

**Upgraded
Technology**

**Sustainable Nonstop Freshness
Dual Benefit Solution!**

COMPANY PROFILE



— Shaping the Future

From our roots in Taiwan to a global stage, BRINGTON has been shaping the future of footwear, bags, and textiles for over 50 years. Driven by innovation, sustainability, and uncompromising quality, we craft products that inspire and endure. Your journey starts with us!

Manufacturing

We operate our own factories in China, Vietnam and Indonesia, in addition to partnering with various manufacturing hubs across Asia.

Presence

We have offices strategically placed around the world, ensuring global reach and local expertise.



OUR BRANDS

ARAVÉDA[®]
The Purity of Freshness



**Swiss Anti Odor
Technology**

Our groundbreaking anti-odor technology empowers materials with a powerful positive charge, trapping and neutralizing stubborn odor molecules through a revolutionary reaction Freshness, redefined!



REYBOTEX[®]

**[Recycling Process Video](#)
[\(click to see\)](#)**

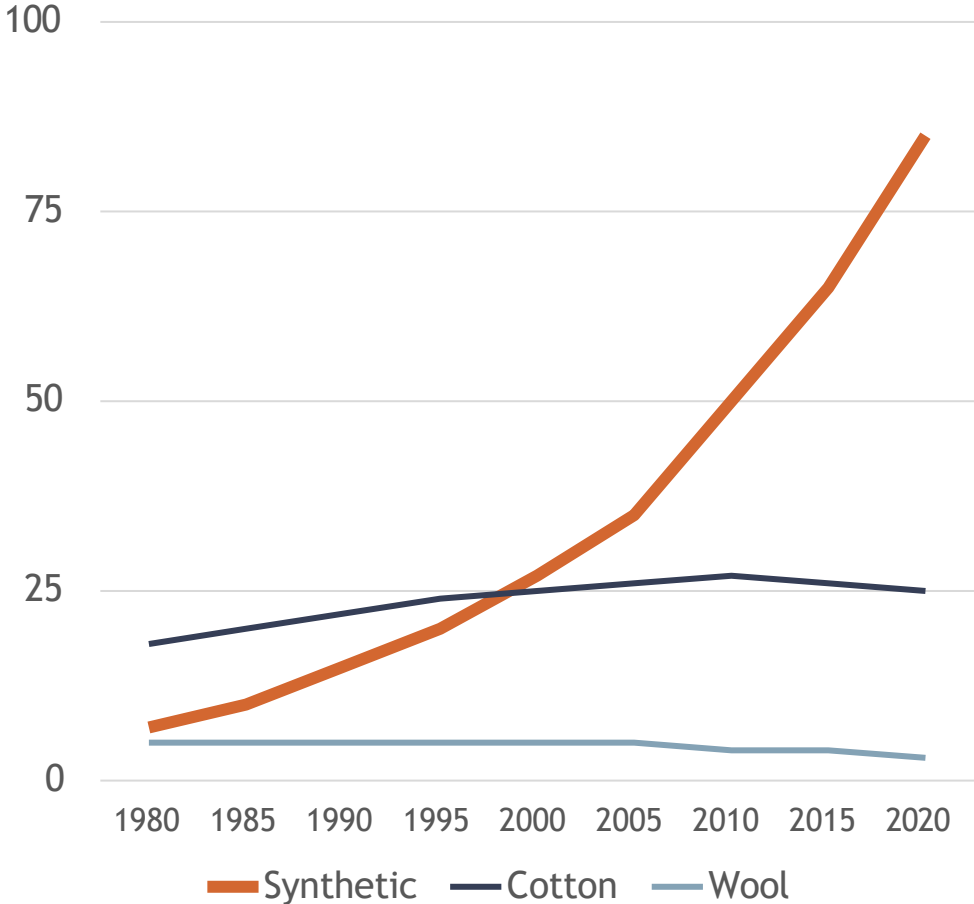


With our high technology plant, we can transfer used plastic bottles into new high quality and sustainable fabrics and textile end products with minimum of environmental impact.

The Problem

Synthetic fibers are taking over the world - not without challenges

Global fiber production (metric tons)



Odor buildup & accumulation
Synthetic textiles are prone to odor accumulation resulting in excessive washing & their early disposal

>75%
of consumers perceive odor in textiles as a problem and are willing to pay for an effective solution

Microplastic shedding
Synthetic textiles are prone to shed harmful microplastics during home laundering which enter waterways & food chains

Up to 30%
of microplastics released into the ocean comes from synthetic textiles



Textile Odor & Excessive Washing

Consumer demand for odor control is strong

Textile odor accumulation leads to excessive washing

>75%

of consumers perceive odor in textiles as a problem and are willing to pay for an effective solution

>80%

of the energy consumption in the life of a piece of clothing occurs during consumer use for washing, drying & ironing

>90%

of people admit that odor reduces their confidence when being in a social setting

>15k L

of water are used by the average European household for washing clothes



Microfiber & Microplastic Shedding

Textiles are the single largest contributor to microplastic & microfiber pollution

Up to **30%**

of microplastics released into the ocean comes from synthetic textiles

0.5m tons

of microplastics estimated to be discharged into the oceans from synthetic clothes annually

>14m tons

of microplastics have accumulated on the ocean floor

Up to **50%**

of microplastics from textiles are released during the first two washes

Drivers of Textile Microfiber Shedding

Different factors across production and the use phase affect microfiber shedding



Fiber type & materials

Synthetic fibers (e.g. polyester) are more prone to shedding vs. natural fibers; type of material impacts not only amount, but also the persistence of the released microfibers

Yarn characteristics

Hairiness, twist and spinning method play a crucial role (e.g. vortex-spun yarns tend to shed less compared to ring-spun yarns); shorter staple fibers tend to shed more than continuous filament yarns

Fabric structure & construction

Looser structures tend to shed more (e.g. knitted fabrics generally release more microfibers than woven fabrics)

Chemical treatments & finishings

Softeners, dyes, and finishes can increase shedding; finishing processes such as brushing or pre-washing can decrease shedding

Manufacturing processes

Cutting, spinning, weaving, and sewing methods during textile production release microfibers both in the factory and in the final product

Household washing protocols

Aggressive household wash programs with high temperatures, harsh detergents increase microfiber shedding

Garment age/condition

New garments often shed more initially due to loose surface fibers; repeated washing and wear can degrade fibers over time leading to increased shedding again as the textiles age



Powerful Dual Benefit

Functional & Environmental



Feel better.



Do better.

Leading odor control performance

Differentiated effectiveness across a broad range of odors with high odor neutralization capacity

Unmatched durability across substrates

Superior environmental & safety benefits

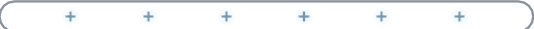
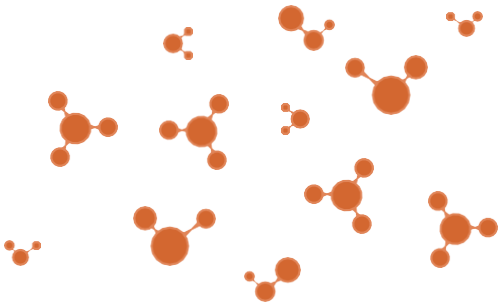
Reduction of microfiber shedding from washing during the use-phase

Biocide- & metal-free formulation

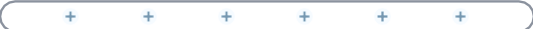
Extended product lifetime

Technology - Odor Control

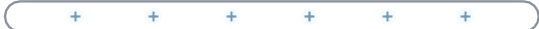
Our technology provides a unique odor trapping and neutralization approach



Electrostatic attraction created by our technology adsorbs odor molecules (e.g. isovaleric acid, acetic acid, ammonia)



These odor molecules are trapped and neutralized by a reaction that converts them into odorless salts



Washing releases the residual salts and exposes the positive charges again



The surface is refreshed and ready for action again

Uniquely performant, wash durable and biocide-free odor control technology with unmatched capacity

Technology - Microfiber Shedding

Our technology provides a unique mechanism to reduce microfiber shedding

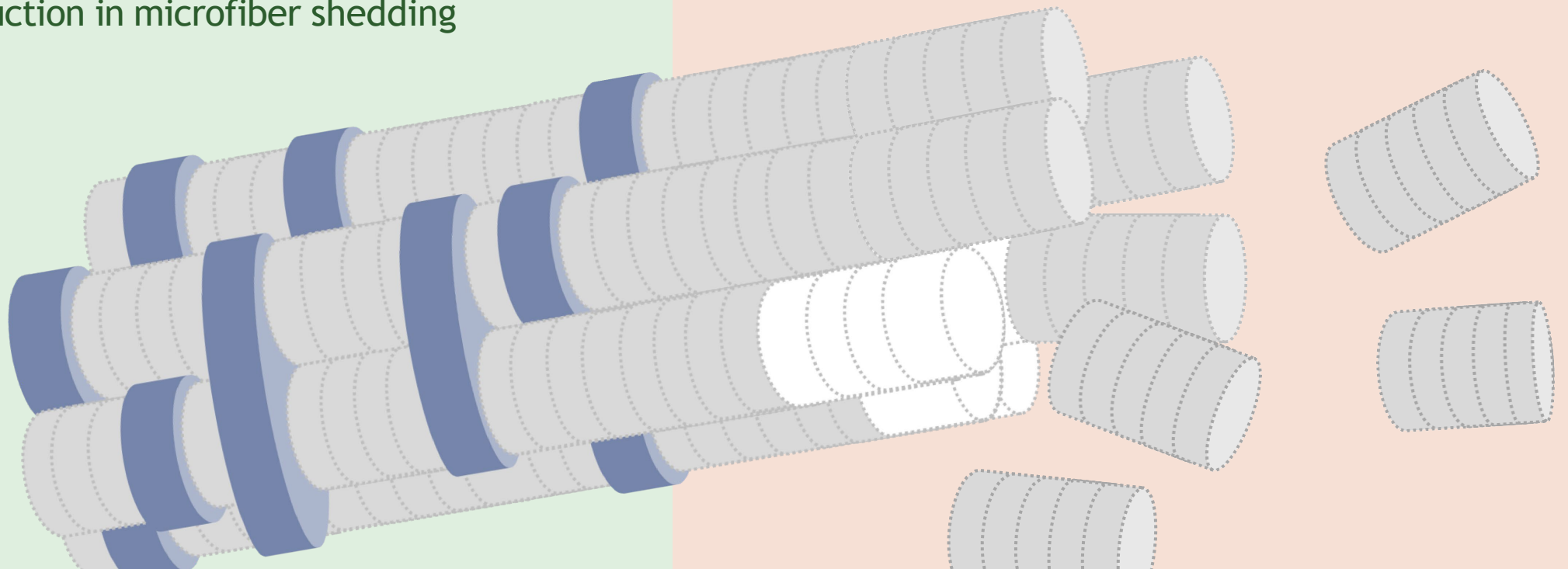
With *Better Fresh*

Polymers of different lengths strongly wrap around the fibers and reduce the shedding of harmful microfiber fragments during washing while increasing the longevity of the textile

Up to 80% reduction in microfiber shedding

Without treatment

Microfiber particles separate from the fabric and are released during washing subsequently entering waterways and food chains



Benefits & Claims

Our technology combines leading odor control with superior safety & sustainability



Better performance

Leading odor reduction across broad range of odor molecules (e.g. isovaleric acid, acetic acid, nonenal) as per ISO 17299-3

High capacity to neutralize odors even without washing without reaching saturation



Better durability

High wash durability tested up to 100x home laundries (as per AATCC 135) without decrease in odor reduction performance



Better chemistry

Easy global market access outside of scope of biocidal product regulations

Increased safety for consumers as well as the environment due to metal-free & biocide-free formulation



Better sustainability

Reduced shedding up to 80% lower discharge of microfibers during household washing

Enhancing product life to less frequent & lower temperature washing and fiber protection*



Better adoption

Cost effective application across substrates together with other finishings for minimal added costs (padding or exhaust*)

Simple traceability for low-cost & effective verification along the entire supply chain

 Patent pending formulation, manufactured in Switzerland

* application on finished clothes under investigation



Differentiation

Our technology is superior compared to alternatives

Benefit	Key claim	Comparison to other technologies	
Performance	Odor reduction as per ISO 17299-3	Up to 99% odor reduction rate (e.g. for isovaleric acid, nonenal, acetic acid)	<ul style="list-style-type: none">• Antimicrobial technologies can not be tested for ISO 17299-3 Most other technologies provide lower odor reduction rates which may impact the consumer experience (despite a “pass” on the test)
	Versatility regarding different odorants / gases	Tested successfully for isovaleric acid, acetic acid, nonenal, ammonia, indole	<ul style="list-style-type: none">• Most other solutions only have a successful track record (test results) or even performance for select odorants (e.g. isovaleric acid) - but do not provide a holistic odor reduction profile
	Capacity / saturation of the odor reduction	Conducted multiple saturation studies that indicate very high capacity	<ul style="list-style-type: none">• Especially odor capture technologies saturate quickly between washes and need regular refreshing making them less suitable for applications with little washing (e.g. shoes)
Durability of odor control performance	Up to 100x washes without impact on the performance	<ul style="list-style-type: none">• Other technologies leach out or decrease in efficiency (e.g. due to abrasion) over the course of the lifetime of the treated product	
Safety through biocide- & metal-free technology	No BPR / EPA registration, lower complexity	<ul style="list-style-type: none">• Antimicrobial technologies increase complexity for brands biocidal product regulations and consumer information must be provided	
Sustainability	Up to 80% reduced microfiber shedding	<ul style="list-style-type: none">• Other odor control & finishing technologies do not provide any material impact on microfiber shedding	
Application across substrates	Simple application & performance across substrates	<ul style="list-style-type: none">• Other technologies may require binders depending on substrate• Other technologies show lower efficacy on synthetic fibers• Other technologies may not be applied on finished clothes	

Applications

Sustainable non-stop freshness across many applications



Everyday apparel



Personal hygiene



Home furnishings



Household textiles



Pet products



Uniforms, including military



Underwear



Sportswear

Odor Control Performance Test Methods

We are validating the performance of our technology through various test methods

Test method	Laboratory	Description & assessment
Sniff test (mod. protocol based on BO 131- 01)	In-house	<ul style="list-style-type: none"><i>Setup:</i> Panel of 6 trained assessors rate odor in a blind setup on a scale of 0 (no odor) to 5 (very strong, offensive odor)<i>Test substrates:</i> Treated vs. untreated samples (inoculated with the odorant)<i>Odorant:</i> Typically isovaleric acid<i>Assessment:</i> Even though somewhat prone to subjectiveness, this method provides a close “real-life” indication of the odor control performance and discernible difference for the human nose
Gas detection using detector tubes test (mod. protocol based on ISO 17299-2/3):	In-house	<ul style="list-style-type: none"><i>Setup:</i> Detector tubes change color based s not captured by fabric, provides a ppm reading of free odorant gas<i>Test substrates:</i> Treated vs. untreated samples (inoculated with the odorant)<i>Odorant:</i> Typically isovaleric acid<i>Assessment:</i> Our standard quantitative test method, can be correlated roughly to an ORR observed in the ISO test
Gas chromatography (ISO 17299-3)	External	<ul style="list-style-type: none"><i>Setup:</i> Gas chromatography (part 3) or gas detector tubes (part 2) measure free gas not captured by fabric, provides an odor reduction rate (%)<i>Test substrates:</i> Treated samples vs. blank (inoculated with the odorant)<i>Odorants:</i> Part 3: Isovaleric acid, acetic acid, nonenal; Part 2: Acetic acid, ammonia, indole<i>Assessment:</i> Generally accepted industry standard (requested by customers), flawed methodology due to comparison vs. blank and unrealistic odor quantity e.g. for ammonia
Gas detection using detector tubes test (ISO 17299-2)	External	<ul style="list-style-type: none"><i>Setup:</i> Gas chromatography (part 3) or gas detector tubes (part 2) measure free gas not captured by fabric, provides an odor reduction rate (%)<i>Test substrates:</i> Treated samples vs. blank (inoculated with the odorant)<i>Odorants:</i> Part 3: Isovaleric acid, acetic acid, nonenal; Part 2: Acetic acid, ammonia, indole<i>Assessment:</i> Generally accepted industry standard (requested by customers), flawed methodology due to comparison vs. blank and unrealistic odor quantity e.g. for ammonia

Other external test methods: Chinese s/T 33610.2 and AATCC TM216-2024

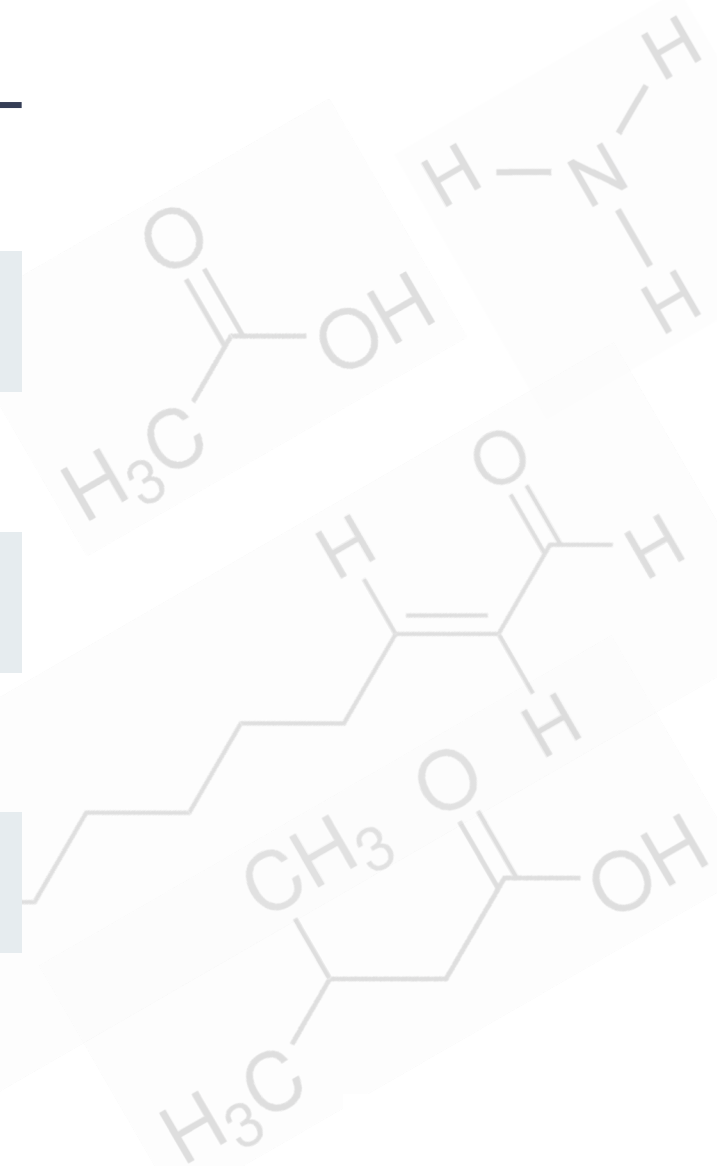
Odor Control External Validation (ISO 17299)

Our solution has been tested externally with great results

	Pass criteria	100% polyester		100% cotton	
		Unwashed	30x washed	Unwashed	30x washed
Isovaleric Acid	85%	>98%	>98%	>97%	>98%
Acetic Acid	70%	>91%	n/a	>87%	>90%
Nonenal	75%	>97%	>93%	>95%	>97%
Ammonia	70%	n/a	n/a	>91%	n/a
Indole	70%	>99%	>99%	n/a	n/a

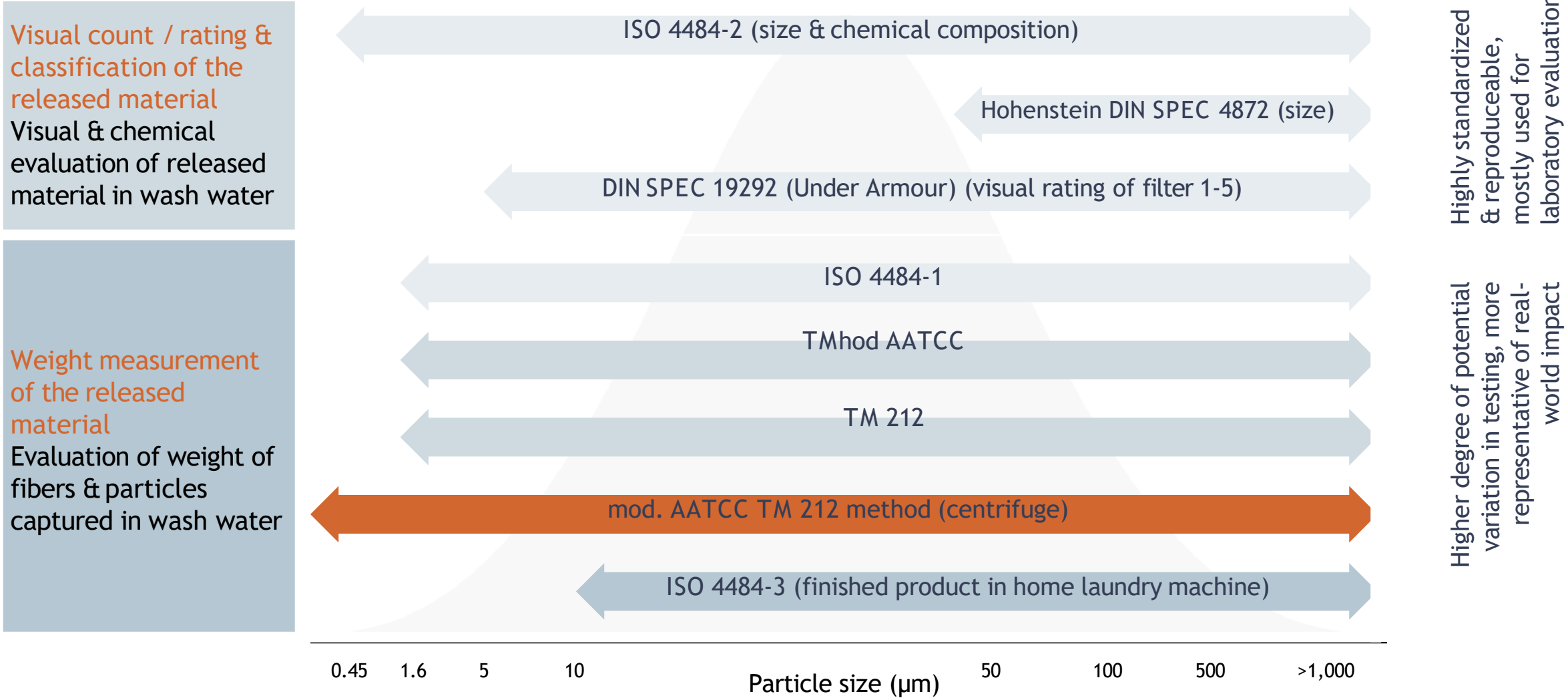
Exemplary test reports are available upon request

Results as per ISO 17299-3 for Isovaleric Acid, Acetic Acid, Nonenal; Results as per ISO 17299-2 for Ammonia and Indole



Microfiber Shedding Test Standards

Various microfiber shedding test standards established with some differences



* Use of detergent mandatory (as per washing instructions) Note: Further differences between methods in sample preparation (e.g. edges, pre-washing, etc.)

Microfiber Shedding Internal Validation (Mass / Weight)

In-house testing consistently showed great results across representative substrate set

AATCC 212 standard

Mass lost as a percentage of weight of fabric

After 5x washes (40°C, 45mins, no detergent, heat sealed edges), filter pore size 1.67µm

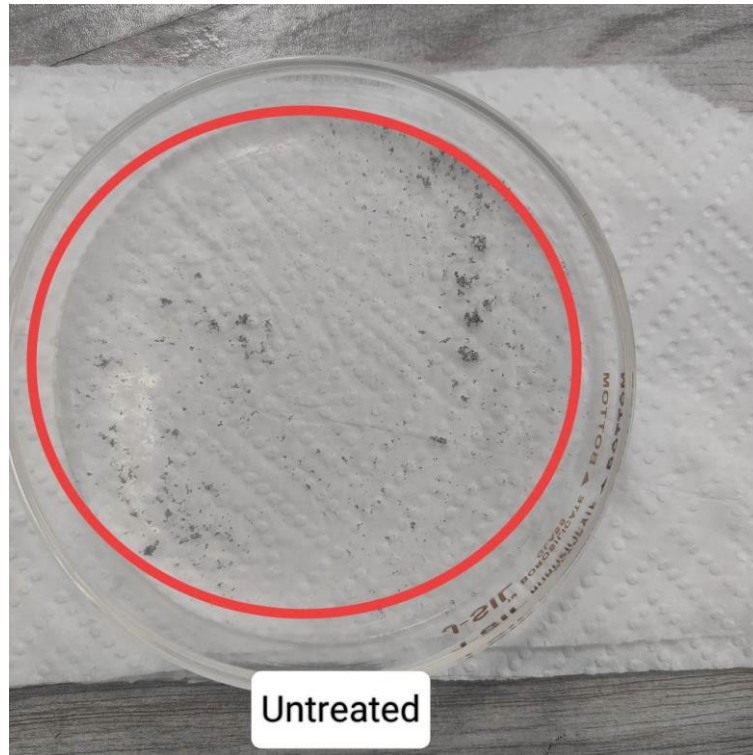
	Polyester woven, black	Polyester knit, navy	Polycotton knit, orange	Polycotton woven, white	Recycl. cotton knit, grey
Base-fabric fiber release grade (A-C)	A (low release)	A (low release)	A (low release)	n/a	n/a
Untreated	0.36%	0.17%	0.41%	0.17%	0.42%
Processed only (water + heat)	0.28%	0.13%	0.32%	0.14%	0.40%
Treated with sh	0.07%	0.03%	0.05%	0.07%	0.13%
Reduction in fiber loss (vs. processed only)	75%	77%	84%	50%	68%

Microfiber Shedding Internal Validation - Visual Assessment

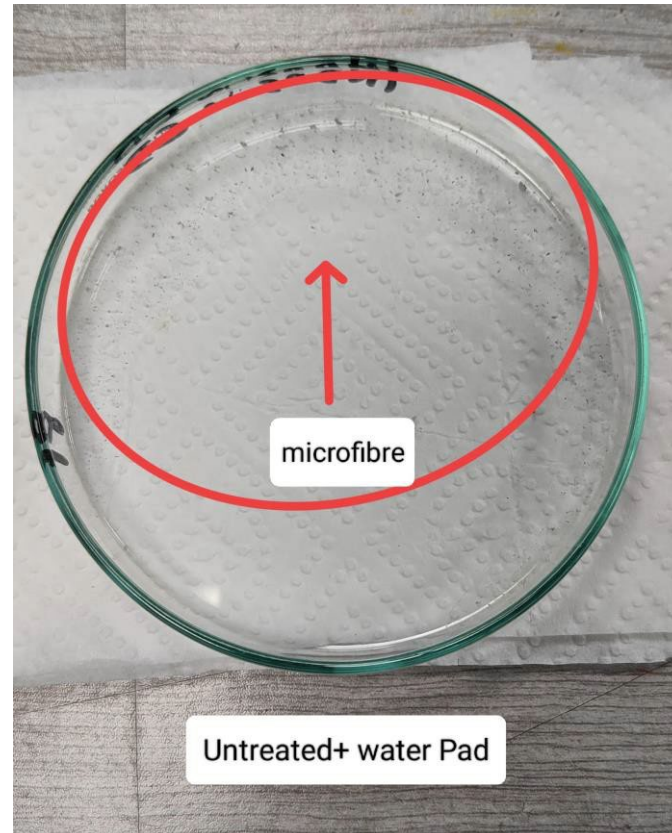
The reduction in microfiber shedding can be seen

Sample: Navy polyester, 250 GSM, knitted

Untreated



Processed (heat / water)



Treated Better Fresh



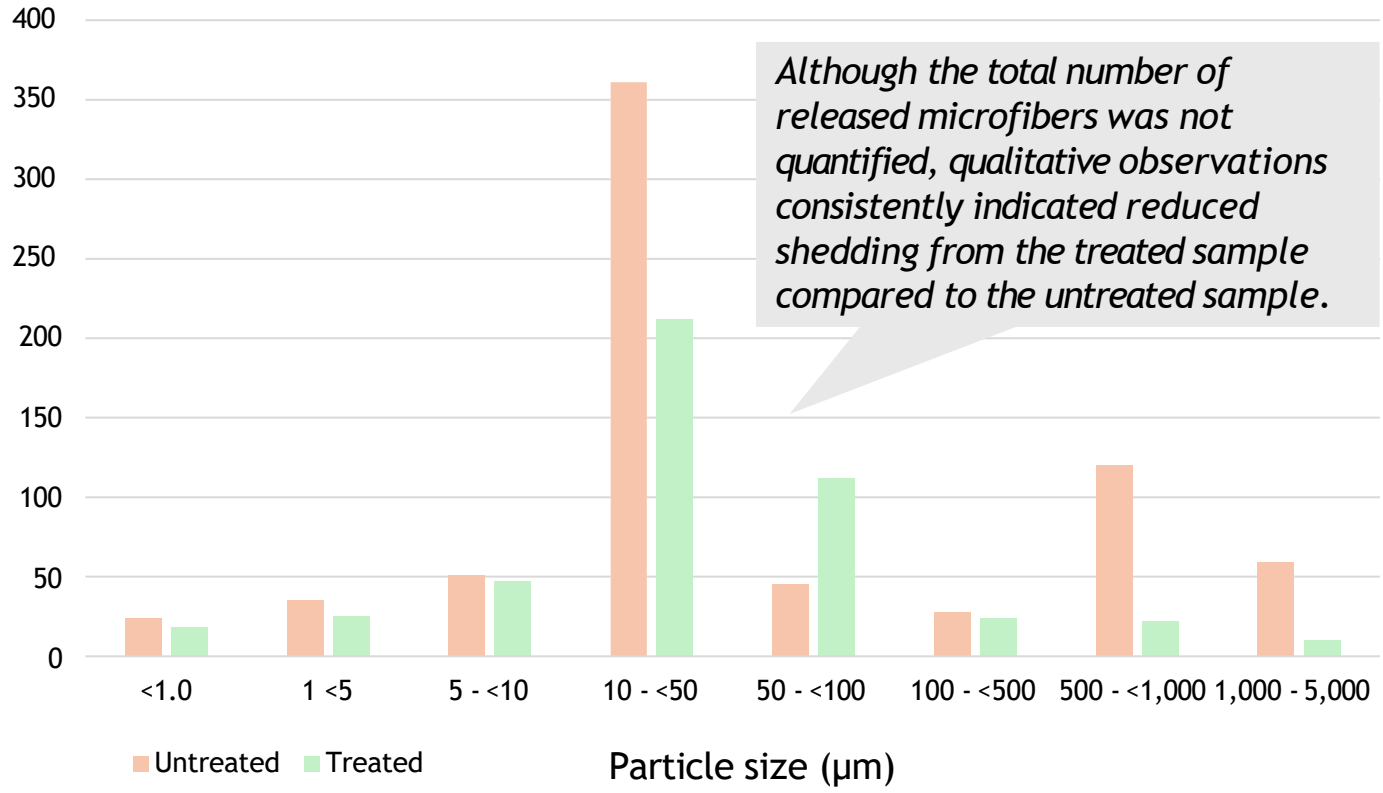
Microfiber Shedding External Validation (Count & Weight)

Intertek testing indicates highest reduction in below 50µm particle size



ISO 4484-2 standard

*Number of particles/fibers released, 200 mL sample filtered
100% polyester woven, after 5x washes (40°C, 45mins, no detergent)*



Although the total number of released microfibers was not quantified, qualitative observations consistently indicated reduced shedding from the treated sample compared to the untreated sample.

Fabric weight measurements

Weight of fabric

	Untreated	Treated with sh
Weight before washing (g)	39.7597	40.4002
Weight after washing (g)	39.6557	40.3694
% particle release	0.260%	0.076%

Reduction in fiber loss

71%

Microfiber Shedding External Validation (Count - DIN SPEC 4872)

Testing with Hohenstein across representative substrate set confirms impact



*Number of particles/fibers released measured/gram of textile
After 5x washes (40°C, 45mins, no detergent, sewn edges)*

	10-50µm particle size			>50µm particle size		
	Polyester woven, black	Polyester knit, navy	Polycotton knit, orange	Polyester woven, black	Polyester knit, navy	Polycotton knit, orange
Base-fabric fiber release grade (A-C)	A (low release)	A (low release)	A (low release)	A (low release)	A (low release)	A (low release)
Untreated	260	277	432	160	961	1,405
Processed only (water + heat)	296	177	605	204	1012	1,574
Treated with Better Fresh	214	72	126	197	929	1,092
Reduction in fiber loss (vs. processed only)	28%	60%	79%	3%	8%	31%

Website: www.brington-group.hk

Email: info@brington-group.hk



Follow us on LinkedIn

Thank you! Reach out and let's connect!

