What is the concept behind the Micrex Wet Wipe Process?

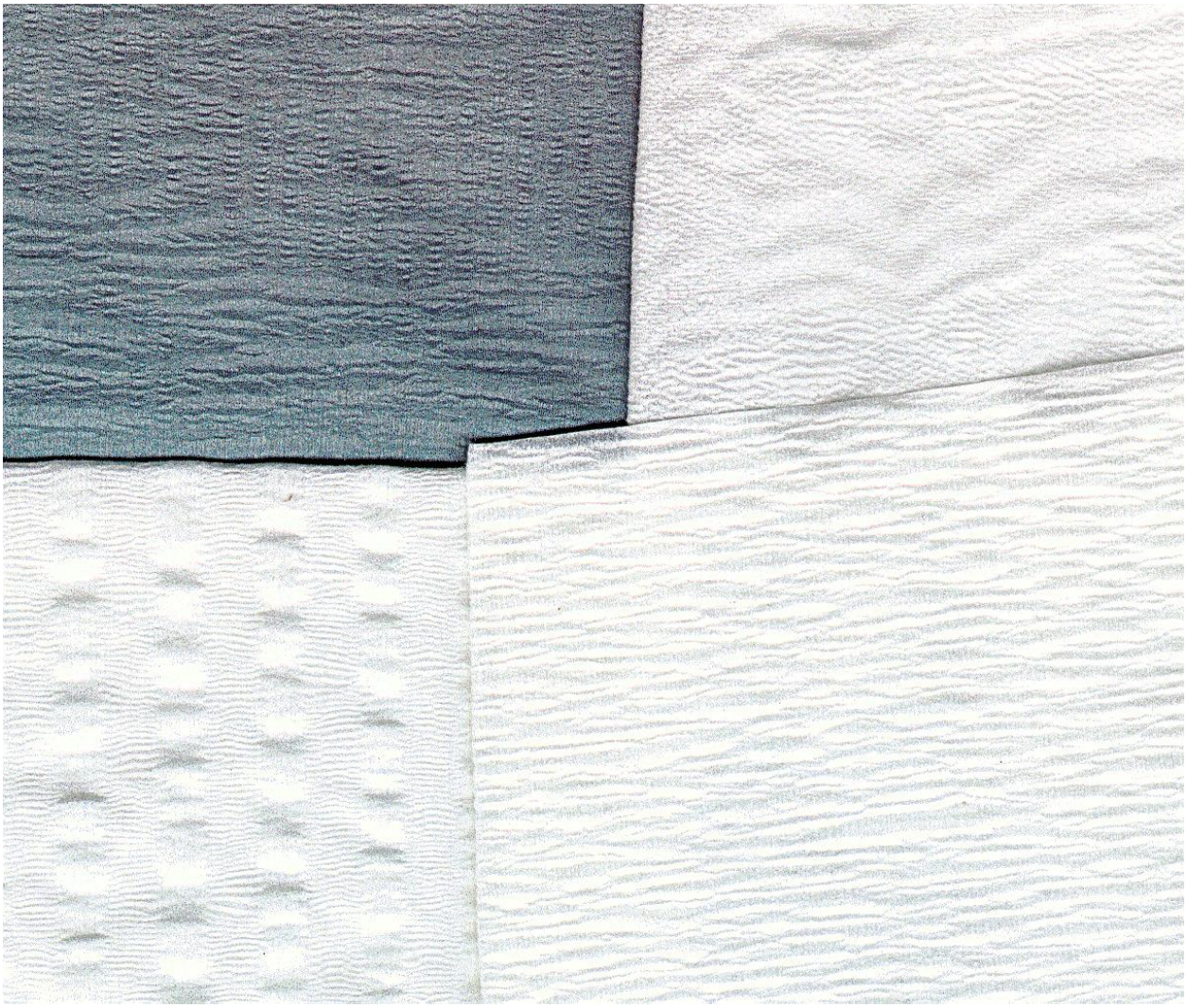
The Micrex Process has been an industry standard for enhancing high end dry, spunlace wipes. Until the development of the Micrex/Wet Wipe Process however, the attributes of improved hand, increased bulk, and softness have been unavailable to manufacturers of wet wipes. With this new process, producers of wet wipes can dramatically increase their product performance and consumer appeal.

What are the benefits of the Micrex Wet Wipe Process?

The Micrex/Wet Wipe Process allows for the nature and character of thermoplastic nonwoven substrates to be radically altered to optimize its appearance and performance for a wide variety of wet wipe applications. This ability to modify functional and aesthetic qualities to match the unique needs of a particular product offers the savvy marketer a very effective way to achieve dramatic product differentiation. For the purposes of this discussion, let us separate these enhancements into two categories, visual and performance.

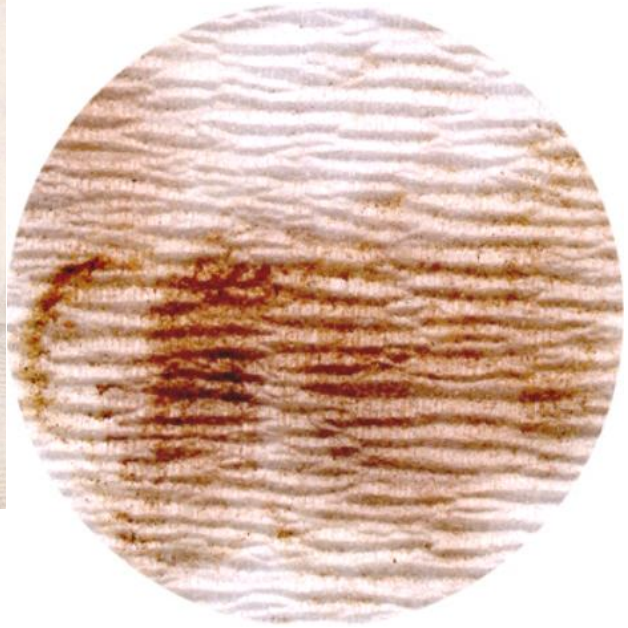
Visual Benefits:

A wide variety of unique patterns and visual effects can be created by the Micrex Wet Wipe Process. These patterns remain highly visible after the wipes are saturated. Microcreping not only improves performance, it adds a distinctive pattern consumers will easily recognize (and might be protected by a copyright).



A further refinement is by combining aesthetics with a functional improvement. For example one problem in standard wipes is sheets attaching so that two or more are pulled from a dispenser when only one was desired**.** By Microcreping a particular pattern into the web, a handle can be formed to ease the extraction of a single wipe.

As a cleaning wipe, the Microcreped substrate provides numerous folds or edges to trap dirt. The way in which each pattern picks up dirt can be matched to a particular cleaning application. These folds also break-up adhesions (or surface tension) when the wipe is in contact with a flat surface – allowing for the wipe to move smoothly over a surface. This greatly enhances both the performance and the perception of a better cleaning product.



In summary: The Micrex/Wet Wipe Process allows each wiper product to be perfectly configured for a particular wet wipe application.

Performance Benefits:

Substrates processed on the Micrex/Microcreper can absorb over 30% more liquid than the same weight of unprocessed material. For the wet wipe manufacturer this translates into either a higher performing wipe, or alternatively, by reducing the basis weight of the material to achieve the same level of performance – a significant cost savings.

Polyester/Pulp Spunlace - Processed:

Performance Improvement

Property	Non-creped	Creped	% change
Weight- Dry (gms)	1.344	1.564	+16%
Thickness-Dry (in)	0.0123	0.0220	+79%
Weight-Wet (gms)	6.08	8.60	+41%
Thickness-Wet (in)	0.015	0.025	+66%
Lotion add on % of dry weight (gms)	4.73	7.04	+49%

Notes:
Liquid added to non-creped wipes was 4.5 x the dry weight, the same ratio as added to creped wipes.
All wipes were 4" x 7" stacked 25 high.
Thickness measured on stacks of 5 high.
JWS Fibrella 4300, 70 gsm

Processed materials will also absorb more quickly, which again translates into cost savings as wet wipe filling lines can be run faster.

Polyester/Pulp Spunlace - Processed:

Absorbency Improvements

	Absorbent Time – Seconds	Absorbent Capacity – gm/gm
Non-Creped	3.8	6.75
Creped	3.0	8.97
% Change	-26%	+33%

JWS Fibrella 4300, 70 gsm

What composition of spunlace responds best to the process?

The optimal configuration seems to be a blend of at least 30% polyester and wood pulp. Polyester and viscose also processes well, but without as dramatic an improvement in absorbency. Polypropylene blends are an option, and Micrex has recently modified the process to compensate for the melting of the polypropylene, which reduces the absorbency and limits the ultimate processing speed.

What kind of protection does Micrex have on this development?

The Micrex/Microcreper is covered by US and International patents. Since the Micrex/Wet Wipe process is a new development, we have patents pending in the US and overseas. Micrex will consider granting an exclusive license in particular fields to the wet wipe technology. We also believe that individual styles or patterns of wipes may be protected by copyright.

What does it cost?

A complete Micrex®/Microcreper system for processing material 1.7 meters wide at 200 meters per minute would cost approximately $600,000. For the purposes of a complete analysis, we assume that $150,000 of additional equipment (fork lifts, installation of services, etc.) is necessary.

Assumptions:		
Width (meters)		1.7
Operating Speed (meters)		200
Efficiency		0.65
Shifts		2
Days		300
Operators		1.5
Cost per operator per hour	$	21
Electric per hour	$	3
Consumable parts per hour	$	8
Roll recoating per hour	$	1
Annual Overhead	$	50,000
Initial Investment	$	750,000

Calculations:		
Hours per year		4,800
Sq. Meters per hour:		13,260
Sq. Meters per year:		63,648,000
Variable cost per hour:	$	44
Variable cost per year	$	208,800
Investment / 10	$	75,000
Overhead	$	50,000
Total Annual Cost	$	333,800
Cost per sq. meter		0.00524

Were this machine to be run for two shifts, 300 days per year, the cost of enhancing the wipes would be about $0.005 cents per square meter. Slitting can be performed in-line, further reducing costs.

Micrex is focused on getting your product to market quickly and efficiently. We can perform contract Microcreping to help with product development, market test, new product launch, or building market volume. This is a way to quickly and economically launch a new generation of wiper products. Converting prices start at $0.03 per square meter and decline with volume. At the appropriate time, Micrex can supply a turnkey Micrex/Microcreper

Tell us about Micrex?

Micrex Corporation is the developer of an enabling technology which imparts properties of softness, extensibility, conformability, and bulk to nonwovens, films, textiles, papers, and composites. This technology – which is embodied in an expanding series of machine configurations known as Micrex®/Microcrepers™ -- allows companies to dramatically expand the use and application for traditional as well as new sheet materials.

Numerous patents have been granted to Micrex in the fields of substrate compaction and softening. Micrex has demonstrated its capability of being a strong, innovative, and committed product development partner for some of the largest and most sophisticated companies in the world. Eight of the top ten nonwoven roll goods producers utilize Micrex technology.

Micrex's development methodology is built around four principles:

- Quick response and rapid prototyping as a requirement
- Ability to rapidly go from a lab-scale prototypes to global sourcing of Microcreped product
- Understanding the importance of cost at all stages of a development.
- A rigorous respect for the IP and confidentiality of our customers.

The company's headquarters, manufacturing and development facilities are located outside of Boston, Massachusetts. Micrex is growing, a stable employer, consistently profitable, and has no long-term debt.

Much of Micrex's sales have been to customers outside the United States. Micrex/Microcrepers are in use in Japan, Germany, France, Holland, United Kingdom, China, Indonesia, Taiwan, Korea, Canada, Brazil, Pakistan, Spain, Sweden, India, Philippines, Malaysia and United States.