World Nonwovens

Industry Study with Forecasts for 2017 & 2022

Study #3077 | October 2013 | $6100 | 468 pages
Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General .......................................................... 4
World Economic Overview ................................... 5
Recent Historical Trends ...................................... 5
World Economic Outlook .................................... 7
World Demographic Trends ................................ 10
Population .................................................. 11
Female Population .......................................... 13
Population 65 Years & Older ................................ 16
Households .................................................. 18
World Manufacturing Outlook ............................ 19
World Health Expenditures ................................ 21
World Construction Trends ................................. 25
Pricing Patterns .............................................. 26
Competitive Materials ....................................... 28
Legal & Regulatory Environment ........................ 30
Regulations & Standards .................................. 31
Sustainability ............................................... 32

OVERVIEW

General .......................................................... 34
Regional Overview .......................................... 35
Demand ........................................................ 38
Production .................................................... 41
International Trade ......................................... 43
Demand by Web Formation Process ..................... 45
Spunmelt ...................................................... 47
Carded ......................................................... 52
Airlaid ........................................................ 56
Wetlaid ......................................................... 59
Demand by Application .................................... 62
Disposables ................................................... 64
Nondisposables .............................................. 67
Demand by Market ......................................... 69
Personal Hygiene ............................................ 71
Wipes ........................................................ 75
Construction .................................................. 76
Filtration ....................................................... 79
Medical/Surgical ............................................. 82
Other ........................................................... 83

NORTH AMERICA

General .......................................................... 87
Nonwoven Fabric Supply & Demand ....................... 88
Nonwoven Fabric Demand Outlook ....................... 92
United States ............................................... 95
Canada ......................................................... 103
Mexico ........................................................ 109

WESTERN EUROPE

General .......................................................... 116
Nonwoven Fabric Supply & Demand ....................... 117
Nonwoven Fabric Demand Outlook ....................... 121
Germany ....................................................... 124
United Kingdom ............................................. 132
France ........................................................ 138
Italy ........................................................... 145
Spain ........................................................... 152

Other Western Europe ...................................... 170

ASIA/PACIFIC

General .......................................................... 177
Nonwoven Fabric Supply & Demand ....................... 178
Nonwoven Fabric Demand Outlook ....................... 182
China ........................................................ 185
Japan ........................................................ 193
India ........................................................ 199
South Korea ............................................... 205
Taiwan ........................................................ 210
Other Asia/Pacific ........................................... 216

OTHER REGIONS

Central & South America ................................ 223
Nonwoven Fabric Supply & Demand ....................... 224
Nonwoven Fabric Demand Outlook ....................... 228
Brazil ......................................................... 230
Other Central & South America ........................ 237

Eastern Europe ............................................. 242
Nonwoven Fabric Supply & Demand ....................... 244
Nonwoven Fabric Demand Outlook ....................... 247
Russia ........................................................ 249
Poland ........................................................ 256
Other Eastern Europe .................................... 262
Africa/Mideast ............................................. 268
Nonwoven Fabric Supply & Demand ....................... 270
Nonwoven Fabric Demand Outlook ....................... 274
Turkey ........................................................ 276
Other Africa/Mideast ...................................... 281

INDUSTRY STRUCTURE

General .......................................................... 289
Industry Composition ....................................... 290
Market Share ............................................... 293
Competitive Strategies ..................................... 299
Research & New Product Development ................. 302
Manufacturing .............................................. 304
Marketing & Distribution ................................ 305
Cooperative Agreements ................................ 307
Acquisitions & Divestitures ............................... 311

COMPANY PROFILES

Ahlstrom Corporation ...................................... 315
Albis International .......................................... 321
Andrew Industries ......................................... 323
Asahi Kasei .................................................. 326
Avgo Limited ............................................... 329
Berkshire Hathaway ........................................ 331
Companhia Providencia Industria e Comercio .......... 335
DuPont (EI) de Nemours .................................. 336
Évora SA ..................................................... 342
Fibertex Nonwovens ...................................... 345
Fibertex Personal Care .................................... 347
Fiberweb plc ............................................... 348
First Quality Enterprises .................................. 352
Foss Manufacturing ....................................... 354
Freudenberg & Company ................................ 357
Glatfelter (PH) Company .................................. 364
Guangdong Jofo Group ................................... 366
Hassan Tekstil Sanayi ve Ticaret ......................... 368
Hollingsworth & Vose ..................................... 370

Netherlands .................................................... 159
Belgium ......................................................... 164
Japan ........................................................ 174
Japan Vilene .................................................. 174
Kimberly-Clark Corporation ................................ 179
Koch Industries ............................................. 184
Low & Bonar ................................................. 188
Lydall Incorporated ....................................... 191
Millet & Company .......................................... 195
Mitsui Chemicals .......................................... 199
Nanliu Enterprise .......................................... 203
Owens Corning ............................................. 207
Pegasus Nonwovens ....................................... 211
Polymer Group ............................................. 215
Propex Operating .......................................... 219
Royal Ten Cate ............................................. 223
Sandler AG ................................................... 227
Suominen Corporation .................................... 231
Toray Industries ............................................ 235
Toyobo Company .......................................... 239
TWE Group ................................................ 243
Vita (Lux III) Sàrl .......................................... 247

List of Tables/Charts

EXECUTIVE SUMMARY

1 Summary Table ........................................... 3

MARKET ENVIRONMENT

1 World Gross Domestic Product by Region ........... 10
2 World Population by Region ........................... 13
3 World Female Population by Region ................. 15
4 World Population 65 Years & Older by Region .... 17
5 World Households by Region .......................... 19
6 World Manufacturing Value Added by Region ...... 21
7 World Health Expenditures by Region ............... 24
8 World Construction Expenditures by Region ....... 26
Cht. World Nonwovens Pricing, 2002-2022 ........ 28

OVERVIEW

1 World Nonwoven Fabric Market Environment .... 37
2 World Nonwoven Fabric Demand by Region ....... 40
Cht. World Nonwovens Fabric Demand by Region, 2012 ....... 41
3 World Nonwoven Fabric Production by Region .... 42
Cht. World Nonwovens Fabric Production by Region, 2012 ....... 43
4 World Nonwoven Fabric Net Exports by Region ... 44
5 World Nonwoven Fabric Demand by Web Formation Process ....... 46
Cht. World Nonwovens Fabric Demand by Web Formation Process, 2012 ....... 47
6 World Spunmelt Nonwoven Fabric Demand by Region ....... 49
7 World Carded Nonwoven Fabric Demand by Region ....... 53
8 World Airlaid Nonwoven Fabric Demand by Region ....... 59

(continued on following page)
World demand to rise 5.4% annually through 2017

Global demand for nonwovens is forecast to rise 5.4 percent annually to 9.1 million metric tons in 2017. Nonwovens demand in the developed areas of the world, such as the US, Japan, and Western Europe, is projected to grow at a rate of 2.4 percent per year, an improvement from the declines of the 2007-2012 period but still well below the global average. These countries have well developed manufacturing sectors, populations with high personal incomes, and well established, mature nonwovens markets. Nonwovens demand in developing areas of the world is expected to increase 7.2 percent per year through 2017. The manufacturing sectors of developing economies tend to grow rapidly, benefiting nonwovens used in the production of nondisposable goods such as mattresses, motor vehicles, and geotextiles. Additionally, advances will benefit from growth in middle class cohorts who are better able to afford nonwoven consumer goods, such as wipes and personal hygiene products.

China to claim nearly half of all gains in total demand

Asia/Pacific was the largest regional market for nonwovens in 2012, with 41 percent of the global total. Growth will be driven in large part by China, which will account for 46 percent of global gains through 2017 and 31 percent of total world sales that year. Manufacturing capacity for products that consume significant amounts of nonwovens continues to expand throughout the country. For example, several major diaper producers are in the process of building disposable diaper production plants in China in order to supply both domestic and export markets. Like China, India is expected to see strong gains as it continues to rapidly develop its manufacturing and construction sectors. In addition, rising incomes and standards of living will provide incentives for individuals to purchase convenience items, promoting the production of disposable infant diapers, feminine hygiene products, and baby wipes, among other items made with significant amounts of nonwovens.

Demand in West to rebound from recent declines

In 2012, North America and Western Europe each accounted for roughly 20 percent of the global nonwovens market. Demand growth in these regions is expected to rebound from the declines of the 2007-2012 period, which was marked by outright drops in manufacturing and construction activity. As such, gains will benefit from economic improvement and a rebound in the manufacturing and construction sectors. Nevertheless, growth in nonwovens demand in these regions will remain well below the global average.
MARKETS

Turkey: Nonwoven Fabric Supply & Demand -- Turkey's nonwoven fabric demand in 2012 totaled 121,000 metric tons, accounting for over one-quarter of all Africa/Mideast product sales and representing the single largest market in the region. Intensity of product use in the nation (relative to GDP and population) is above both regional and global averages. Turkish nonwovens sales expanded 7.3 percent per year from 2007 to 2012. Market performance during this period reflected strong advances in construction activity, manufacturing, health care expenditures, and per capita income, and was supported by ongoing population growth, boosting sales of an array of consumer and industrial nonwoven goods.

Nonwoven fabric demand in Turkey is projected to expand at a 7.7 percent annual pace through 2017 to 175,000 metric tons. An acceleration in economic growth, manufacturing activity, and construction spending will promote gains.

With 2012 industry production of 140,000 metric tons, Turkey is the largest nonwoven fabric manufacturer in the region, accounting for 39 percent of total output. The country maintained a trade deficit in nonwovens. However, in the 2007-2012 period, Turkey became a net exporter of nonwovens, with a surplus equivalent to 14 percent of nonwovens output. Despite this reversal, Turkey imports a significant amount of nonwovens. The leading external sources of nonwovens supply are Italy, Saudi Arabia, Germany, Israel, and China.

Turkey’s nonwoven fabric production is forecast to expand at a 7.4 percent annual pace to 200,000 metric tons in 2017. Rising nonwovens demand locally and in export markets will help support industry output gains, although intense competition from foreign suppliers will limit gains.

### TABLE VII-17

**TURKEY: NONWOVEN FABRIC SUPPLY & DEMAND**

(Thousand metric tons)

<table>
<thead>
<tr>
<th>Item</th>
<th>2002</th>
<th>2007</th>
<th>2012</th>
<th>2017</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product (bil 2011$)</td>
<td>734</td>
<td>1025</td>
<td>1192</td>
<td>1455</td>
<td>1800</td>
</tr>
<tr>
<td>per capita GDP</td>
<td>10960</td>
<td>14300</td>
<td>15600</td>
<td>18050</td>
<td>21350</td>
</tr>
<tr>
<td>Population (mil persons)</td>
<td>67.0</td>
<td>71.7</td>
<td>76.4</td>
<td>80.6</td>
<td>84.3</td>
</tr>
<tr>
<td>65 Years &amp; Older</td>
<td>3.6</td>
<td>4.1</td>
<td>4.8</td>
<td>5.8</td>
<td>7.2</td>
</tr>
<tr>
<td>% 65 years &amp; older</td>
<td>5.4</td>
<td>5.7</td>
<td>6.3</td>
<td>7.2</td>
<td>8.5</td>
</tr>
<tr>
<td>Female Population (mil persons)</td>
<td>33.5</td>
<td>35.9</td>
<td>38.3</td>
<td>40.4</td>
<td>42.3</td>
</tr>
<tr>
<td>15-49 Years</td>
<td>18.8</td>
<td>20.1</td>
<td>21.2</td>
<td>22.0</td>
<td>22.5</td>
</tr>
<tr>
<td>% 15-49 years</td>
<td>56.1</td>
<td>56.0</td>
<td>55.4</td>
<td>54.5</td>
<td>53.2</td>
</tr>
<tr>
<td>births/1000 women age 15-49</td>
<td>73.4</td>
<td>66.7</td>
<td>61.6</td>
<td>57.5</td>
<td>54.0</td>
</tr>
<tr>
<td>Live Births (mil)</td>
<td>1.38</td>
<td>1.34</td>
<td>1.31</td>
<td>1.27</td>
<td>1.22</td>
</tr>
<tr>
<td>Manufacturing Value Added (bil 2011$)</td>
<td>109</td>
<td>163</td>
<td>192</td>
<td>238</td>
<td>295</td>
</tr>
<tr>
<td>kg nonwovens/mil $ GDP</td>
<td>75</td>
<td>83</td>
<td>102</td>
<td>120</td>
<td>139</td>
</tr>
<tr>
<td>kg nonwovens/capita</td>
<td>0.82</td>
<td>1.19</td>
<td>1.58</td>
<td>2.17</td>
<td>2.97</td>
</tr>
<tr>
<td>Nonwoven Fabric Demand</td>
<td>55</td>
<td>85</td>
<td>121</td>
<td>175</td>
<td>250</td>
</tr>
<tr>
<td>net exports</td>
<td>-15</td>
<td>-30</td>
<td>19</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Nonwoven Fabric Production</td>
<td>40</td>
<td>55</td>
<td>140</td>
<td>200</td>
<td>285</td>
</tr>
<tr>
<td>% Turkey</td>
<td>30.8</td>
<td>29.7</td>
<td>38.9</td>
<td>41.2</td>
<td>43.5</td>
</tr>
<tr>
<td>Africa/Mideast Nonwovens Production</td>
<td>130</td>
<td>185</td>
<td>360</td>
<td>485</td>
<td>655</td>
</tr>
</tbody>
</table>

### CHART VIII-1

**WORLD NONWOVEN FABRIC MARKET SHARE BY COMPANY**

($29.7 billion, 2012)

- Others 75.3%
Albis is a manufacturer of nonwovens for the hygiene, household care, and other markets. The privately held company produces nonwovens in Italy and markets them worldwide.

Albis competes in the world nonwovens industry primarily via the manufacture and sale of nonwoven materials for use in hygiene and household applications. Most of Albis’ nonwovens are available in two versions: 100 percent polypropylene or coaxial polypropylene/polyethylene bicomponent types. The coaxial polypropylene/polyethylene bicomponent types feature improved softness, among other benefits. The Company can obtain different performance properties of the coaxial polypropylene/polyethylene bicomponent nonwovens by altering the polypropylene/polyethylene ratio of the filaments.

For the hygiene market, Albis makes such nonwoven products as topsheets, barrier leg cuffs, backsheet backings, acquisition/distribution layers, and elastic side panels. The Company’s CURATOP topsheets are engineered for use as coverstock and corewrap in sanitary napkins, absorbent diapers, and adult incontinence products. Albis’ barrier leg cuffs, which are sold under the CURALEG brand name, are made of spunbond hydrophobic fine filaments. The Company’s CURABACK.

“Demand for nonwovens in Brazil is forecast to increase through 2017. Product demand will be bolstered by an acceleration in economic and construction activity, as well as manufacturing output. However, growth in population, personal incomes, and household creation will not be as strong as in the past, and the number of births will continue to edge down, restraining future sales advances for nonwoven fabrics.”

--Section VII, pg. 232

Copyright 2013 The Freedonia Group, Inc.
Order Information

Five Convenient Ways to Order

ONLINE: www.freedoniagroup.com

MAIL: Print out and complete the order form and send to The Freedonia Group (see address at the bottom of this form)

PHONE: Call toll free, 800.927.5900 (US) or +1 440.684.9600

FAX: +1 440.646.0484 (US)

EMAIL: info@freedoniagroup.com

Free Handling & Shipping
There is NO charge for handling or UPS shipping in the US. Expect delivery in 3 to 5 business days. Outside the US, Freedonia provides free airmail service. Express delivery is available at cost.

Orders Outside of the US
Checks must be made payable in US funds, drawn against a US bank and mailed directly to The Freedonia Group. For wire transfers please contact our customer service department at info@freedoniagroup.com. Credit cards accepted.

Credit Card Orders
For convenience, Freedonia accepts American Express, MasterCard or Visa. Credit card purchases must include account number, expiration date and authorized signature.

Save 15%
If you order three (3) different titles at the same time, you can receive a 15% discount. If your order is accompanied by a check or wire transfer, you may take a 5% cash discount (discounts do not apply to Corporate Use Licenses).

Corporate Use License
Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, companies receive unlimited use of an electronic version (PDF) of the study. Place it on your intranet, e-mail it to coworkers around the world, or print it as many times as you like.

Click here to learn more about the Corporate Use License

Individual Use License Agreement
The undersigned hereby represents that the above captioned study will be used by only ___ individual(s) who are employees of the company and that the study will not be loaded on a network for multiple users. In the event that usage of the study changes, the Company will promptly notify Freedonia of such change and will pay to Freedonia the appropriate fee based on Freedonia’s standard fee schedule then in effect. Note: Entire company corporate use license, add $2600; one additional user, add $600; two additional users, add $1200; three additional users, add $1800.

Corporate Use License Agreement
The above captioned study may be stored on the company’s intranet or shared directory, available to company employees. Copies of the study may be made, but the undersigned represents that distribution of the study will be limited to employees of the company.

Order Form

World Nonwovens ........................................................ $6100

☐ Corporate Use License (add to study price) * + $2600

☐ Additional Print Copies @ $600 each *

Total (including selected option) $__________

☐ Enclosed is my check (5% discount) drawn on a US bank and payable to The Freedonia Group, Inc., in US funds (Ohio residents add 8% sales tax)

☐ Bill my company   ☐ American Express   ☐ MasterCard   ☐ Visa

Credit Card #

MM            YY

Expiration Date

Country _____________________________

City/State/Zip _____________________________

Signature ____________________________________________

* Please check appropriate option and sign below to order an electronic version of the study.

☐ Individual Use License Agreement

☐ Corporate Use License Agreement
Other Studies

Wipes
US wipes demand will rise 3.6 percent yearly through 2018 to $2.9 billion. Disinfectant and electrostatic wipes will grow the fastest. The industrial market will outpace consumer uses based in part on a relaxed EPA rule that will help disposable wipes compete with reusable, laundered shop towels. Flushability will remain a factor in consumer and health care uses. This study analyzes the $2.5 billion US wipes industry, with forecasts for 2016 and 2023 by market, substrate and chemical. The study also evaluates company market share and profiles industry players.

Coated Fabrics
US demand for coated fabrics is projected to advance 3.2 percent per year to 680 million square yards in 2018. The large motor vehicle market will drive gains, promoted by a higher number of air bags — usually employing silicone-coated nylon — per light vehicle. Smaller markets such as awnings, canopies and wall coverings will grow the fastest. This study analyzes the $580 million square yard US coated fabric industry, with forecasts for 2018 and 2023 by product, substrate and market. The study also evaluates company market share and profiles industry players.

World Geosynthetics
Global demand for geosynthetics is expected to rise 8.9 percent per year to 5.2 billion square meters in 2017. Developing regions will be the fastest growing markets, with the Asia/Pacific region remaining the largest. Construction will be the largest and fastest growing application, especially in the key China and US markets. This study analyzes the 3.4 billion square meter world geosynthetics industry, with forecasts for 2017 and 2022 by product, market, world region, and for 19 countries. The study also evaluates company market share and profiles industry players.

Specialty Films
US demand for specialty films is forecast to advance 5.2 percent per year to $8.0 billion in 2017. Barrier films will be a key driver in the dominant packaging market, based on a rapid rise in case-ready meat packaging. The construction market will grow the fastest, driven by films used in windows for safety and security as well as light control. This study analyzes the $6.2 billion US specialty film industry, with forecasts for 2017 and 2022 by function, resin, and market. The study also evaluates company market share and profiles industry competitors.

Geosynthetics
US geosynthetics demand is forecast to increase 6.6 percent per year to 1.3 billion square yards in 2017, spurred by improved spending on the construction of structures and roads. Geotextiles will remain the largest segment, while more application-specific products (e.g., geogrids, geonets, geosynthetic clay liners, geofoams) will grow the fastest. This study analyzes the 915 million square yard US geosynthetics industry, with forecasts for 2017 and 2022 by product, market and region. The study also evaluates company market share and profiles industry players.

About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

- Chemicals
- Plastics
- Life Sciences
- Packaging
- Building Materials
- Security & Electronics
- Industrial Components & Equipment
- Automotive & Transportation Equipment
- Household Goods
- Energy/Power Equipment

Freedonia Custom Research

Freedonia Custom Research delivers the same high quality, thorough and unbiased assessment of an industry or market as an industry study. Since the research initiative is based upon a company’s specific needs, companies harness Freedonia’s research capabilities and resources to answer unique questions. When you leverage the results of a Freedonia Custom Research engagement, you are able to obtain important answers to specific questions and issues associated with: mergers and acquisitions, new product launches/development, geographic expansion, entry into new markets, strategic business planning, and investment and funding decisions.

Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia’s team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.