



Product Innovation Webinar: r-MicronQuick



INTERNAL

Decembre 2021

a brand of  **FREUDENBERG**

Concept Background

LEADING WITH **LESS**

The new recycled
durable wipes



vileda[®]
PROFESSIONAL



a brand of

FREUDENBERG

LEADING WITH LESS

As a global leader in cleaning solutions, we firmly believe that every product we develop must contribute to a sustainable future. That's why we have created a brand-new range of durable wipes that are coming with up to 70% recycled superior superior microfibre technology – for no compromises on the cleaning performance and hygiene.

This is all part of our drive to help you further reduce your stakeholders footprints by reducing waste and CO₂ emissions throughout the cleaning process. So, take this as an advantage to further grow your business whilst contributing to a healthier planet: **Leading with less.**

The new recycled durable wipes

LEADING MICRONFIBRE
HYGIENE &
DISINFECTION



LESS
PES-WASTE
& CO₂

Up to

100%

recycled

100%

hygiene

This is how we did it.

The r-process by Vileda Professional:



Post-consumer plastic



Shredded into
flakes



Flakes are processed
into fibres



Fibres are knitted
into cloth



r-durable wipes

The new recycled durable wipes



LEAD WITH

r-MicronQuick



r-MicronQuick

r for responsibility

r for resources

r for recycled

Clean meets green.

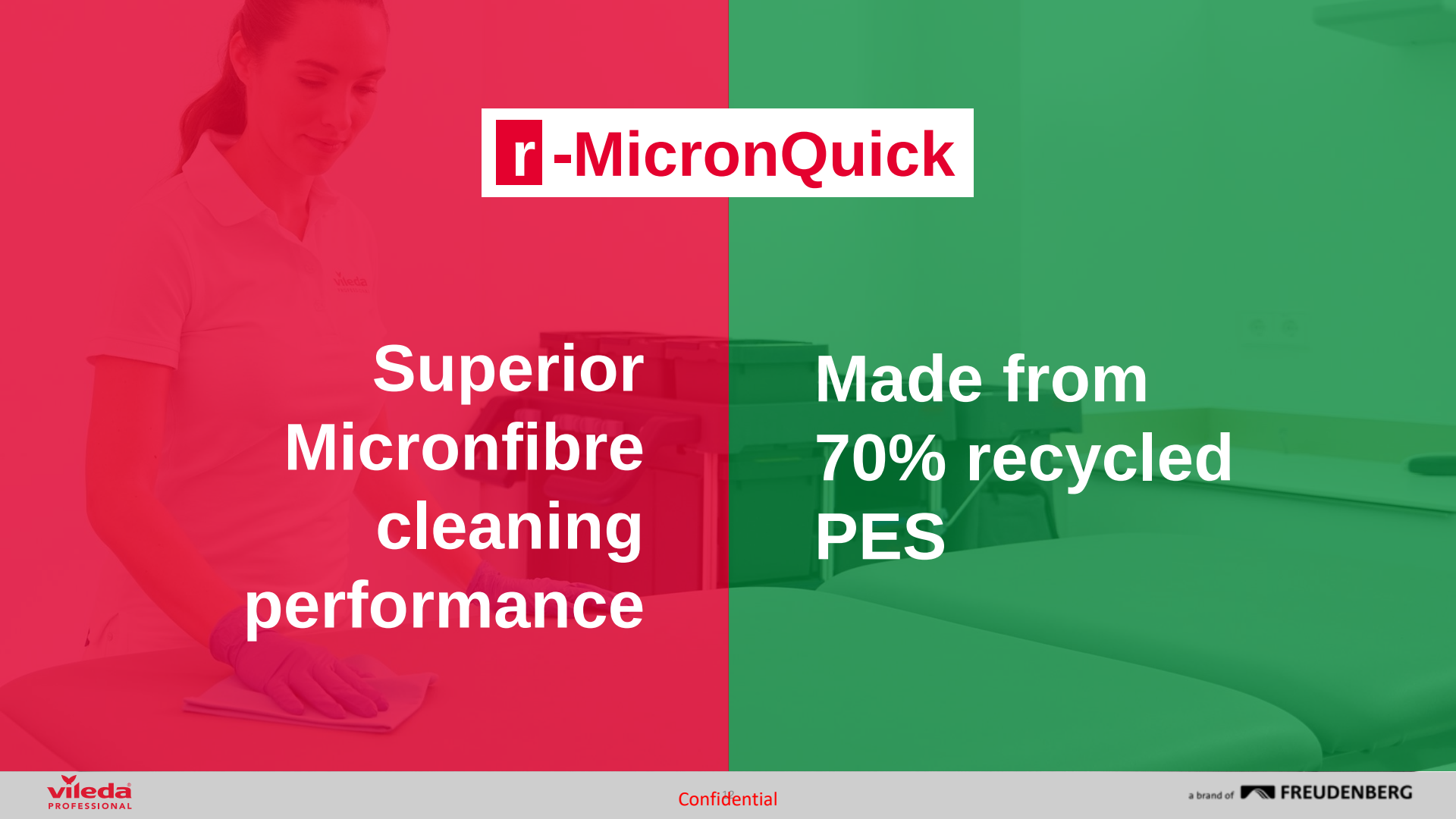


Since we love it clean, everywhere

we use our „Love It Clean“ label to highlight
the most sustainable product choices

– such as the **r-MicronQuick**





r-MicronQuick

**Superior
Micronfibre
cleaning
performance**

**Made from
70% recycled
PES**

r-MicronQuick



Superior Micronfibre
cleaning performance



Streak free
cleaning



99.99% virus
removal performance



70% recycled
materials

Technical part

Product Execution

r-MicronQuick



Cloth is made from **73% recycled polyester**

All recycled polyester is made from post-consumer plastic

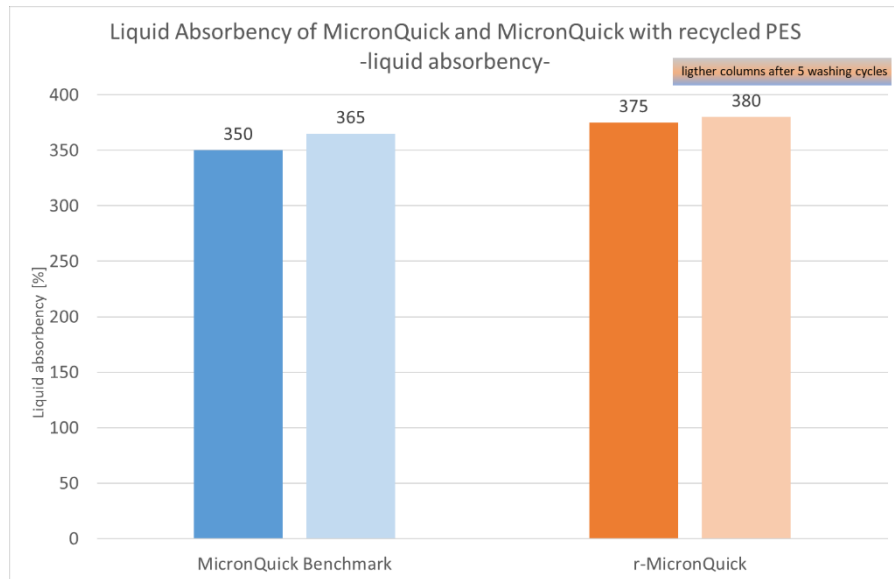
Weight: 135 g/sm

Size: 38 x 40 cm

Colors: Available in 4 colors, B/R/G/Y

Performance Test Results

Liquid absorbency



- ✓ No noticeable difference for customers
- ✓ Difference: non-washed: 7%
washed: 4%

Performance Test Results

Washing durability test

RESULT

The tested product lasts up to **400** washing cycles.

After 400 wash cycles the r-MicronQuick cloth is still okay for use in cleaning. >400 washing cycles the cloth gets holes and/or weak points in the construction.



Photo: r-MicroQuick between 50 and 400 washing cycles

- Same durability of r-MicronQuick vs. MicronQuick in the washing durability test
- **Up to 400 washing cycles** with Ozonit Performance – RKI Listed chemical- thermal- disinfection procedure

Supply Chain Set up



External Reports/Certificates

External Reports

Virus Removal

Up to 99.99% Bovine corona virus removal from vinyl surfaces is achieved for r-Micron Quick



*Tested with Bovine corona virus on vinyl surfaces at a 3rd party lab

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Regional Technical Centre Europe
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DE - 69469 Weinheim

Bremen, 07/10/2021

Statement regarding cleaning efficiency of r-Micron Quick tested based on EN 16615

The following cleaning wipe, manufactured by Vileda Professional, was examined based on EN 16615¹

on PVC-plates:

- r-Micron Quick (soaked with water) => test report L21/00961BC.1

As test virus the bovine coronavirus (BCoV) was used. BCoV belongs to the family of the Coronaviridae and is member of the genus Betacoronavirus as well as the SARS-associated coronavirus, SARS-CoV-1 and SARS-CoV-2.

After the cleaning procedure with the tested cleaning wipe, a virus removal of 99.999 % could be achieved for r-Micron Quick.

Dipl.-Biol. Dr. rer. nat. Dajana Paulmann

¹ EN 16615:2015. Chemical disinfectants and antiseptics - Quantitative test method for the evaluation of bactericidal and yeasticidal activity on non-porous surfaces with mechanical action employing wipes in the medical area (4-field test).

Statement- cleaning efficiency of r-Micron Quick tested based on EN 16615 Version 01

External Reports

Bacteria Removal

Up to 99.99 % *Pseudomonas aeruginosa* & *Staphylococcus aureus* removal from vinyl surfaces is achieved for r-MicronQuick



*Tested with *P. aeruginosa* & *S. aureus* on vinyl surfaces at a 3rd party lab.

Biologisches Mess- und Analyzelabor GOR

BMA LABOR

Laborbericht / Laboratory Report

Auftraggeber / Client: Freudenberg Home and Cleaning Solutions GmbH, Regional Technical Centre Europe
Hochenzweig 2-4, Bau 149, 69169 Weinheim
Herr Thorsten Glöck

Auftragsdatum / Date of order: 16.08.2021
Ihre Auftraggeber / Your order no.: 146 / 4501229789
Probeneingang / Intake: 17.08.2021
Probenehmer / Sampler: Auftraggeber / Client

1. Probestand (Bezeichnung entsprechend Kunden)
Specimen indication according to customer's information
Wipe: r-MicronQuick

2. Untersuchung / Examination
Mikrobiologische Untersuchung von Produkten / Microbiological examination of products / Microbiological examination of the r-MicronQuick, eingefärbt mit zwei Bakterienarten / Examination of the wipe r-MicronQuick, moistened with strains.

4. Untersuchungsergebnisse / Test results
Die Ergebnisse der Messungen und Analysen beziehen sich ausschließlich auf die untersuchte Probe.
The results of the measurements and analyses exclusively refer to the examined sample.

4.1 Bakterienkonzentration auf der vorgegebenen Testfläche / Amount of bacteria on the pre-cleaned test surface

Probe/Identifikation / Sample/Identification	Problem Nr. / Sample no.	Durchschnittl. Bakterienkonz. / Mean bacteria conc. μg -aeruginosa + S. aureus
Testfläche / Test surface (flüssig/liquid) / (positive control) 210812-04/1	1.1-1.3	2 H
		$3,2 \times 10^4$

^H Nachweisgrenze Ausstrichmethode: 100 cfu/10 ml (square), ^M Nachweisgrenze Agarplattmethode: 1 KBE/10 ml (Rechteck) / ^M Detection limit smear method: 100 cfu/10 ml (square), ^M Detection limit plating method: 1 CFU/10 ml (square)

4.2 Bakterienkonzentration auf der Testfläche nach Anwendung des Wischtuchs / Amount of bacteria on the test surface after use of the wiping cloth

Probe/Identifikation / Sample/Identification	Problem Nr. / Sample no.	Durchschnittl. Bakterienkonz. / Mean bacteria conc. μg -aeruginosa + S. aureus
Testfläche nach Bakterienaufschlagung / Test surface after bacteria application (Phosphorschwefelsäure) / (Positive control) 210812-04/1	1.6-1.9	$6,9 \times 10^4$ H
		$3,1 \times 10^4$
Testfläche nach Bakterienaufschlagung und Reinigung mit r-MicronQuick Tuch / Test surface after bacteria application and cleaning with r-MicronQuick cloth / 210812-04/1	1.10-1.39	$8,3 \times 10^3$ H
		$2,3 \times 10^4$
Reduktion / Reduction [H]		> 99,99

^H Nachweisgrenze Ausstrichmethode: 100 cfu/10 ml (square), ^M Nachweisgrenze Agarplattmethode: 1 KBE/10 ml (Rechteck) / ^H Detection limit smear method: 100 cfu/10 ml (square), ^M Detection limit plating method: 1 CFU/10 ml (square)

Dr. Ute Thielmann
Geschäftsführung / Manager

Stefanie Wollenberg
QM / QM

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BMA-Labor GbR, Bochum

Love it Clean

Love it Clean Criteria



CRITERIA	MEASURE	WEIGHTING
Product made from recycled	min 30% of total product	20%
Product made from renewable resources	partly (0.5)/ fully (1)	10%
Product is recyclable/ compostable*	100%	20%
Handprint (Waste) vs. Competitive set	less chemical/ water/ waste/ more durable	20%
Carbon Footprint transport	Europe vs. Asia; Shipping efficiency (Air/ water?)	10%
Clear competitive advantage on eco*	strong eco claim (e.g. zero waste for 2 years) vs. Competitive set	10%
Packaging eco vs. Competitive set	More ecological than competitive set	10%

r-MicronQuick
1
1
1

Meet min 2
Meets weight

100%
TOTAL

3
50%



Life Cycle Analysis

CO₂ Savings Calculator & PET Bottle Converter

r-MicronQuick

Vileda Professional MicronQuick	
Please enter the number of single MicronQuick wipes, BCUs or TSUs:	20000 Wipes
	0 BCUs
	0 TSUs
Number of MicronQuick wipes	20000 Wipes
Carbon footprint of the fabric production - virgin material	2768,0 kg CO ₂ e
Carbon footprint of the fabric production - recycled material	2368,0 kg CO ₂ e
Savings by using rMicronQuick wipes	400,0 kg CO ₂ e
Recycled 0,5l PET bottles	58303 Bottles
The savings equal to a distance travelled by car of	3030 km**



CO₂-Calculation based on reviewed ISO 14067 Product Carbon Footprint study conducted by Vileda Professional.

* Production includes production of basic materials and production of MicronQuick fabric. Packaging and transport to central warehouse in EU are same for both products and therefore excluded.

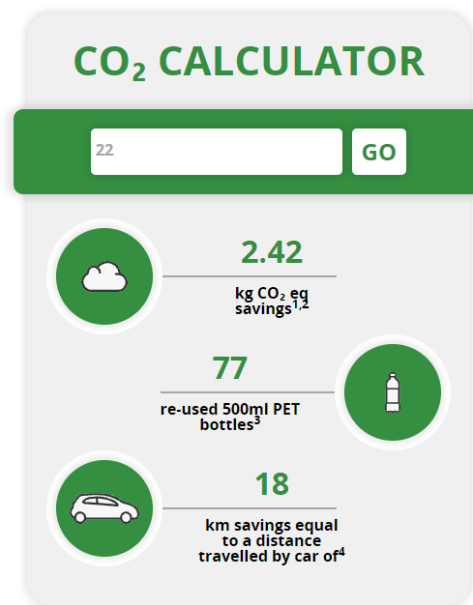
** Average CO₂-emissions of petrol fuelled car at 5,6 l/100km: 0,132 kg per km (Source: <https://rechneronline.de/co2-ausstoss/>)

- ! Please always mention statements above when sharing any results with customers.
- Please do not claim these savings on website or any other communication materials.

CO₂ Savings Calculator & PET Bottle Converter

**Calculate your
benefits**

Available for r-MicronQuick



[1] Production includes materials, production, packaging and transport to central warehouse of products manufactured in China. [2] Compared to use of virgin materials. LCA conducted for reference year 2020. EN ISO 14040/44 moreover requires the review of all study results and conclusions by an external expert panel, conducted in 2021. [3] Post-consumer material: According to ISO 14021: 2016-07, the expression "post-consumer material" defines "Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used

Thank you