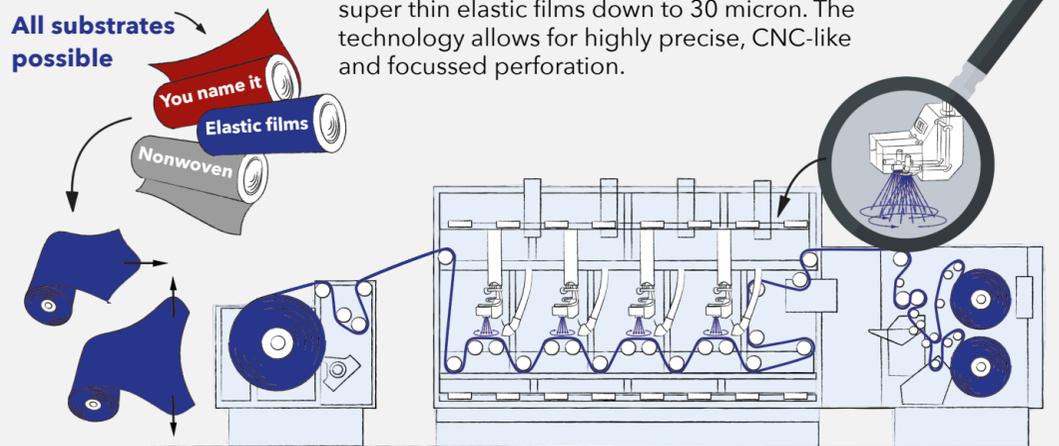


# The Technology

## Lite Film Perforation (LFP)

**Lite Film Perforation is a unique innovation by Nitto:** The highly flexible laser system works with any substrate and film thickness – even with super thin elastic films down to 30 micron. The technology allows for highly precise, CNC-like and focussed perforation.

All substrates possible



Flexible perforation patterns are just one click away now!

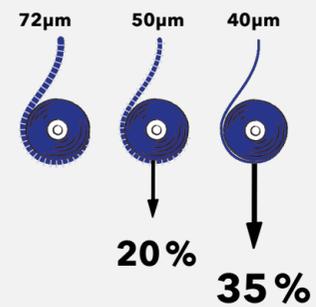


## Sustainability without compromise

With Lite Film Perforation, we can perforate even super thin substrates, saving material and production resources – with no compromise in film performance and comfort.

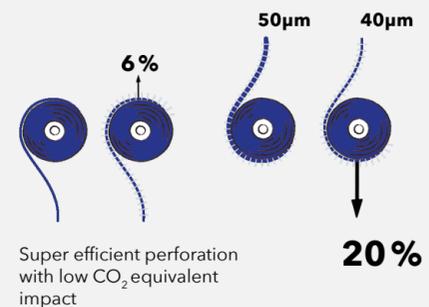
### Elastic film

Perforated thin film with comparable performance, lower CO<sub>2</sub> footprint, no loss in comfort.



### Waistband

Perforation of waistband leads to +6% CO<sub>2</sub> impact only. Waistband Solastick CD 50µm vs. 40µm saves ~ 20% CO<sub>2</sub> equivalent.



based on internal LCA comparison, method: IPCC 2013 GWP 100a V1.03

**Nitto Advanced Film Gronau GmbH**  
 Jöbkesweg 11 | 48599 Gronau | Germany  
 T +49 2562 919-0  
 www.nitto.com



**Nitto**

Innovation for Customers

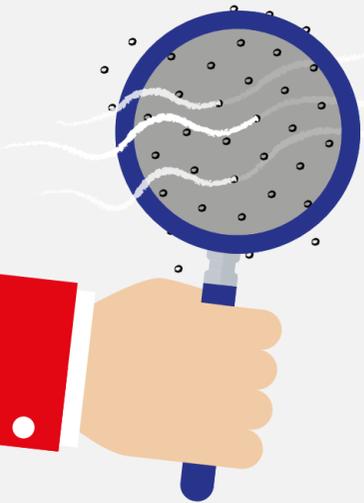
## Breathable Films



www.nitto.com

# Breathable Film Solutions

## A breath of fresh air



Nitto developed a breathable film, high in comfort, affordable to the end consumer and highly processable for our customers.

### Benefits & Characteristics

#### For our customers



**Performing**  
Efficient & processable on multiple converting lines



**Pattern optimized**  
Cross direction (CD) and machine direction (MD), tailored pattern designs



**Flexible**  
High flexibility for shape orientation, size, density and pattern design

#### For end customers



**Breathable**  
Even in functional parts of the diaper - less skin irritations



**Reliable**  
The perfect and comfortable fit stays unchanged



**Comfortable**  
Breathability increases comfort for the wearer



**Affordable**  
Thinnest substrates for the consumer

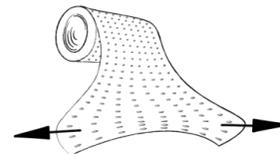


#### Sustainable

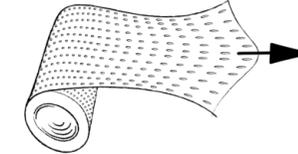
Reduction of material use, saving production resources

# The Products & Highlight features at a glance

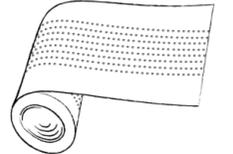
Breathable solutions for 180° open diapers and 360° pants. Discover our Breeze product range.



cross-direction

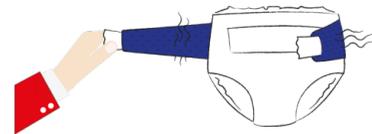


machine-direction



### Premium **StretchEarBreeze**

Use: Baby care, adult incontinence  
Product options: PSE I - III, Evo, Lite



- 80 - 100 g/m<sup>2</sup>
- Identical extension performance 100 [%]
- Same or similar mechanical performance  
Permanent Set: < 5 [%]  
Elongation @ break 750 [%]

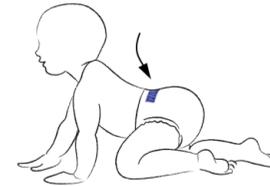


#### Breathability

Air permeability [m<sup>3</sup>/m<sup>2</sup>/min]  
acc. PA\_256

### **WaistbandBreeze**

Use: Baby care, adult incontinence  
Product options: Solastic-CD & Activated Waistband



- 40 or 50 µm film
- Multiple colors
- Identical unload performance  
[2nd @ 75 % = 1,1]  
Same or similar mechanical performance  
Permanent Set: < 5,5 [%]  
1st load force @ 120% cycle 2,8 [N/25 mm]

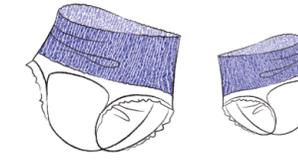


#### Breathability

Air permeability [m<sup>3</sup>/m<sup>2</sup>/min]  
acc. PA\_256

### **MD Elastic FilmBreeze**

Use: Adult incontinence, femcare  
Product options: Soft, SuperSoft



- 30 or 40 µm film
- Transparent, translucent, opaque
- Identical 2nd unload performance @ 300% ~ 3 [N]  
similar converting performance, ~ 250 [%]  
MD pre-stretch ~ 250 [%]  
CD neck-in rate ~ 30 [%]



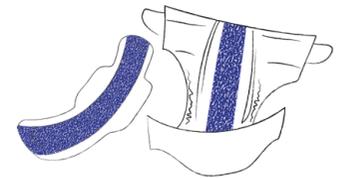
#### Breathability

Air permeability [m<sup>3</sup>/m<sup>2</sup>/min]  
acc. PA\_256



### **TopsheetBreeze**

Use: Baby care, adult incontinence, femcare  
Product options: ATB Loft 20 HI UW, CTB 22 HI



- 20 or 22 g/m<sup>2</sup>
- Perforation design: CD registered for functional area
- Concept study



#### Strike through / wetback

average strike through [S] acc. WSP70.3(08)



average wetback [g] acc. WSP80.10(09)

With our high-end stretch films, performance and comfort go hand-in-hand. For the ultimate product experience, contact us and ask for samples.

For samples and technical data sheets: Contact us! [www.nitto.com](http://www.nitto.com)