

**MELTBLOWN MICROFIBER, ELECTROSTATICALLY
CHARGED NONWOVENS & NANOFIBER FILTER
MEDIA - WORLDWIDE**

July 2003

By Lutz Bergmann
FILTER MEDIA CONSULTING, INC.

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SUMMARY AND HIGHLIGHTS

The total capacity/production of meltblown microfiber worldwide, according to this report, amounts to approximately 345 MM lbs. – 157,000 tons. Filtration represents worldwide approximately 34% - 115 MM lbs. – 53,000 tons. The estimate of meltblown materials is difficult because of the discrepancies between capacity and production and the great difference of yield in the meltblown process.

With regard to raw materials, we believe that polypropylene polymer still represents at least 85% – 90%. The remaining but growing portion is represented by PET, PE, PBT, PA, ECTFE (HALAR[®]), PAL and others.

In calculating meltblown products, notably SMS and SMMS materials, we decided previously that the meltblown portion represents about 10% - 15% of the total product by weight with the balance being mostly spunbonded nonwovens.

The total number of companies producing meltblown microfiber and nanofiber nonwovens has increased during the last few years to approximately 115 – 120. In the year 2000, we were able to identify 108 companies with address and additional details, not counting 30-40 smaller manufacturers in China.

Our market estimates by companies are based on approximately \$2.80 - \$3.50/lb. of meltblown material for filtration, although certain products are being sold at significantly higher prices, notably pleated micro filtration cartridge media or media for blood filtration.

In the year 2000, the market for meltblown microfiber electret nonwovens grew to approximately \$300 million in sales. Air/dry filtration represented 60% and \$180 million and 40% in liquid filtration amounted to approximately \$120 million.

In the year 2003 we expect that Meltblown/Microfiber/Electret nonwoven roll goods will grow to \$ 518.00 MM in sales. AIR/DRY Filtration \$340.00 MM -65%, in liquid filtration \$ 178.00 MM - 35% -. Our "courage" forecast for 2010 calls for \$ 785.00 MM.

Bio-terrorism has changed the way people look at filtration. The changes are significant and reflected in HVAC filtration for buildings – new systems for instance for the postal service letter distribution systems – and other applications.

Of all nonwoven applications " **BLOOD FILTRATION MEDIA** will see the most dramatic growth, since we expect by 2006 that all blood donated will be filtered prior to be administered to patients.

We used exchange rates as of mid/late June 2003:

\$ 1.00 = € 0.84	€ 1.00 = \$ 1.18	\$ 1.00 = \$ 0.60
\$ 1.00 = ¥ 120	\$ 1.00 = RMB 8.20	\$ 1.00 = Won 1,200
\$ 1.00 = Rand 8.0	\$ 1.00 = \$ 1.00(Australia)	\$ 1.00 = \$ 1.35 (Canada)

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