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Wipes sector, which is an important and growing product category in the nonwovens industry, has witnessed major merger and new investments recently. In November last year, Suominen Nonwovens acquired Ahlstrom Corporation’s Home and Personal Business Area, making it a world leader in wipes. In the Asia Pacific region, investments are happening rapidly in the wipes sector. Most recently, Andritz Perbjoet is supplying a complete spunlace line to Precot Meridian Ltd. Andritz’s spunlace line will be commissioned in Karnataka State, Southern India, and is expected to begin its production in the first quarter of 2013. Apart from the acquisitions and new investments that are taking place in the wipes sector, interest is emerging on the use of biodegradable materials and recycled fibers to develop sustainable wipes.

Wipes industry scenario

US-based Association of the Nonwoven Fabrics Industry (INDA) recently released its “Global Spunlace Technology Markets and Trends: 2011-2016” report. According to this report, spunlace sector witnessed an average growth of 9.5% in the last five years with an output of 819,000 tons last year. Major spunlace production is taking place in NAFTA, Europe and China and the annual growth in these regions is expected to be about 7.7% over the next five year period.

According to INDA, wipes are the major end-use products for the spunlace technology. Wipes sector is also beginning to take off in emerging markets such as India. Most recently, according to Government of India, technical textiles sector that encompasses wipes, semi durable and durable products is estimated to reach US$28.7 billion by 2017. In accordance with Fredonia, per capita wipe value in India will increase from the current US$0.10 to US$0.14 in 2016, showcasing a steady increase from US$0.02 in the year 1996.

Brussels-based EDANA said spunlace is the most important dry laid technology that contributed to the above 5% overall growth of the nonwovens sector last year. INDA reports that wipes contribute about 26% of the North American disposable market and 28% of the European disposable market.

Apart from spunlace technology, air-laid pulp and wet technologies are gaining some momentum in the wipes sector. According to INDA, 10% of Asian market, 12% of European market and 13% of North American market is spunlace technology - the main nonwoven technology to make wipes. Estimates by INDA, EDANA and governments like India show that there is a positive trend for the wipes sector globally.

Green wipes

In the domestic consumer wipe markets these days, emphasis is given to environmentally sustainable products. Post-industrial fibers are sought after these days to develop environmentally friendly wipes. In this regard, Suominen Nonwovens is developing new products to meet the changing needs of customers. The company has developed BIOLACE™ nonwovens that are 100% biodegradable and compostable made from renewable resources. It develops these biodegradable wipes in five global manufacturing plants using raw materials such as pulp, cotton and PLA. According to Alistair Brown, Director, Marketing and Communications, Suominen is committed to sustainable development and minimizing the environmental impact associated with its materials, processes and ways of working.

Green wipes are evolving and the developments from U.S. Pacific Nonwovens Industry (USP) are quite useful and interesting. According to Larry Wordsworth, Chief Technology Officer of U.S. Pacific Nonwovens Industry, alternatives to synthetic fibers are now available derived from plants instead of oil such as PLA that produce 1/3 to 1/2 as much as the green house gas CO2 and require much less energy to make polymer that can be used to develop wipes.

USP is the exclusive agent for Natureworks in Asia-Pacific for PLA in spunmelt nonwovens and is aggressively developing PLA wipes. USP in its factory in Dongguan, China, will soon have an in-line hydro entanglement unit to produce PLA wipes.

Speaking recently at the inaugural Converting and Bonding Conference organized by the Association of the Nonwoven Fabrics Industry, Ginny Castevens, VP of Sales and Business Development-Americas, Jacob Holm Industries informed about the new opportunities for regenerated (Regen) cotton in the wipes sector. Jacob Holm Industries with its headquarters in Switzerland is one of the world’s leaders in the nonwovens field and has manufacturing plants in Soultau, France and Candler, USA. Candler plant, which is
5 miles to the west of Asheville in North Carolina, has a 5 meter wide spunlace nonwoven line and its production capacity is 35 million square meters per month.

When cotton price skyrocketed over US$2 two years back, Jacob Holm Industries worked with its partners and utilized regenerated cotton from T-shirt clippings. Candler plant uses regenerated cotton for 30%

of its production capacity. Jacob Holm has perfected the spunlace process to produce 50 g/square meter baby wipes using regenerated cotton, said Castevens. Recycled and mechanically cleaned cotton is also finding applications in new wipe products developed by Suominen Nonwovens, a leader in nonwoven wipe industry.

Rockline Industries develops wipes using regenerated cotton fibers and the product received the 2010 Visionary Award from INDA. Most recently, cotton based high-tech nonwoven wipes for oil and vapor sorption was selected as one of the four finalists for the recent World of Wipes Innovation Award by INDA. The United States’ Government through its Department of Agriculture is promoting the utilization of cotton in wipes sector. New Orleans based laboratory is developing spunlace cotton wipes from cleaned raw cotton as an alternative to synthetic wipes. These new products and the emphasis towards using biodegradable materials clearly showcase the interest in the wipes sector to develop environmentally sustainable products.

Military wipes

In general, single-use consumer wipe products dominate the wipes sector. However, due to heightened awareness and security requirements, governments and institutions have started procuring wipes to protect soldiers, civilians, defense and sensitive equipment. A new group of wipes known as military wipes has started emerging in the market. This has necessitated the reclassification of wipes sector into: 1) Consumer wipes; 2) Industrial wipes and 3) Military wipes. Most recently, the United States Department of Defense has called for new sensitive equipment wipes under its procurement program called Joint Service Sensitive Equipment Wipes. In this regard, needlepunching nonwoven technology is playing a significant role.

Fibertect, a needlepunched nonwoven wipe with porous carbon inside has been found to be a useful product to decontaminate sensitive equipment. Waco-Texas based Hobbs Bonded Fibers is manufacturing this high-tech wipe and is marketed by Chantilly-VA based First Line Technology, LLC. According to a report by the Lawrence Livermore National Laboratory; this needlepunched nonwoven fabric technology is capable of wiping away toxic liquid chemicals and holding-off toxic vapors that off-gas from the liquid chemical.

Another example of nonwoven wipes finding high-tech application is its use to clean away oil spills. By using biodegradable materials such as raw cotton, oil absorbing wipes can be developed. The issue of developing environmentally sustainable sorbent products has come into light with the advent of the recent Gulf of Mexico oil spill incident. Products such as Fibertect and Sellars Wipes are good examples to tackle the oil spill scenarios.

Showstopper wipe technologies

Apart from green culture that is gaining momentum in the industry, high technology wipes and wipe systems that reduce the logistical burden are also receiving much attention. Raptor SAFE-T Wipe from Raptor Detection Technologies, LLC can detect explosives and provide a calorimetric indication to first responders who are using the wipe. This technology uses molecularly imprinted polymers, which gives the functionality aspect to the wipe. Sani Professional’s Table Turners No-Rinse Sanitizing Wipes has U.S. EPA registration and is a good wiping tool for restaurant and food service industry.

Packaging the wipe in such a way to reduce the logistical burden for the end user is considered to be an important sales and marketing tool for the wipe industry. Wetnap’s Clean & Cream Wet Wipes Cream Dispenser is an example of a convenient wipe system that has the baby wipes and cream in one package. This handy wipe travel pack has a baby cream container alongside with wipes. The cream container can be refilled till the wipes run out adding more convenience and cost advantages to the consumers.

Spunlace is now exploited for developing heavy weight webs for cleaning cloths. Fleissner Aqualjet from Trutzschler Nonwovens is capable of developing webs in the weight range of 120 to 400 GSM for high quality cleaning cloths. Patterned wipes are in vogue these days with machinery makers such as Trutzschler and Andritz supplying spunlace lines that can develop perforated and patterned webs. Andritz has released its innovative patterning technology called NeXimaging, which allows different kinds of patterning and aperture at high speeds. These patterned wipes find high-tech technical and medical wipe applications.

The wipe industry is a growth sector within the nonwovens industry. The developments that are taking place in the industry focus on the use of sustainable raw materials, such as recycled fibers, natural fibers and their blends; high productivity and embellishments to the wipe products such as perforations. The industry is also eyeing the niche market of industrial and defense applications, which is expected to grow faster than the national GDP, making it an attractive sector.

A soldier used Fibertect for wiping (Source: First Line Technology)

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