to the efforts of pioneers like Calvin Frost of Channeled Resources Group, and film liners offer a very simple pathway to reuse through regranulation, but large-scale commercial reclamation of release liner still has to be made a reality.

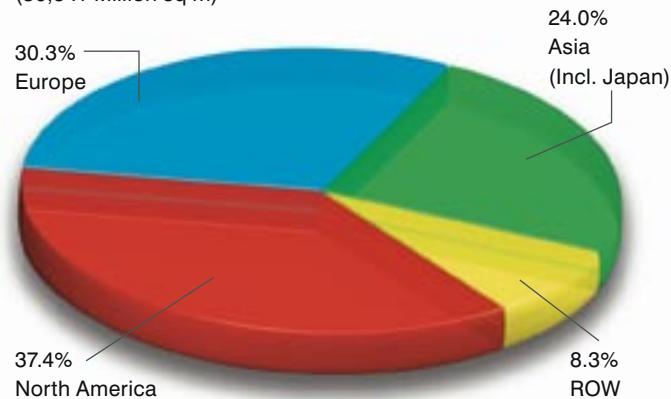
Label Stock: The Prime Market
Of the many industrial uses for release liner—including tapes, medical and hygiene applications, and envelopes—p-s label stock remains its prime market globally, claiming around 50% of the market and growing at 9.9%/yr. In the label stock market, there is much emphasis on the quality and functionality of film liners, but paper-based liners—calendered krafts, including glassine, clay coated, polyethylene coated, and other grades—still command a massive 85% of usage.

Calendered krafts continue to enjoy the majority share with about 44% of the market. However, it certainly is true to say we are seeing the highest volume growth in film liner, which is perhaps restrained only by raw material cost issues.

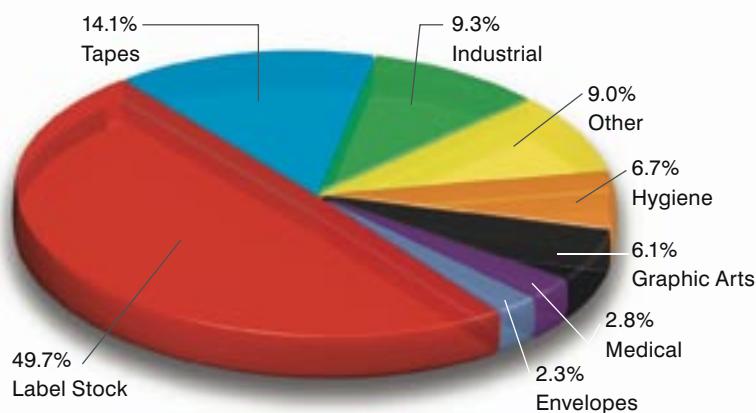
Total Release Liner Market Worldwide

By Region

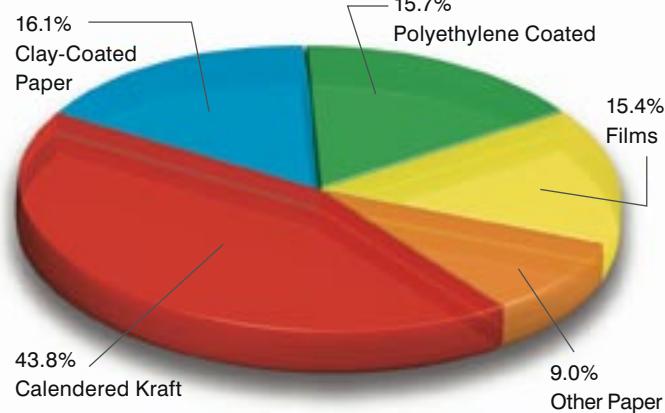
(30,541 Million sq m)



By Segment



By Material



Material Costs

Today material cost inflation is a key issue in the entire label industry, with raw material costs—particularly those related to petrochemicals—at record highs with no solution in sight in the short to medium term. This is creating a domino effect in the supply chain, and everyone—from raw material and chemical suppliers through siliconizers and laminators to converters and end-users—is suffering margin pressures and looking for ways to reduce costs.

As a result, there is a resurgence of interest in downgauging release liner (which not only saves material costs but, by providing longer rolls, reduces

While there is overcapacity in developed markets, there is not enough capacity in the world's lively emerging economies.

downtime, both on press at the converter and on the label dispensing line at the end-user). Both paper and film release liners are in the spotlight in this respect, and even a small downgauging could mean a worthwhile savings. Low-platinum release coatings are also a focus.

Technical Challenges

The release liner manufacturer faces a number of technical challenges in the search for lower-gauge, high-performance materials that involve not only the base material but also the silicone coating. We are seeing evidence of an increase in supply chain partnerships between siliconizers and silicone suppliers and paper and film liner suppliers to develop cost-effective, innovative solutions.

The Threat of Linerless

The “holy grail” of linerless label stock also is now a focus of interest. The label stock laminator that comes up with a viable solution to take the technology beyond print-on-demand and simple butt-cut label shapes will create real change in the label market.

It is important to remember, however, that p-s labels

enjoy their large market share thanks to variable information labels used in logistics, retail, and transport applications, not primary product applications. In the variable information printing arena, linerless labels certainly offer a threat.

RFID and other “smart” technologies may represent a strong developing market for p-s label stock. However, even when they are fully commercialized, they are unlikely to replace other traditional track-and-trace mechanisms such as bar codes. Alternative product identification and decoration methods are taking market share from p-s in prime label applications, too. In-mold, sleeving, and even direct print are technologies in which a release liner has no place.

The Good News

It is not, however, all bad news for release liner manufacturers in market terms. Their high-performance, high-value products are still at the heart of the p-s label industry.

The fact that business is healthy is evidenced by the continuing consolidation, globalization, and private equity investment we are seeing throughout the value chain. While there is overcapacity in release liner manufacture in developed markets, there

is not enough capacity in the world's lively emerging economies in Asia (including India) and South America.

New Opportunities For the Converter

A developing trend in release liner directly involves the label converter and attracted a great deal of interest at the recent European Labelexpo show in Brussels. In-line, on-press label stock lamination has been around for some time for short-run specialty applications, but the equipment to take this function to a higher level in terms of run lengths and quality is available commercially now.

It can represent a strong opportunity for converters to control their costs and optimize their margins without involving a “middleman,” the p-s laminator. For release liner suppliers, this is also an opportunity to develop a new business platform.

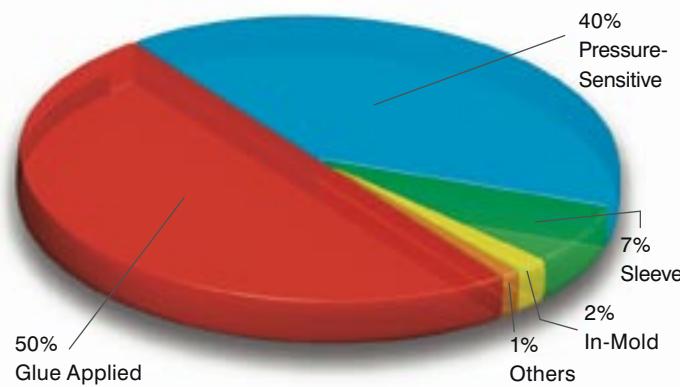
With brand manufacturers continuing to proliferate variants of the same basic brand in terms of flavor, scent, etc., print runs are becoming shorter. The narrow web label converter is well placed to take advantage of this trend, particularly if the converter also can create its own p-s label laminate.

The Future: Adding Value

Both paper- and film-based liners for labels can look forward to a continuing role, which is essentially to add value in terms of label production and dispensing. But with costs such an issue today, a game-changing technology shift must be on the manufacturer's agenda. PFFC

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2006 World Release Liner Shares By Labeling Technology





Capable of coating at 800 mpm, the BMB machine features a five-roll coating head, convertible to six rolls, for thermal-cured solvent-free silicone coating.

Confident Coaters

In a world of consolidation, Itasa shows there is still a strong role for independent suppliers. New equipment from BMB provides the flexibility necessary to serve demanding customers.

By Ann Hirst-Smith

Situated in Andoain in the “paper valley” of Spain’s Basque country, Itasa is an independent specialist producer of release-coated papers and Spain’s main commercial converting siliconizer. The company’s premium release liner bases have a reputation for high performance, particularly in the self-adhesive label and specialty tape industries as well as in medical disposables.

The demand created by that reputation for quality has led Itasa to invest €16 million in new equipment, particularly a new coater from Bachofen + Meier (BMB), now in its startup phase, that will nearly double the company’s current capacity when it is fully onstream.

Family-Owned Company
Itasa—Industrias de Transformación de Andoain—is privately owned,

established by two local families in 1974. Its original vision was to meet the demands for siliconized paper in two specialized end-use segments: the personal hygiene business and as a backing for Formica-brand surfacing products.

Itasa’s target market was simply its home region, then poorly supported in this field, and the company commenced production with a homemade coating machine. However, when Spain joined



► Converter Info ◀

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the European Union in the late 1980s, Itasa’s management team saw major development opportunities in the “common market” and decided to invest in meeting these opportunities in terms of plant, technology know-how, and personnel.

Today, 80% of Itasa’s production is exported—50% within Europe and the balance in the US, Latin America, Mexico, Asia, and Oceania. In an age of globalization, however, Itasa chooses to pursue a business strategy that enables it to maintain its ISO 9001-accredited production at the one site, while developing sales in selected key markets across the globe.

Ideally Situated

Says Itasa’s managing director, Francisco Pagola, “Our location in northwest Spain is logistically ideal. We are close to the ports of northern Spain and southern France as well as to transcontinental air connections.”

With demand growing, Itasa installed its first roll-to-roll coater in 1989. It was a

1.65-m, 300-mpm, five-roll solvent-free or solvent-gravure Pagendarm machine with a roll-curing tunnel, auto-splicing, and other convenient features.

Says quality manager Eduardo Arocena, “This very compact and flexible machine, which is still in continuous use for short and trial runs, new product development, and pilot coating, allows us to make a variety of ‘specials’ at a very high level of quality. As the business developed, however, we needed higher productivity and the ability to be even more flexible in terms of web width, so it was time to look for a second coater, a big BMB, which was installed in 1997.”

This 1.65-m-wide machine offers 500-mpm production via a five-roll coating head and air flotation drying. It features a web-cleaning facility, an electrostatic discharge facility, and in-line trimming.

The coater runs papers, films, and thermal-sensitive webs and optionally can offer ultraviolet curing and corona

treatment, as well as the ability to make imprints in-line. The machine was rebuilt in 2000 to optimize its capacity.

Major Investment Decision

Even with this workhorse at the center of its production, Itasa's capacity has been at a saturation point in the last two years. CFO Emilio Arocena observes, "If we wanted to stay competitive and profitable, we had to invest to gain the cost-saving and productivity benefits of wider web coating, without compromising our high quality standards. That's why we ordered a new custom-built, 2-m-wide BMB coater.

"Thanks to that investment, we are well positioned to meet our goal, and we have a big additional advantage in that the new machine also gives us the flexibility to meet our customers' increasingly demanding service requirements."

State-of-the-Art Coater

The new, tailor-made BMB automatic roll-fed coater is 2.3 m wide and already capable of coating at 800 mpm. It has many advanced features, including a Pesimal automatic roll feed that can handle 5-ton rolls; a cleaning system for the paper web; active and passive static discharge; anti-misting; and in-line trimming and roll slitting.

Its core capability is a five-roll coating head, convertible to six rolls, for thermal-cured solvent-free silicone coating. It has a 28-m, seven-section drying tunnel operating on an air flotation system, two remoisturizing steam boxes (with a regulated steam profile), and a battery of chilling rolls. The coater also has the flexibility to coat at different widths from 1.1 m and up and is supported by an advanced automatic silicone mixing plant.

High-speed coating of all types of paper release base is

There undoubtedly will be new end-use markets coming onstream, through *innovation* in laminates and liner technology.

—José María Pagola, Itasa



Itasa is run by CFO Emilio Arocena (left) and managing director Francisco Pagola, who says the company's location in northwest Spain is logistically ideal.

possible from 30 gm² to 200 gm² (krafts, polyethylene coated, clay coated, coated one side, and C2S), with equal or differential release characteristics for a variety of tape, label stock, industrial, and composite applications, as well as envelopes and self-adhesive graphic arts.

Finishing & Warehousing

With a January 2008 delivery date, a new in-line slitter will support the new coater, and additional finishing equipment for the older main coater is on order.

Installing a new wide-width coater had major space implications for Itasa. The new machine occupies much of what was previously raw materials warehouse space.

To compensate, the company currently is leasing an outside warehouse and is negotiating to obtain an additional 5,000 sq m of land around the present plant to build a new warehouse. The jumbo 5-ton master rolls for the coater require forklift handling, so the company is evaluating the possibility of a fully automated warehousing system for this proposed facility.

Implications for the Future

Export sales manager José María Pagola summarizes the benefits of this major investment: "The new coater gives us a real competitive edge through speed and productivity improvements. With the additional finishing and warehousing already in the pipeline, we are positioned strongly, as independents, to take new business in the face of the current industry consolidation, which leaves buyers in need of alternative choices in suppliers.

"We see a continuing, healthy growth in the medium term in the core markets we serve, particularly in labels. In the long term, there undoubtedly will be new end-use markets coming onstream, through innovation in laminates and liner technology. There is still plenty to say in favor of siliconized papers!

"But having the capacity is not enough. We need to get out there and sell our products. We don't want to expand any further geographically; we still have more than enough room for growth in the territories where we are established, and our strategic focus

remains Western Europe (particularly Germany, the driving engine of the European economy) and the USA.

"We are actively strengthening our sales team with knowledgeable people on the ground who can promote not only the technicalities but also develop new business with end-users. In terms of market segments, we are particularly keen to develop sales in specialty tapes and other emerging industrial applications."

Formula for Success

Itasa's management team is enthusiastic about the future possibilities inherent in its broad selection of coating and finishing equipment, effectively run by paper-industry-trained machine minders. The production facility, as befits a producer of specialty release liners for demanding applications, is extremely clean and neat, and production continues 24/6 with four shifts/day. The laboratory staff works the same hours to conduct essential quality analyses and give feedback to the production team.

With an overall workforce of 70, Itasa is well positioned to develop its potential in its chosen markets for the foreseeable future.

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► Supplier Info ◀

► **Bachofen + Meier** |
www.bmbag.ch

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► **Pagendam** |
www.pagendam.com

PFFC-ASAP 302

► **Pesimal** |
www.pesimal.com

PFFC-ASAP 303

Curable Coatings

The market for radiation-curable release coatings is healthy, and the rising cost of energy makes their use even more attractive.

By Thomas Hohenwarter, THresource LLC

The use of silicone acrylates and silicone epoxies in the production of release coatings is no longer a new technology. It has become firmly established in the pressure-sensitive tape and label market, even in the production of prime labels. However, most of the growth continues to be in niche areas such as specialty labels and integrated business forms. Growth is healthy and is projected to remain so due to this specialty business.

The most recent changes in the industry have had to do with corporate restructuring. Among the major North American players are GE Silicone, whose products became part of Momentum; Rhodia products, which now belong to Bluestar; and Degussa, now part of Evonik Industries.

The focus has become more internal in nature: trying to control costs while being squeezed from both ends (higher raw material cost and demand for lower-cost products from the converter). A key element has been refinement of production processes to make them more efficient.

Adding Value

Research is based on finding new oligomers that are more efficient to produce, yet still provide the quality demanded by the industry. Finding better, more efficient photo initiators/catalysts is also a key research area.

Silicone suppliers have been successful in working with co-suppliers to make the technology more turnkey and operator friendly. Equipment now is available with processes for system-integrated coating and curing (including the inerting necessary for use of the acrylate system). Substrate suppliers (paper and film) have paid attention and now offer grades better suited for the radiation-curable chemistries.

One of the attractions of the radiation-curable chemistries (especially the acrylate systems) is the ability to add value in the final formulations. Release coatings now are asked to do more than just protect and release the p-s adhesive. New

self-wound products require the release coating to become a functional part of the final product. They can be modified with materials to adjust gloss, color, and hardness of the final coating.

This has come about because converters are looking to add value to their products. Radiation-curable silicones make this easier, allowing the use of thinner or less heat-resistant substrates, etc., which makes linerless applications easier to achieve.

There are still areas of opportunity here—for instance, a release coating that can be written on for integration into shipping documents, or for self-wound stamps. Integration of the equipment necessary for radiation curing has allowed the technology to be used in the narrow web industry, giving the label converter more control over product design and quality.

North America and Europe continue to see good growth in the specialty sector, but the availability of turnkey equipment has helped to open new geographic market areas, Asia and South America in particular. Here, investment is easier because “old technology” currently is not in use.

Too Costly?

A key impediment to growth in radiation curing has been the impression that it “costs more.” This usually is based on the simple fact that the silicone cost is higher on a solid-per-pound basis. It is a goal of the industry to educate the user to look at the entire technology cost—material, equipment, waste, etc. In particular, the rising cost of energy makes the use of radiation curing even more attractive.

The radiation-curable silicones industry is viable and active. New and improved products continuously are introduced as market requirements change. Co-suppliers and equipment manufacturers have assisted in making this a successful venture.



Image courtesy of Primarc™ UV Curing Lamps

UV curing lamps like these from Primarc are used to cure release coatings.

Thomas Hohenwarter, owner of THresource LLC, Chester, VA, is a consultant to the tape and label industry with more than 20 years' experience in p-s adhesives and release coatings. His specialty is radiation-curable silicone. Contact him at 804-767-0127; tohenwarter@THresourceconsulting.com.

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