



Helping you Reduce your Hair Contamination towards Zero

- A Technical Perspective



Helping You Reduce Your Hair Contaminants

Understanding Hair Containment

– Research by University of Bolton UK – funded by Aburnet Ltd.

The key to hair containment involves three things:

- An understanding of hair shedding and how it behaves under head coverings
- Using appropriate hair containment headgear for your type of operation, staff profile and risk category
- Managing your staff and operating procedures to keep staff focus on key changing aspects of good hair containment – using Free

hairBarrier
free guidance tools

- **Why do we Need Hair Containment?**
- Hair is the No. 1 contaminant in food, above plastics and metal
- Hair is a significant potential vector of Staphylococcus Aureus from the human scalp, with potential for food poisoning
- Merely discovering hair in food triggers highly negative emotions in consumers, including loss of appetite, feeling sick and NO repeat purchases
- Hair control is both a food safety and brand protection issue
- Retail multiples review hair contaminants as a key factor in the supplier relationship with fines commonplace

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- **How Much Hair is Shed?**
- All people (who aren't bald) shed between **100 to 150** hairs each and every day – at a constant rate (Source: Oxford University)
- So, over an 8 hour shift, **per 100 workers**, your processing operation will lose between **3,300 to 5,000 potential contaminants** (excluding pre-shed hairs not combed out before work commences)
- Both short and long hairs are shed the same, however short hairs are often NOT seen as much (Source: Oxford University)
- Research proves that short hairs are **twice** as likely to protrude through head coverings as longer hairs (Source: University of Bolton UK)
- **Therefore, short hairs represent a significantly higher risk to food safety than longer hairs**

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- **How is Your Company's Current Performance level?**
- What are the recent weeks hair complaints?
- Are they rising or falling?
- Which lines, departments, products or operations are affected?
- What do you consider to be the relevant factors?
- What audits do you perform?
- How would you like free help with this?

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- **How is Your Company's Current Performance level?**
- What is the proportion of temporary staff?
- What is the workforce ethnicity (with differing hair types)?
- Is all hair contained? front, back, rear quarter napes?
- Is language a communication problem?
- Is management time limited for audits?
- FREE **hairBarrier** free guidance tools can help with this!

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What are the Costs of Your Hair Contaminants?

- How much are the fines per complaint? - £25 to 50 depending on retailer
- What was the cost to the company last week / last month?
- What is the annual budget for hair complaint fines?
- How much management time is taken up investigating hair complaints?
- What is the believed cost your company places on the brand value and the customer relationship?

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How much can be Saved by a Reduction in Hair Complaints?

- **Annual Cost**
- £ Fine cost **X** Average number of instances per week **X** 52
- **Annual Cost saving by reducing average weekly complaint by just 2:**
- £ Fine cost **X** 2 per week **X** 52
- **Agree potential savings target reduction by plant / area / department**

Helping You Reduce Your Hair Contaminants

How Hair Behaves under Head Coverings

- **Research by University of Bolton UK – funded by Aburnet Ltd**
- Hairs are often pushed up through head coverings due to the mechanical forces applied when fidgeting, such as adjusting headwear or scratching the head.
- Fidgeting increases in frequency when workers are uncomfortable – such as when hot, performing differing levels of physical activity or moving between hot, ambient or cold temperatures
- Hairs will poke through all fabric structures due to inherent needle gaps in woven and knitted structures but more so in nonwoven spun fibre fabrics, such as those used in mob caps, bouffant caps and arm coverings. This is due to a lack of precise control with the alignment of the spun fibres leading to variable densities and gaps

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How Hair Behaves under Head Coverings

- **Research by Bolton University – funded by Aburnet Ltd**

- During extensive trial, short hairs, with their tendency to stand more upright, are twice as likely to protrude through head coverings than longer hairs. **(Source: University of Bolton, UK)**

“Therefore, to maximise hair barrier performance, two layers are required, where:

- **The inner layer expands and contracts greatly and works to comb hair flat, whatever the head size, hair style, or hair length, together with an**
- **Outer layer with high contact surface area which grips and holds any protruding hairs”**

– Professor Subhash Anand MBE, Professor of Technical Textiles, Institute for Materials Research and Innovation, University of Bolton, UK

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How to Contain Shed Hair

- All hair styles, both long and particularly short hair styles need to be folded flat to help hold and contain hairs – particularly the hairs that will be shed both during and before a work shift.
- Head coverings need to have the highest surface contact area to the head in order to hold shed hair
- Longer hair styles need to be encased and held secure to help ensure hairs do not fall out of head coverings at the edges, such as sides, nape and rear quarter nape areas which are both concave and less easily seen by the wearer
- Edging elastics are important; they must both hold the weight of hair during work physical activity AND be comfortable to the wearer to prevent excess fidgeting.

Helping You Reduce Your Hair Contaminants

Consider Your own Work Environment:

- By audits, from which areas of the head and neck are hairs evident?
- Does this vary by ethnicity, job function, department or work activity?
- Consider any religious headwear.
- Consider workers with glasses – how does headwear contain hair around the glasses arm?
- Do workers suffer from heat issues due to any of the following:
 - Changing levels of physical activity
 - Moving between different temperatures – e.g. hot / ambient / cold
- What is the operation's risk category?
- How can you improve your environmental performance?
- Are mixing or dicing operations involved? If so, same cost metal detectable product should be used to demonstrate due diligence.

Helping You Reduce Your Hair Contaminants

New Technical Features Available

hairtite
stretch-to-fit technology to hold hair flat

- Same cost Patent pending hairnet helps to fold and hold all hairs – both short and long – independently tested :
 - twice as effective as traditional mesh hairnets,
 - Up to 6 x better hair containment under a mob cap than a mob cap worn solo

KleenCap
High-tech headwear for max hairBarrier control

With **hairBarrier** and **staycool** technologies

- Patent pending fabric technology that features:
 - High surface contact area with head of hair – whatever style and size
 - Non-slip feature - helps grip any protruding hairs and prevent shedding into food
 - Positive attraction to the amino acids of keratin in hair to help hold shed hairs, preventing hair contamination

Helping You Reduce Your Hair Contaminants

New Technical Features Available



- Patent pending advanced wash additive dissolves unwanted residual hairs for eco-friendly re-use of head gear made from technical *hairBarrier* fabrics



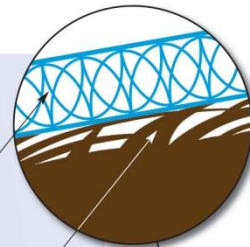
- Free web-based GMP Advice, wear guides, training videos and audits with graphical time bound reporting help keep staff trained, motivated and focussed on key issues relevant to your workplace
- Manage your hair containment as a KPI in a 10 minute monthly management meeting and reduce it ahead of your competitors for business advantage

Helping You Reduce Your Hair Contaminants

The Science of Hair Containment

HairTite

- Unique 'Fold and Hold' technology helps to contain hair, especially important for short hair
- Numerous contact points holding hair flat along each individual shaft
- Excellent for encasing long hair
- Expands and contracts to hold both short and long hair



- **Folds hairs flat**
- **Holds with high-density structure**

PATENT PENDING DESIGN



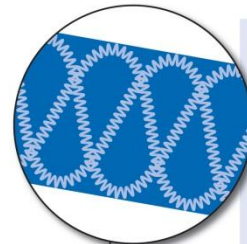
HairTite

KleenCap

with *staycool* option

contains **hairBarrier**
TECHNOLOGY

PATENT PENDING



- Expandable fabric to provide high-surface contact with head
- Provides a (+) positive attraction to help hold and retain shed hair
- Intelligent, non-slip structure to help keep hair firmly in place



KleenCap
over HairTite

Wear KleenCap over HairTite
for optimum hair containment

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Stretch-to-fit technology to hold hair flat

1. New technical 'stretch & recoil' structure – patent pending
2. Independently tested, performs under a mob cap:
 - 2 x better** retention than a traditional hairnet
 - Up to 6 x better** retention than without a hairnet
 - 11 x better** retention worn under a KleenCap-Max

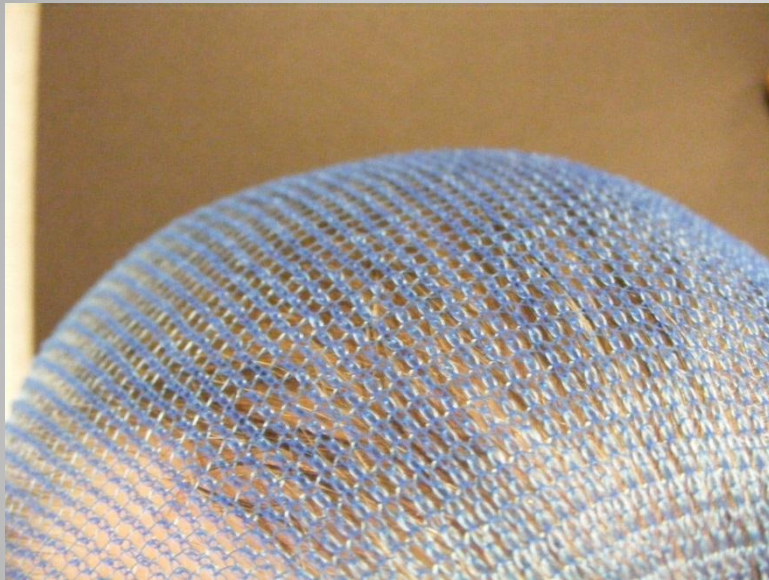
For the ***same price as a traditional hairnet!***

+ Same cost Metal Detectable option available for your due diligence

Why use a traditional hairnet when you can be

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ab
Hairtite
stretch-to-fit technology to hold hair flat



Traditional Mesh Hairnet



Pictures courtesy of **International Food Hygiene Magazine**

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With *hairBarrier* technology

- Forms to the shape of the head – irrespective of size or shape
- Has the highest contact surface area of any outer covering
- Expands and contracts to help hold individual strands of hair
- Anti-Slide technology to help prevent poking hairs escape
- Positive attraction to the amino acids of keratin in hair to help hold shed hairs
- *staycool* option for maximum performance where hot or changing work temperatures and varying levels of physical activity to reduce fidgeting

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Independently Tested:

2 X better hair retention than a 12 GSM mob cap

Up to 8 X better hair retention than a 12GSM mob cap when worn with a HairTite Standard HygieNet

Up to 11 X better hair retention than a 12GSM mob cap when worn with a HairTite Hi-Care HygieNet

Eco Friendly:

- Eco-friendly – caps approved for re-use 15 times
- Recycle on site – use as wipes in appropriate areas due to good absorption properties (Take care with metal clips if present)
- Wash with **HairGon** to dissolve residual hairs after each use

+ Same cost Metal Detectable option available for your due diligence

Helping You Reduce Your Hair Contaminants



Patent Pending

1. Simply add to wash cycle - follow use instructions
2. Dissolves unwanted residual hair for safe re-use
3. Leaves caps proven clean and fresh for re-use
4. Simple control with KleenCap's wash colour code stripe and downloadable signage – easily identifies when to rotate stock
5. Eco friendly – if all 500,000 UK food industry workers swapped from mob cap to KleenCap, the net saving would be:

353 tons landfill, 555 tons crude oil and over 2,900 tons of CO2 each year

Play your part – Act Now and request a trial pack.



Helping You Reduce Your Hair Contaminants

hairBarrier **FREE TOOLS AVAILABLE:** free guidance tools

- 1. Clear How & When to Wear Guides** – help ensure products are worn correctly each and every time
- 2. Clear Hair Hygiene Guides** eg: 'Buddy-check' – ensure best practice is followed each and every time
- 3. Staff videos** for canteen or agency training with optional competency testing
- 4. Good Manufacturing Practice** check lists & CCP's developed with leading food processors, Aburnet hair research and technical knowledge
- 5. Easy to use audits** with graphical time bound reporting

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FREE MANAGEMENT TOOLS MADE SIMPLE

- Have junior management staff perform regular audits
- Information stored for management comparisons by:
 - Time
 - Site Location
 - Line
 - Section
- You set the parameters
- Have 10 minute reviews of graphical results during monthly Management Meetings
- Set the focus for the coming month and measure performance
- Treat hair contamination and key likely causes as a Key Performance Indicator (KPI)
- Manage hair contamination to become a thing of the past