

NEEDED FELTS FOR DUST COLLECTION AND BAGHOUSE SYSTEMS AND LIQUID FILTRATION

July 2003

(updated November 2005)

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TABLE OF CONTENTS

	<u>PAGE</u>
Summary & Highlights	3
General Comments	4
Dust/Baghouse Filtration	11
General Comments	11
Applications	12
Filter Media Aspects	13
Fabricators	14
Original Equipment Manufacturers (OEM)	14
Market Size	15
General Comments	15
2005 Estimated Use of Fibers for Needled Felts Used in Baghouse Filtration	17
2005 Prices observed Worldwide for Fibers for Needled Felts Used in Baghouse Filtration Table	18
2005 Needled Felts for Dust Filtration (Roll Goods) – Worldwide	19
PTFE Expanded Membrane Filter Bags and Filter Elements	21
Pleated Dust Cartridge Filters	22
Automotive Filtration	24
Japan	25
Korea	28
China (Peoples Republic of)	29
North America	31
Automotive – Transmission Filters	32
Europe	34
Total Worldwide Estimated Filter Media Sales in 2005	35
Needled Felts in Liquid Filtration	36
General Comments	36
µM Rated Vessel Bags	36
Market Size	38
Plate and Frame Presses, Drum, Disc, Belt Filters	39
North America, Europe, Asia/Pacific	39
Needled Felts for Other Filtration Applications	41
Total Market for Needled Felts in Dry and Liquid Filtration	43
Forecast 2004 – 2010	44
Market Overview of Baghouse Filtration in China	45
Disclaimer	46

SUMMARY & HIGHLIGHTS

The market for needled felts – worldwide – representing **roll goods** consumes approximately 29,000 tons of fiber. In late 2005 that has increased to 34,000 to, mainly because of significant growth in China.

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The total worldwide filter media roll good market represents approximately 65MMm² filter area. This has increased in late 2005 to approx. 82.7 MM m².

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The sales value of worldwide filter media roll goods amounts to \$248.0MM for baghouse filtration. This has increased in late 2005 to

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All needled felts worldwide for dry/dust and liquid filtration amounts to \$.....MM.

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Needled felt in baghouse filtration will be challenged by spun bonded nonwoven media for pleated bag configurations and in addition by Durapex™ type fabrics. That has not changed the jury is still out.

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The overall growth worldwide is tied into government legislation and **enforcement**, but we believe 3% to 5%/year until 2010 is reasonable except for China. We have detailed the Chinese baghouse market as no other company as of late 2005.

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China already today 2002/2003 has aMMm² filter media market of which approximately MMm² are needled felts, MMm² are woven glass, and MMsqm are woven cotton and synthetic fabrics. We believe this market will explode and could develop into aMMm² market by 2010. We were wrong. The needled felt market in China in 2005 exhibits.....MMm² and will “explode” into a 100 MMm² market by 20010/2012.

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Needled felts are today offered at prices below 1995 levels, and we are afraid this trend will continue (if oil prices do not go beyond \$30.00/barrel). Oil prices as of mid 2005 are closer to \$ 55.00/barrel. Prices as a result have gone up. On August 6,2005 oil prices have increased to \$ 67.00+/barrel. As of mid November 2005 there are down to \$52.00/barrel.

We have added to the updated report a detailed assessment of PPS fiber worldwide because 2 new supplies of PPS fiber evolved one in Europe , one in the US. China has become the largest PPS fiber market for filtration.

Meta-aramid is limited due to " resin shortages ". China is growing fast with their own meta-aramid fiber producer.

P-84, Polyester, Kermel®TECH and PTFE are other subjects being listed.

In our original report we have listed the major fibers including Polyester, Homopolymer acrylic, meta-aramid notably Nomex® and TeijinConex®, PPS notably Torcon® and Procon®, P-84 and of course PTFE including all major fibers like Teflon®, Toyoflon®, Profilene®, Rastex® etc. There are also new manufacturers of PTFE fibers, who - in one case were not known to us previously - and who have just entered the market place.

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