PVAmicro cloth

Internal Launch Presentation

18th of September 2013, Joerg Dunkel

internal

PVAmicro - Agenda

- Background
- Product features
- What is PVA material
- Technical tests
- Positioning
- Pricing / ADS
- Communication Material

Background

Background

PVAmicro

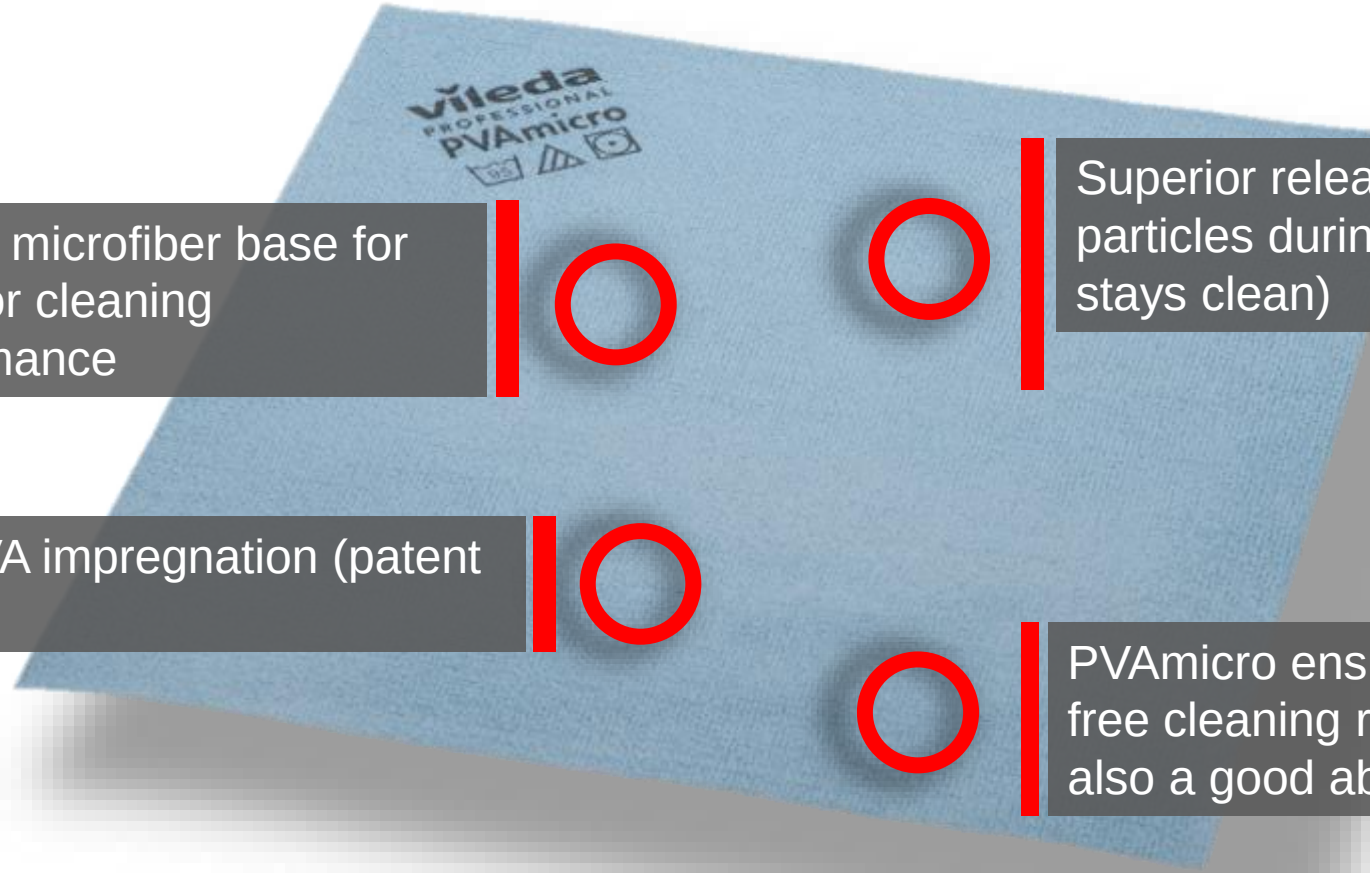
- The Microfibre/Polyurethane cloth *PURmicro* launch in Q1 2013 was a big success due to two main reason:
  - *PURmico* cloth is following the market trend of knitted microfibre cloths.
  - The cloth has a superior performance which is easy to notice during use.
- With the development of **PVAmicro** we want to participate on the success of impregnated knitted microfibre cloths by using our unique PVA technique. We have applied for a patent for this new product.

Background – PVA Material

- Professional window cleaner used it since years
- Is used as a synthetic chamois, famous for streak free cleaning and absorbency
  => making it the cloth of choice for professional window cleaners and car cleaners.
- We are the first to combine the high absorbency and streak-free properties of PVA with the well known cleaning performance of microfibre.
- Patent pending unique production process.
- Vileda Professional was the first company launching microfibre cleaning cloth in the European professional market. Now we Vileda is continuous leading the innovation in professional wiping by launching the latest generation of microfibre cloth.

Features of PVAmicro

Features of PVPmicro



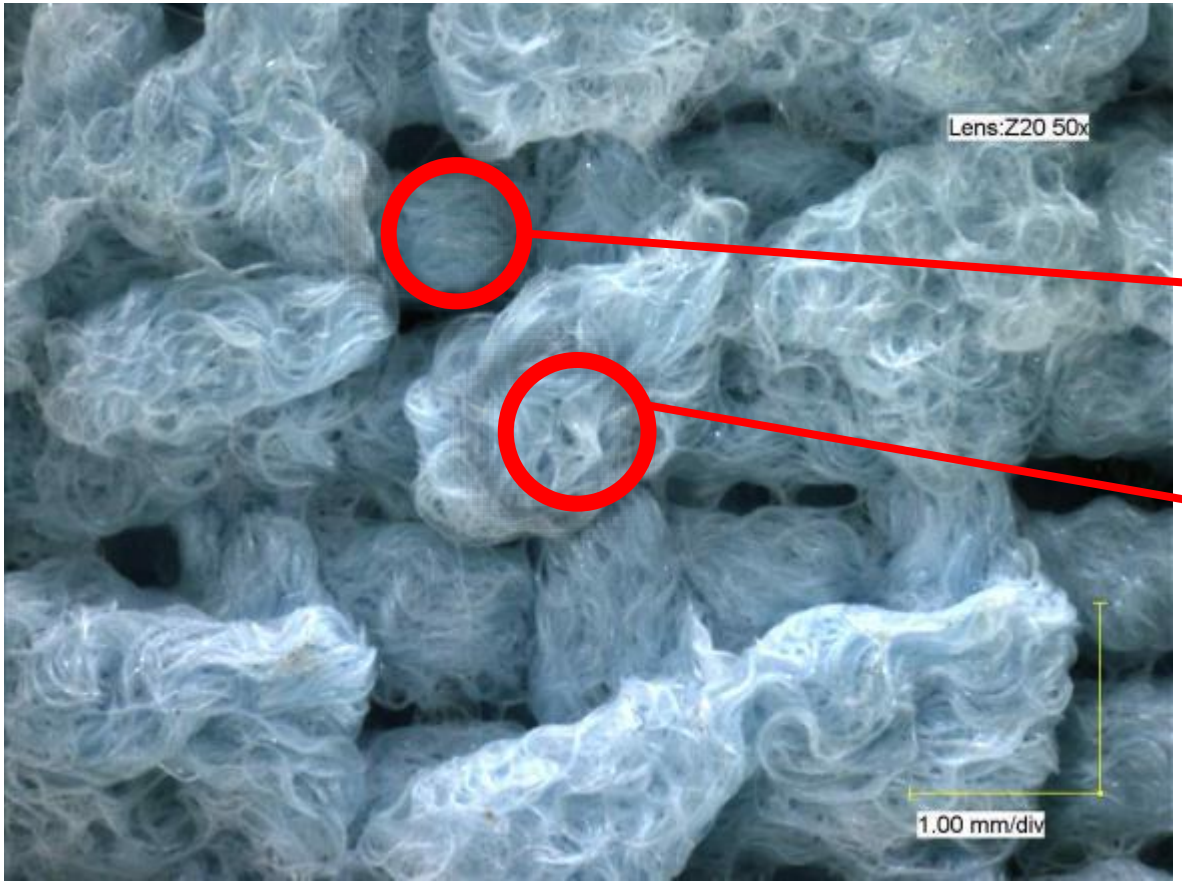
Knitted microfiber base for superior cleaning performance

Superior release of dirt particles during rinsing (cloth stays clean)

Unique PVA impregnation (patent pending)

PVAmicro ensures a streak free cleaning result but has also a good absorbency.

Microscopic Pictures



Take a closer look:

Microscopic picture 50 x

Basic fabric with 3D loop structure for MF cleaning performance

Very thin PVA impregnation to ensure superior rinsibility of dirt particles and water absorbency

Microscopic Pictures

Microscopic picture 100 x

Microscopic Pictures

Microscopic picture 200 x

PVA layer only partially covers the microfibre to ensure perfect cleaning performance.

What is PVA material?

What is PVA Material

- Polyvinyl alcohol (PVA) is a water-soluble synthetic polymer.
- Professional window cleaner used it since years
- Is used as a synthetic chamois, famous for streak free cleaning and absorbency
  => making it the cloth of choice for professional window cleaners and car cleaners.
- Vileda it the first company combine the high absorbency and streak-free properties of PVA with the well known cleaning performance of microfibre.
- This is a unique production process (patent pending) .
- Vileda Professional was the first company launching microfibre cleaning cloth in the European professional market. Now Vileda is continuous leading the innovation in professional wiping by launching the latest generation of microfibre cloth.

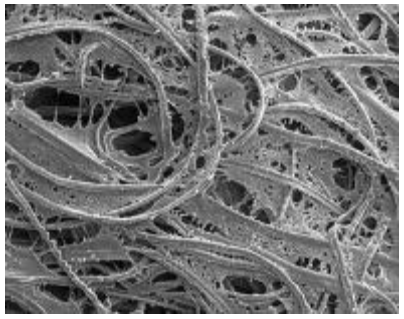
What is PVA Material – Process

Water
+
Polyvinyl alcohol
+
Mixing

PVA impregnating of knitted microfibre fabric

Crosslinking agent

+ Catalyst



Crosslinking

Benefits of PVAmicro

Benefits of PVAmicro

Microfibre cleaning performance

- PVAmicro is made of state of the art microfibre, ensuring **perfect cleaning results**

Easy to rinse

- After rinsing in a bucket PVAmicro **holds 40 times less particles** in the cloth vs. conventional knitted microfibre cleaning cloths.

Streak free cleaning result

- Surfaces dry faster with less streaks as PVAmicro releases **50% less water on surfaces** than conventional knitted microfibre cloths.

Benefits Overview

Function/Feature	Benefit for the customer
Microfibre cleaning performance	• Better cleaning results => improved customer satisfaction • Less detergent needed => reduced chemical costs and more ecological cleaning
Easy to rinse	• Cloth looks unstained for a longer time • Less need to launder the cloth regularly • Less risk of scratching surfaces with particles remained in the cloth => maintaining the value of the building and its interiors.

Benefits Overview

Function/Feature	Benefit for the customer
Streak free cleaning result	• No drying step needed =>faster cleaning • Faster drying of surfaces => surfaces can be use again quicker (e.g. office desks, tables in restaurants)
PVAmicro is very absorbent	• Normally microfibre cloths are either good in absorbency (e.g. MicroTuff Plus) or are good in streak free cleaning (e.g. Quickstarmico). Now PVAmicro can do both which makes this cloth unique in the market.

Vileda Research

Scratching characteristics of microfibre cloths

FHP Research – Background

Some years ago cleaning magazines made the statement, that microfibre cloths have an abrasive effect and can scratch chromium-plated sanitary fittings.

In order to find out, if the microfibers are really the reason for the damages, FHP has made a research. Purpose was to evaluate the (non-)scratching behavior of different cloths (incl. microfibers).

Test description of FHP research

1. Saturation of different cloths with commercially available sand and afterwards manual rinsing/wringing.
2. Wiping simulation with Gardner lab test machine on chromium-plated brass-metal sheets.
3. Surface Topography Analysis to check, if the chromium plate is scratched
4. Ashing (buring) of rinsed cloths for sand content determination.

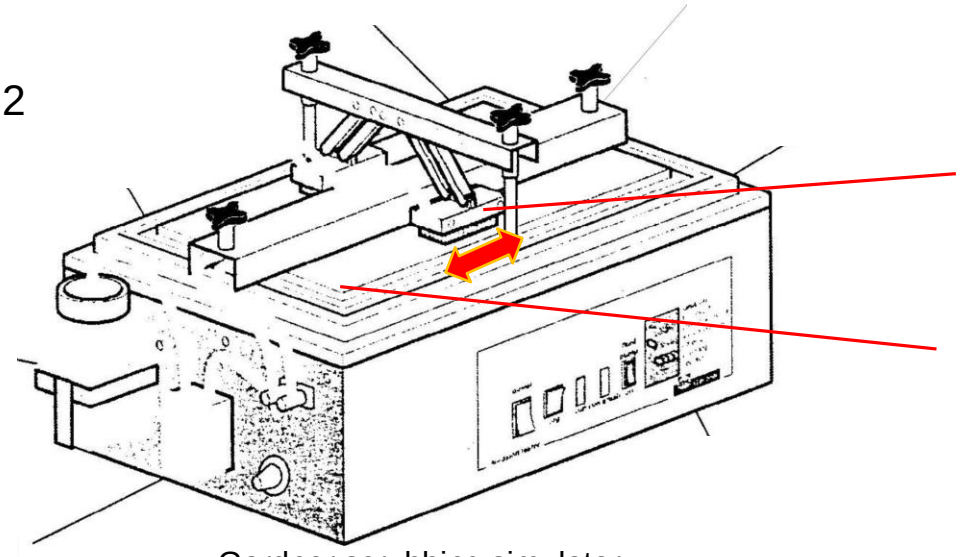
FHP Research – Testing

Wiping simulation with Gardner lab test machine on chromium surfaces

Damp cloths are prepared with and without sand. Then the cloths are clamped into a Gardner wiping simulator, which moves back and forth over a chrome plate. After a defined time, the chrome plate is scanned for scratches (see next page).

Test parameter:

- contact pressure 0.3N/cm2
- lateral movement
- 1.350m in total distance

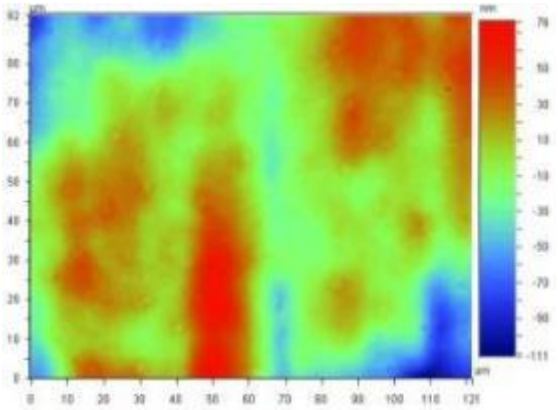


Gardner scrubbing simulator
(acc. to DIN 53778, ISO 11998, ASTM D 2486)

FHP Research – Results

Surface Topography Analysis of Chromium surface

before wiping

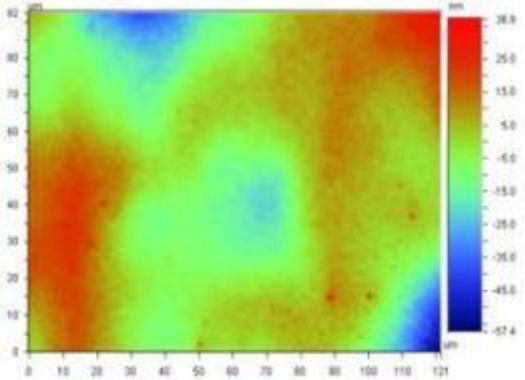


wiping directoin

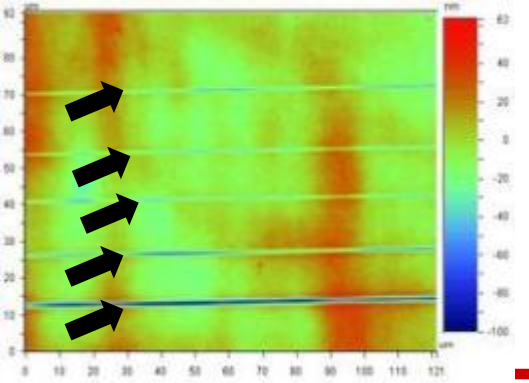
Untreated chromium plate – with colour differences due to unevenness of the material

Light Interference Microscopy
(area: 120 x 90 µm)

after wiping



wiped surface with microfibre cloth **without** sand
=> no scratches



wiped surface with microfibre cloth **with** sand,
=> scratches in wiping direction are visible

FHP Research – Conclusion

Conclusion

This research has proven that microfibre cloths cannot scratch hard surfaces like chrome fittings .
But if cloths are contaminated with particles like sand then there is a very high risk to scratch the wiped surface.

An easy-to-rinse cloth, which releases all particles while manual rinsing, can be a major contributor in maintaining the value of the building and its interiors as it is leaving the wiped surface scratch free.

Technical tests

PVAmicro – Technical tests

Excellent lab results:

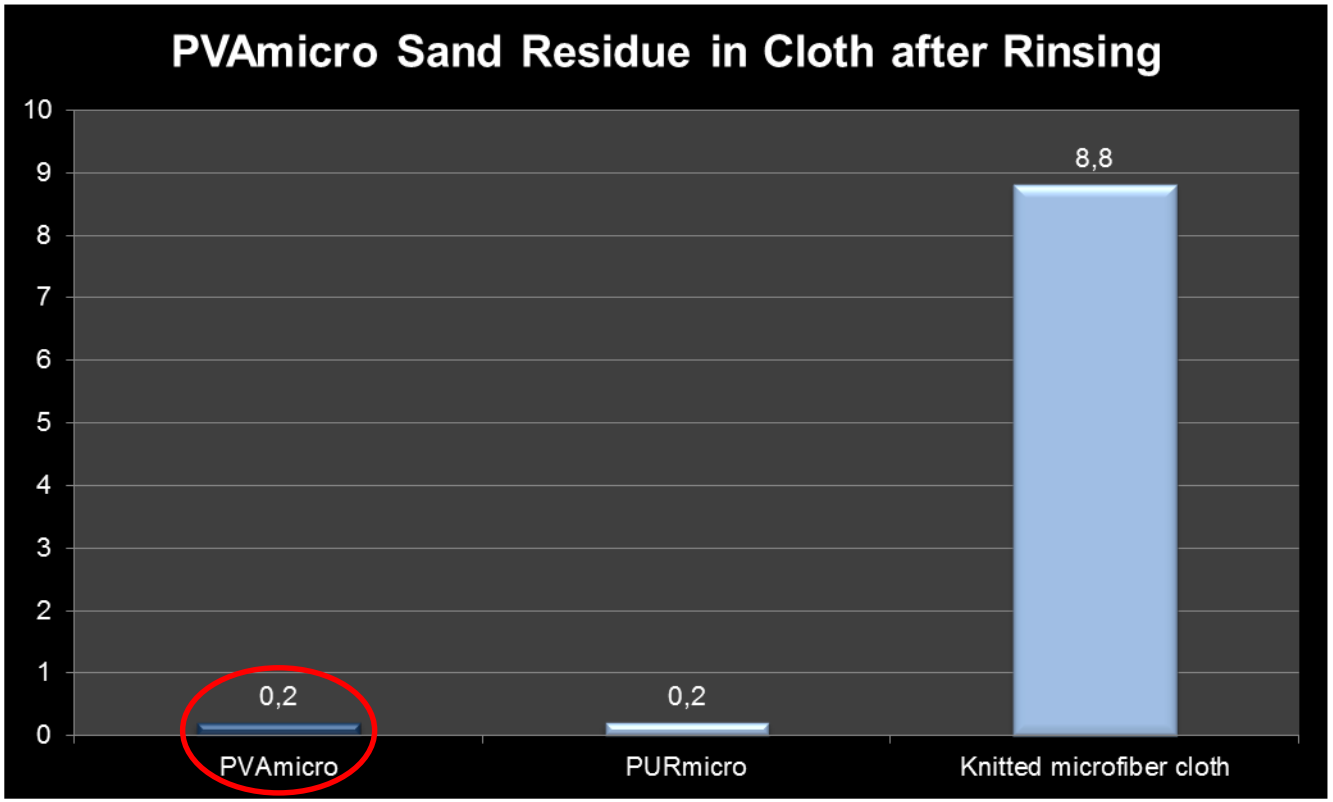
- **Rinse ability** is significantly better vs. Terry Type MF cloths, same value like PURmicro
- **Cleaning performance** significantly better vs. non-MF cloths (but comparable to PURmicro and MicroTuff Swift)
- **Streak freeness** significantly better vs. Terry Type MF cloths and same level as PURmicro (very low water release on surface)
- **Water absorbency** significantly better than PURmicro, and slightly better than Terry Type MF cloths
- Good appearance after **400 washes**
  PVA still on the cloth surface

Easy to Rinse

Manual Rinsability Test of PVAmicro

1. Cover a wet cloth with sand and do a wringing action so sand is in the cloth
2. Put the cloth in bucket with water 3 times
3. Check sand residue in cloth

PVAmicro – Technical tests

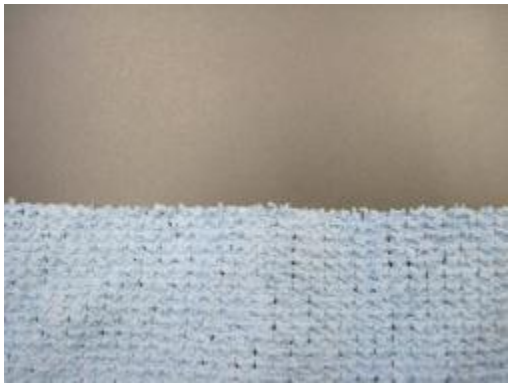


- Ordinary Terry Type cloths difficult for rinse, sand particles remain in the fluffy cloth structure
- PVAmicro with 40 times less particle residue vs. standard knitted terry type cloth
- Comparable to PURmicro

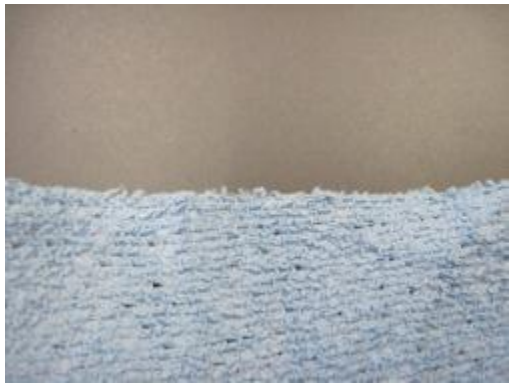
Washing Test

100x 60°C

200x 60°C



300x 60°C

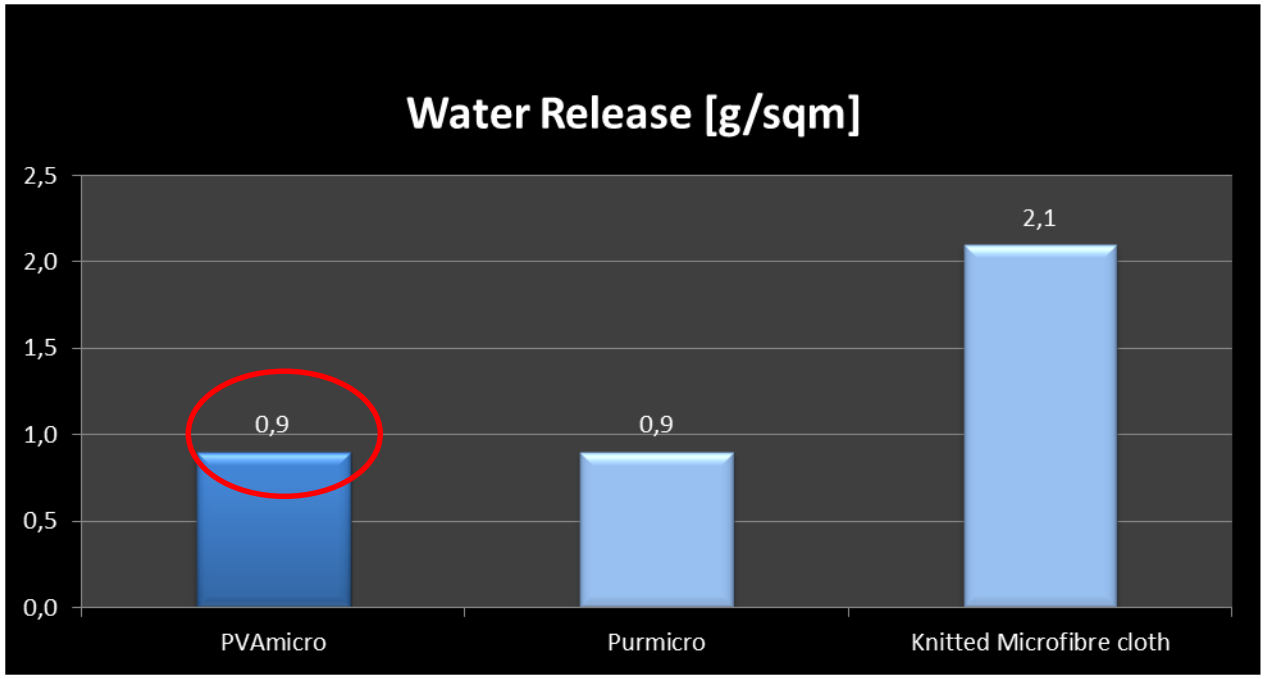


400x 60°C

Result

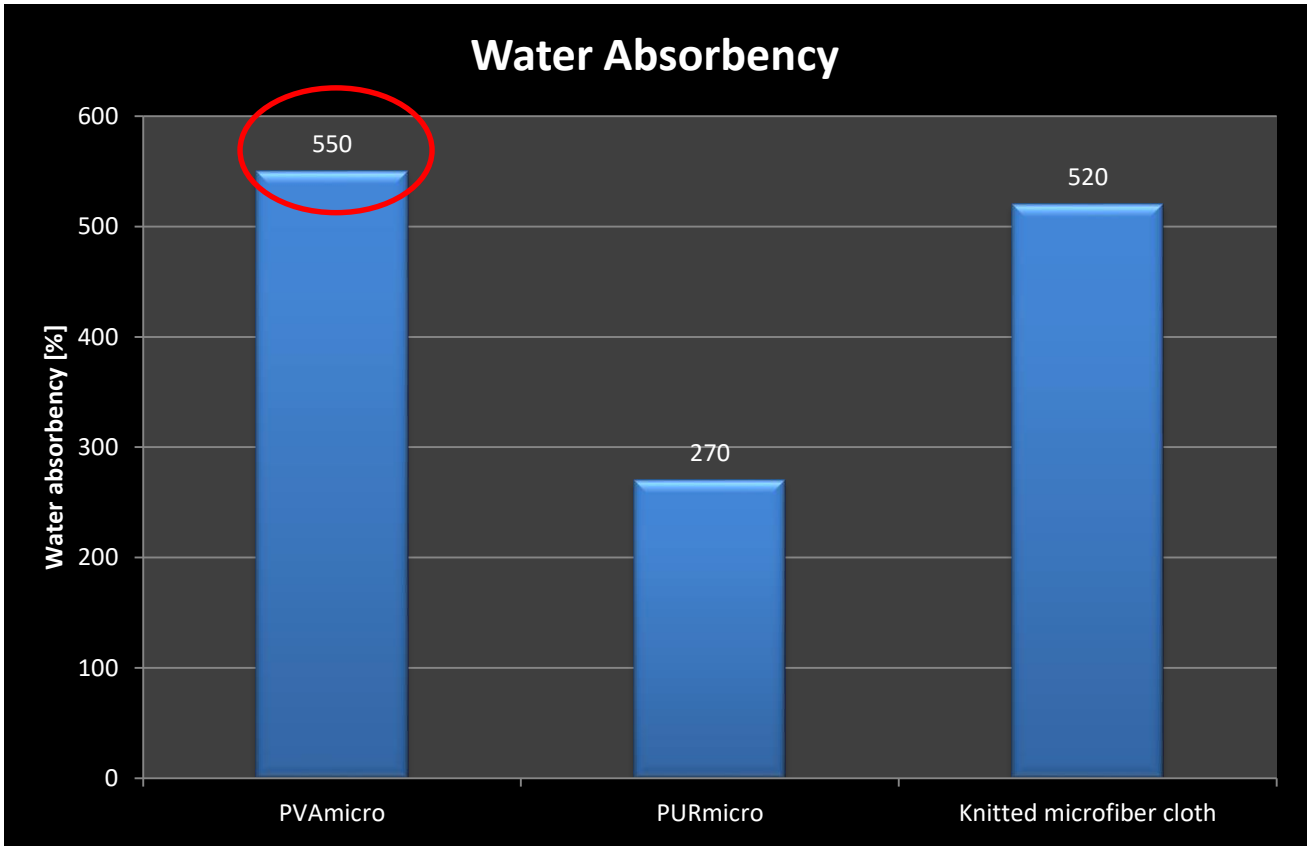
- After 400 laundering cycles at 60°C the cloth is still in acceptable condition.
- After washing several times at 90°C the cloth shows only low shrinkage. PVA fibres can not be washed above 60°C but as the base material is made of PES/PA microfibre 95°C is not a problem.

PVAmicro – Technical tests



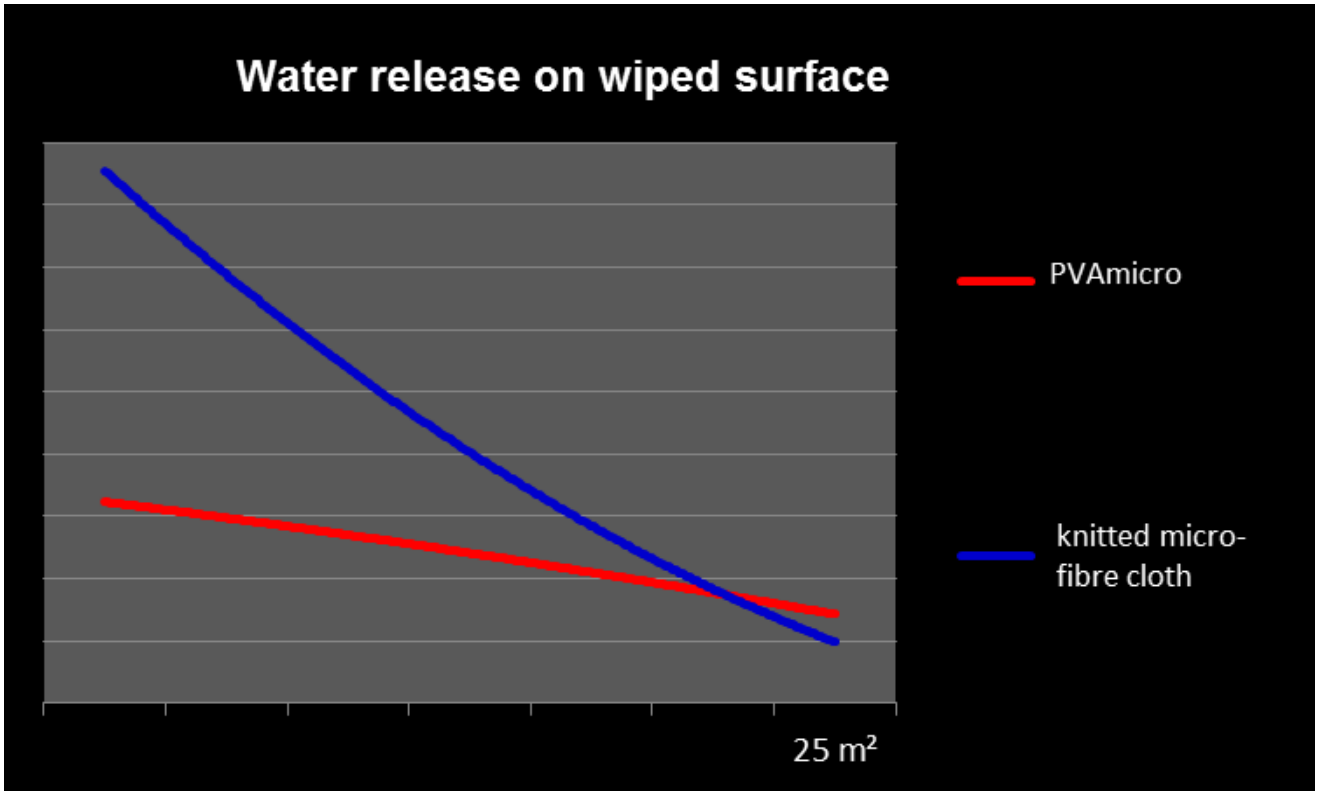
- Very low liquid release
- Streak free cleaning without need of after drying step
- Knitted microfibre cloths are not suitable for e.g. mirror cleaning.

PVAmicro – Technical tests



- Increased water absorbency due to PVA coating
- Significant higher water absorbency than PURmicro cloth
- Slightly higher water absorbency than MicroTuff Swift

PVAmicro – Technical tests



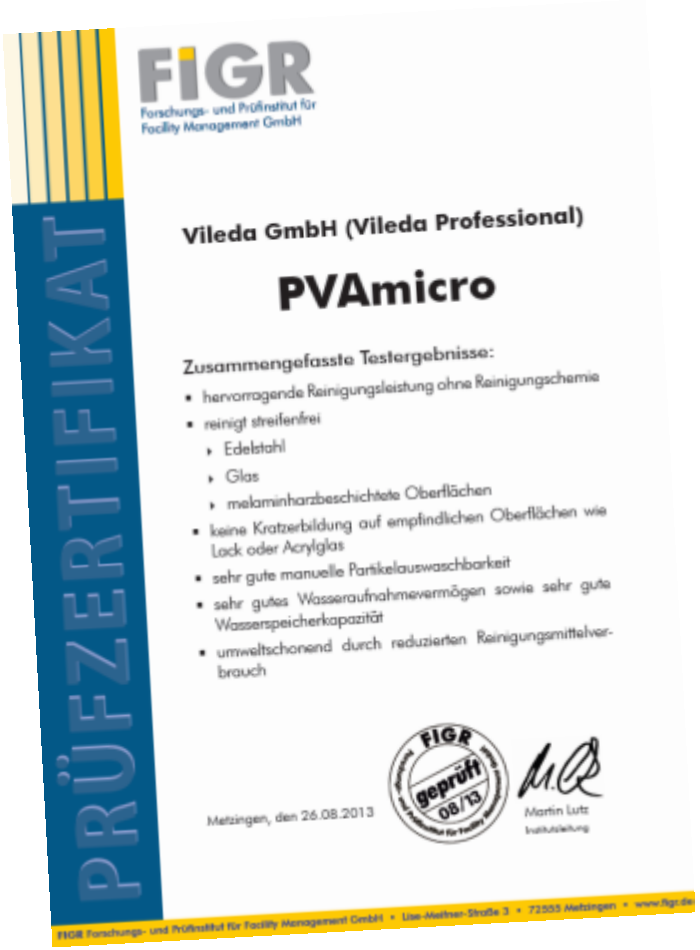
- After wringing a knitted standard MF cloth leaved the surface very wet.
- PVAmicro shows a much more homogenous water release and a better coverage performance.

PVAmicro – Technical tests

Chemical resistance

- **Chemical resistance** overall good.
  Low resistance against chlorine and moderate resistance against very strong acids and high alkalinity.

PVAmicro – Technical tests


PRÜFZERTIFIKAT

FIGR
Forschungs- und Prüfinstitut für Facility Management GmbH

Vileda GmbH (Vileda Professional)

PVAmicro

Zusammengefasste Testergebnisse:

- hervorragende Reinigungsleistung ohne Reinigungschemie
- reinigt streifenfrei
  - Edelstahl
  - Glas
  - melaminharzbeschichtete Oberflächen
- keine Kratzerbildung auf empfindlichen Oberflächen wie Lack oder Acrylglas
- sehr gute manuelle Partikelauswaschbarkeit
- sehr gutes Wasseraufnahmevermögen sowie sehr gute Wasserspeicherkapazität
- umweltschonend durch reduzierten Reinigungsmittelverbrauch

Metzingen, den 26.08.2013

FIGR geprüft 08/13

Martin Lutz
Institutsleitung

FIGR Forschungs- und Prüfinstitut für Facility Management GmbH • Lise-Meitner-Straße 3 • 72555 Metzingen • www.figr.de

Independent Institute for Facility Management FIGR has proven the excellent properties of PVAmicro

FIGR Forschungs- und Prüfinstitut für Facility Management GmbH tested 08/13

Summery of test results

- Very good cleaning performance
- Cleans without streaks
- Easy to rinse, prevents scratches on wipes surface.
- Very absorbent

Positioning

PVAmicro - Positioning

GBC – HoReCa – Bucket Method

Key Benefits: Cleaning Performance & Streak free cleaning

- Microfibre cleaning performance
- Streakfree result on all surfaces
- Superior rinse ability → significant lower risk of scratching on cleaning surfaces (vs. terry type MF)
- High absorbency

PVAmicro - Positioning

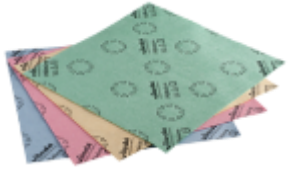
PVAmicro vs. PURmicro

- PVAmicro has significant better water absorbency
- PVAmicro is offered at a more competitive price (IC 0,38€ vs. 0,53€ for PURmicro)
- PVAmicro is based on FHP technology/production

→ The better price with very low compromises on durability allows us a wider positioning of PVAmicro (not only in premium price area but also in medium price segments → to reach more customers)

→ **Keep both cloths in the range, let the customer decide** (review sales performance of PURmicro after e.g. 1 year)

PVAmicro - Positioning

	Absorbency	Cleaning large areas	Streak free cleaning	Easy to rinse out particles	Cleaning performance	Wash resistance
Knitted Microfibre Cloths 	🟡	🟡	🔴	🔴	🟢	🟢
PURmicro 	🔴	🔴	🟢	🟢	🟢	🟢
PVAmicro 	🟢	🟢	🟢	🟢	🟢	🟡

🟢 Best 🟡 Suitable 🔴 Not recommended

Communication Material

internal

Communication

Available Communication Material

- **PDS**
- **TDS**
- **Ad full page**
- **4 page folder**
- **Press release text**

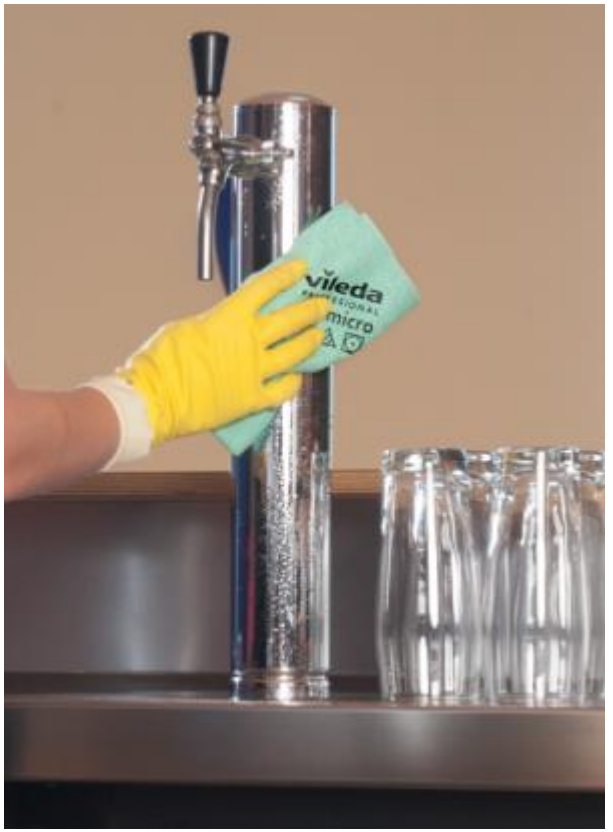
Communication - Images

23 in-use photos are available on Marco

Communication - Images

Communication - Images

Communication - Images



Communication

Ad full page

Communication

4 Page Folder

Description of the product + advantages in brief including two diagrams showing main advantage of PVAmico performance


Thank you
for your attention
vileda
PROFESSIONAL
PVAmicro
95
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