



INTRODUCING...

Wipe-clean
micrAgard PLUS

ANTI-BACTERIAL | FIRE-RETARDANT
WIPE-CLEAN | FDA APPROVED

~~PVC~~



INFECTION CONTROL AT IT'S BEST

Infection Control has always been a challenge. Together we can minimise the cross-contamination of bacteria and help prevent it from spreading. This can be achieved by using **micrAgard PLUS**.

This booklet will show you how much of a difference you can make by using micrAgard PLUS and how **PVC materials** can cause a large part of infection problems.

FACT; PVC materials are not suitable for use and are causing harm not only to our health but also to the environment.

About micrAgard PLUS...



The all new micrAgard Plus is an extremely durable dual-faced TPU coated, compounded extruded cellular profiled fabric which is;

ANTI-BACTERIAL | FIRE-RETARDANT
WIPE-CLEAN | FDA APPROVED

Improved chemical, oil and abrasion resistance as well as upgraded protection from external temperature changes.



Complies to :- RoHs (Restriction of Hazardous Substances)
REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)

micrAgard PLUS is fully recyclable and free from the harmful components which are used in PVC.





micrAgard PLUS Properties



• Anti-microbial

Prevents the cross-contamination of bacteria.



• Fire Retardant

Engineered to withstand flames leaving the surface slightly burnt with discolouration.



• Custom Branding

In-house graphics produced to the highest quality standards using Weld-able Reflective Badges, Reflective Printing & Embroidery; it looks great and stays with the product for life.



• ISO Quality Standard

For maximum quality assurance all our products are made to UKAS standard.



• Impact Resistance

The high tenacity material provides best in industry impact protection & build quality.



• Lockable Zips

Facility to lock the zips through our trademark easy-pull zip pullers.



• Aviation Standard

Tested to meet aircraft aviation standards.



• Fluid Repellent

micrAgard PLUS repels against fluids; keeping the internal equipment safe and dry.



• Comfort Straps

Carry it off in style and comfort! Securely fastened grab handles and strapping system engineered for maximum comfort when carried.



• Hand-finished

The external solid reflective piping and internal non-rot binding finishes and protects the edges to perfection.



• Underside Protection

Option for rubber base feet to protect the base of the bag from being damaged when in use.



• Heavy Duty Fittings

High quality durable fitting for use in the most demanding environment.



• Thermo Care

Washable with mild soap and water.



• Waterproof Zips

Brand new waterproof zips which repel water to keep the bag contents safe and dry.



• Hi Visibility

Maximum visibility achieved with high quality reflective coverage which will last the lifetime of the bag.



• Non-rot Material

Non-rot, UV stable material meaning your bag can be recycled.



• Intrinsically Safe

protection technique for safe operation of electronic equipment.



• Quality Guarantee

We have every faith in the high quality of our products to allow a limited lifetime guarantee.

Legislation Against the Use of PVC

The Care Quality Commission

It is a requirement, as of 1st April 2009, for all government and private funded hospitals, medical centres, ambulance services and dental surgeries to register and comply with the Care Quality Commission standards, this involves:

- Implementing procedures and registering to confirm compliance.
- The environmental act of 1999 DH/PHLS starts the ball rolling with guidance which become enshrined in law under the section 20 (5) of the health and social care act 2008.

An understanding of these requirements and controls:

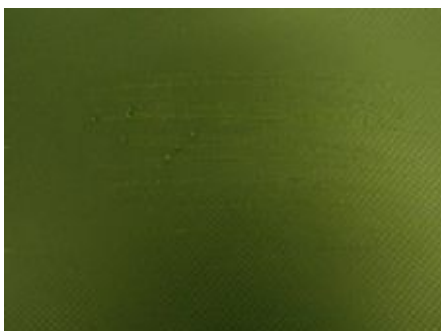
- The preventative measures of infection control before a subject reaches hospital or other health environment.
- This has never been a priority and it is often people coming into the system who are the carriers of C.diff, MRSA and other harmful bugs and germs.

This recognition forces all institutions to look at the control that can be offered from its entire supplier base to prevent infections happening at the point of entry and to minimize the overall problem. **micrAgard PLUS** fabric was developed with this in mind.

As Openhouse supplies the Airline Industry the same regulations apply but to a much higher level. As a result all our **micrAgard PLUS** products, as well as being anti-microbial to prevent cross-contamination of bacteria; they also meet the CAA and EASA standards for being flame-retardant if required.

**Infection control is now a requirement.
Do something about it.. Use the right materials..
Use micrAgard**

micrAgard PLUS



PVC





The Environment

Think about the environment as well as your health...

Once PVC materials have been scratched or tampered with, sterilisation is no longer possible as the bacteria enters the substrate indefinitely. micrAgard PLUS kills all germs and prevents cross-contamination even if the products used are never washed or sterilized. With micrAgard there is no risk of harm to health or the environment.

The below document covers the entire scope of PVC in use:

- Guido Sacconi (pesi) wrote reports for the EU which have been adopted as part of the Environmental Directive 96/59/EC enviro pvc, and 01/10/2001 statutory procedures relating to dioxins, furans, and pcbs (comm. 2001 593)
- Green paper on the Environmental us of PVC
- COM (2000) 469

Taken from the report into PVC waste disposal in land fill sites report DG XI.E.3 European Union reference. This is being looked at to be ratified soon.

The behaviour of plasticised and rigid PVC in landfill was investigated through literature survey and in landfill simulation studies. Plasticised and rigid PVC was incubated in lysimeters under aerobic thermophilic (up to 80°C), anaerobic thermophilic (60°C) and alternating aerobic-anaerobic conditions. The samples were also incubated in a biological waste treatment plant under aerobic condition. Specific processes, microbiological attack on PVC materials and the leaching behaviour were examined. The main results are summarised as follow:

- Phthalates are released from PVC material under landfill and under soil buried condition.
- DEHP was detected in the condensate of gaseous emission from lysimeters with and without incubated PVC.
- Fingerprint analysis from gaseous emissions from lysimeters indicate differences between those with incubated PVC and blank control.
- Microbial growth was discernible on plasticised PVC.
- Mechanical properties of plasticised and rigid PVC samples, investigated through tensibility tests, have changed during incubation conditions.
- Molecular weight distribution of the PVC polymer of a thin flexible packaging foil has changed under thermophilic aerobic condition.

Taken from the minutes of which there are 77 pages. This applies to soft as well as hard PVC - October 9th 2013 The 11th Plenary meeting held in Belgium. EU. CSTEE ruling "The view was also expressed that saying that PVC per SE is safe is probably not right as PVC contains Cadmium and as such the CSTEE should probably refrain from sending the message that PVC is safe. This was countered on the grounds that Cadmium would have to be considered as an additive and therefore the statement on the safety of PVC, as given above, would cover Cadmium as well."

There is no risk of harm to the environment using micrAgard PLUS

Sustainable Development

Taken from the NHS England website. Guidance for all public procurement 2014:

1. Manage the transition of sustainability in the health, public health and social care system, including the changed remit of the unit, and the regional/centre set up required to deliver the agenda.
2. Engage with the sector on the scope, approach and content of a Sustainable Development Strategy and the best ways of delivering sustainability across the health, public health and social care system (to build on and supersede the Carbon Reduction Strategy 2008).
3. Develop monitoring and foot printing mechanisms across the sector to support the monitoring of progress including the implementation of the NHS Carbon Reduction Strategy and its 10% reduction target by 2015.
4. Scope and map the sustainable development requirements for the Public Health system in England with input from Public Health England, Local government, Health and Wellbeing Boards, and social care organisations to ensure that Public Health England develops its communities based approach to sustainability.
5. Act as an expert point of reference for sustainable development across the health system and act as the formal reporting body for statutory processes such as Adaptation to Climate Change across the health sector.

The thing to remember here is that there is a new procurement policy being forced through for all GOVERNMENT departments relating to carbon foot print reduction. UK manufacture. SME's and disposable actions.



micrAgard PLUS is fully recyclable and free from the harmful components which are used in PVC.



What does sustainability mean for textiles?

Textiles can be divided into those derived from natural sources such as cotton and wool and synthetics, such as polyester. These have different impacts and the sustainability considerations cover four areas:

- Exclusions and controls on the use of potentially harmful and toxic chemicals.
- Reducing the environmental impacts of the product during use.
- Encouraging greater use of recycled fibres and end of life management.
- Ethical standards in production.

All central government departments and their related organisations must ensure that they meet at least the mandatory Government Buying Standards when buying goods and services in the product groups covered on this site.

Why sustainable development?

The past 20 years have seen a growing realisation that the current model of development is unsustainable. Our way of life is placing an increasing environmental burden on the planet through:

- The consequences of **unavoidable climate change**.
- Increasing **stress on resources and environmental systems** from the way we produce, consume and waste resources.
- Increasing **loss of biodiversity**, from the rainforest to fish stocks.

We are also living in a world where over a billion people live on less than a dollar a day, more than 800 million are malnourished, and over two and a half billion lack access to adequate sanitation. A world disfigured by poverty and inequality is unsustainable. Unless we reconcile these contradictions, we face a less certain and less secure future. It is in our long-term best interests to make a decisive move towards more sustainable development.

The new Sustainable Development Strategy for the NHS, Public Health and Social Care System will be launched on 29 January 2014.



micrAgard PLUS



PVC

VS

Numerous tests have taken place on both **micrAgard PLUS** and PVC to analyse their reactions. They clearly show the better material.

All the tests were carried out under controlled conditions.

TEST 1 – Tear Strength

Two different sizes of each material were tested to see how much weight they could withstand before ripping.

micrAgard PLUS:

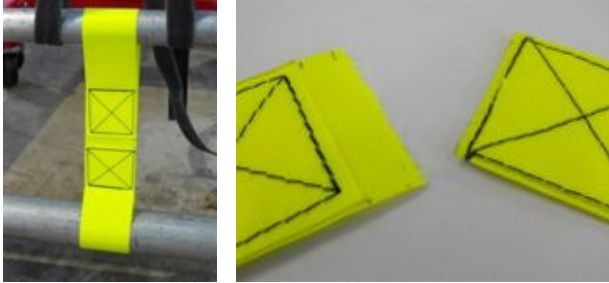


When testing the 50mm width piece of material it ripped at 190kgs; the material pulled and frayed.

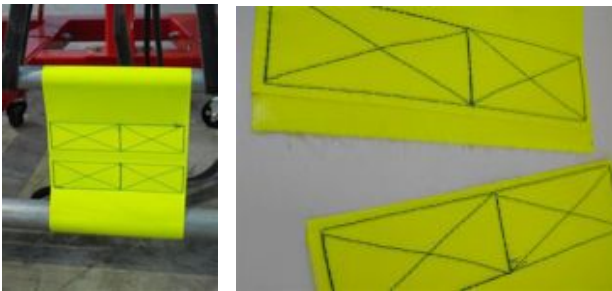


When testing the 200mm piece of material it reached a strength of 500kgs; the material stretched slightly and became thin in places but did not rip.

PVC:



When testing the 50mm piece of material it ripped at 158kgs and was slightly frayed.



When testing the 200mm piece of material it ripped at 440kgs; the large width reacted in the same way as the small and frayed slightly.

Overall, **micrAgard PLUS** materials were stronger than PVC materials. **micrAgard PLUS** can be put under a lot more pressure and can withstand more vigorous use.

TEST 2 – Weight Comparison

A one metre square sample of both **micrAgard PLUS** and PVC were weighed and compared.

micrAgard PLUS weighed 360g

PVC weighed 540g

So you can see from this that PVC is nearly twice as heavy as **micrAgard PLUS**. The restriction on a paramedic's backpack is 15kg, so if PVC is used it increases the overall weight of the backpack and restricts the amount of equipment which can be carried as well as potentially causing back problems for users.

TEST 3 – Reaction to contact with sharp implements and rough surfaces

Both materials were tested with the same controlled conditions to see the effect.

micrAgard PLUS:



micrAgard PLUS was scraped vigorously with a sharp implement. The surface of the material was barely marked and remained intact keeping its anti-microbial and flame retardant properties.

PVC:



PVC was put under the same test as micrAgard PLUS. The surface of the material was scraped off and it lost all of its properties as the surface had been tampered with. Once the surface is damaged bacteria can infest the material and remain there for its life-time. This is a massive problem for infection control.

TEST 4 – Water Resistance

Both materials were tested for water resistance and were monitored to see if the material soaked in the moisture.

micrAgard PLUS:



PVC:



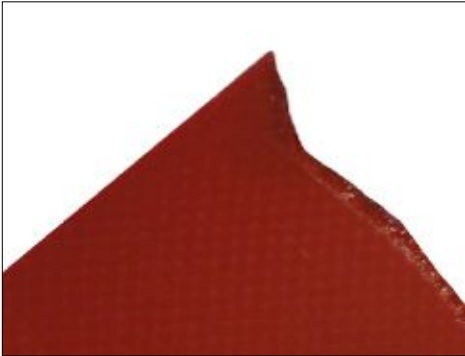
Both materials had no reaction to the water; the water remained on the surface of both and could be wiped off. Therefore both materials are water resistant

The same test was also done on the material swatches which had been put through the abrasion test; **all the moisture soaked into the PVC fabric** whereas the micrAgard left the water on the surface.

TEST 5 – Fire Retardancy

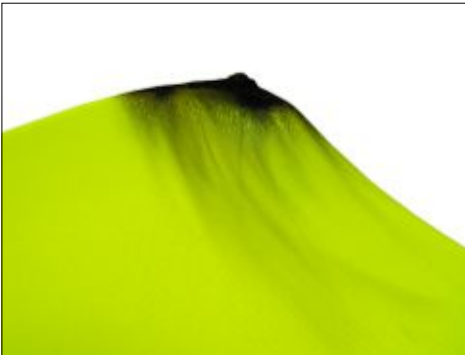
Both materials were placed directly into a controlled flame and tested with the same conditions to see the effect.

MicrAgard PLUS:



micrAgard PLUS withstood the flame and the surface was slightly burnt and discoloured; the material was left with a shiny surface.

PVC:





















PVC materials were put under the same conditions and it could not withstand the flame. The material surface burnt away quickly and released some very unpleasant fumes; atmospheric chlorine.

Conclusion

PVC isn't as strong as **micrAgard PLUS**. If its surface is damaged in any way, bacteria can enter the substrates in the material and cannot be removed, they will remain in the material for its life-time. This has aided in the increase of MRSA and c.Diff. **micrAgard PLUS** has more superior properties than PVC and is seen to be a stronger and more environmentally friendly material. **micrAgard PLUS** withstood the vigorous tests and the material remained intact; keeping all of its properties. The only slight effect these tests had on the material was on its appearance.

micrAgard VS PVC

	micrAgard	PVC
Tear Strength	 Reached 500kgs without Ripping	 Ripped at 440kgs
Weight (per meter sq.)	 360g	 540g
Abrasion Test	 	 
Water Resistance	 	 
Water Resistance when Damaged	 Water stayed on the surface	 Water soaked into fabric
Fire Retardancy	 	 

Safe up to 100kg SWL more than the maximum 25kg HSE Lifting Capacity



Total strain in weight on the material bag handles at point of failure. However the only thing to break was the “beasty lip”. Interesting to note that the buckle did not come apart but actually broke on the top plastic base across it.



2 of these weights were used during testing.

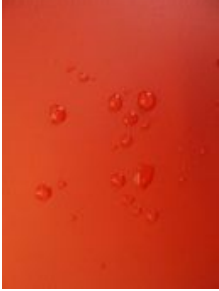


micrAgard PLUS has been put through it's paces in numerous quality control tests to check it's suitability for use in an intense environment. There is no room for mistakes when you are working in an emergency situation.

micrAgard PLUS has superior strength and durability properties to that of PVC fabrics. **micrAgard PLUS** is not only the better choice when it comes to reduced cross-contamination; it is the safer and more reliable choice.

Custom Bag Properties

External Materials



MicrAgard PLUS is a high tenacity system with exceptional mechanical properties. The all new **micrAgard PLUS** is an extremely durable dual-faced TPU coated nylon fabric which is Anti-Bacterial, Fire-Retardant, Wipe-Clean & FDA Approved with improved chemical, oil and abrasion resistance as well as upgraded protection from external temperature changes.

Internal Materials



MicrAgard PLUS silver-lining is a high tenacity system with exceptional mechanical properties being entirely antimicrobial. It is washable, intrinsically safe, fluid repellent and rot-proof, also having a thermal quality providing excellent abrasion and tear resistance despite being light in weight.

Handles & Straps

Carry it off in style and comfort.
The Openhouse comfort grab handles are securely fastened through to the silverlining; "history tells us they don't come off"

The silver reflective non-rot, wareproof webbing provides the core strength whilst the internal padded handlebar system prevents the handle crushing the hand thus providing comfortable safe carrying.

The Openhouse shoulder and backpack straps have been carefully engineered to afford maximum comfort when carrying. On a backpack comfort can be enhanced by fitting the optional adjustable lumber support and waist harness.





Perimeter Protection



External solid reflective piping and internal non rot binding finishes and protects the edges to perfection. **micrAgard PLUS** specification has been purposefully designed to remove the necessity for ugly detachable base panels. The high tenacity exterior finish together with the deep layer of integral high density foam and extra base protection plates is a match for any type of handling.

Zips

MicrAgard PLUS zips and easy-pull zip runners are waterproof and easy to open without those fiddly storm flaps which also means they are easier to clean and quicker to open. The zip runners are also lock-able enabling any high-value or dangerous contents to be protected.



Graphics



Weld-able Reflective Badges - The Wipe-Clean Solution

Our brand new weld-able badges are the ultimate solution in wipe-clean products. The badges are impregnated into the fabric so there are no "sewn on" reflective strips that can rip off.



Reflective Printing

Printed with high quality reflective coverage which will last the lifetime of the bag. Offers maximum visibility even when the bag is open and in use.



Embroidery

Our embroidery is produced in-house to the highest quality using the maximum amount of stitches possible for each design, ensuring it looks great and stays with the product for the whole of it's life.

micrAgard PLUS Test Results

TEST	METHOD	EXPECTED PROPERTIES
Coating	N/A	Face: TPU Back: Lick TPU
Base Fabric	N/A	Compounded extruded cellular profiled thread
Total Weight	FS191a Method 5041	360 g/m ²
Breaking Strength	ISO 1421	Warp: 1100 N/50mm Weft: 1100 N/50mm
Tear Strength	ISO 4674 Method A1	Warp: 75N Weft: 75N
Elongation	ISO 1421	Warp: 60% Max Weft: 60% Max
Peel Adhesive	ISO2411 (1 in RF Tool)	Warp: 750N/50mm Weft: 750N/50mm
Seam Strength (1/8" RF Breakaway)	FS191a Method 5970	Warp: 760N/50mm Weft: 550N/50mm
Seam Strength After Ageing Wet (1/8" RF Breakaway)	WI-063 65oC@2hrs	Warp: 350N/50mm Weft: 350N/50mm
Flex Cracking 9000 Cycles	ISO 7854 Method A	No Damage
Fire Resistance	CAL 117	Pass



micrAgard PLUS Anti-Fungal Test

RECHANT COPY

TEST REPORT

DATE RECEIVED : 2013/10/16

REPORT NO. : 102) 10207049C

DATE ISSUED : 2013/10/16

TESTED DATE : 2013/07/17 ~ 2013/08/16

QUANTITY :

NAME OF ART. : AS THE NOTATION SECTION AS THE SAMPLE PROVIDED

QUANTITY(Case) : 1

PAGE : 1 / 2

107278517200-A01

ITEM	RESULT	CONDITION & METHOD
SAMPLE DESCRIPTION :	FABRIC : FLEECE	
RESISTANCE OF MATERIAL TO FUNGUS TEST	RATING : 0 (NONE)	ASDI G21-96, Trichophyton mentagrophytes, ATCC9513 TEST FACE : FABRIC FACE
THE NOTATION SECTION :	NAME OF ART. : micrAgard PLUS FABRIC, RESISTANCE WATER REPELLENCY TREATMENT, D. 18mm58"	

Signature :

2013/08/16

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4. This report is only responsible to the submitted sample(s).
5. The sample(s) will be kept for a one-month period.

micrAgard PLUS Abrasion Resistance Test

LR2541

Openhouse Sample - Test results

Fabric ref: - micrAgard PLUS

Abrasion Resistance - 120 grit emery sheet (16 rubs = 1 cycle)

No Rubs	Woven Side	Coated Side
160	Very slight loss of fibres	No visible wear
320	Slight Loss of fibres	No visible wear
480	Slight to moderate wear	No visible wear
640	Moderate wear	Negligible wear
800	Moderate wear	Negligible wear
960	Moderate to severe	Negligible wear
1120	Moderate to severe	Negligible wear
1280	Severe wear of fibres	Negligible wear
1440	Severe wear of fibres	Slight wear of PU
1600	Severe wear of fibres	Slight wear of PU
1760	Severe wear of fibres	Slight to moderate
1920	Almost complete on periphery	Slight to moderate
2080	Complete wear of fibres on periphery, severe over all	Moderate
2240	-	Moderate

Summary:

- Woven side:**
- severe wear at 1280 rubs
 - almost complete wear of fibres on periphery at 1920
 - complete wear of fibres on periphery, severe overall wear at 2080 - test stopped
- PU side:**
- slight to moderate wear at 1920
 - moderate wear at 2080
 - moderate wear at 2240

Date: 25th July 2013



micrAgard PLUS Tensile Test

LR2541

Openhouse Sample - Test results

Fabric ref: - micrAgard PLUS

Tensile test results

	Tensile N/5cm Average	% Extension at Break Average
Length	1,527	20.5
Width	1,375	24.3
45° angle	1,537	65.5

Modulus N/5cm average at:	10%	15%	20%
Length	768	1,180	-
Width	425	795	1,144
45° angle	102	147	212

Date: 25th July 2013

openhouseproducts.com

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