



FILTRONA WHITEPAPER NOVEMBER 2017

# ***FILTRONA PATRON<sup>®</sup> TAGGANT***

*Protecting the value & reputation  
of your brand*

***We deliver solutions, not just tape***



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## CONSTANT VIGILANCE

### *Constant vigilance is required to protect against the threat of counterfeiting.*

According to research published by Technavio in their Global Anti-counterfeit Packaging Market 2015-2019 report, the World Customs Organization and the International Chamber of Commerce, estimate that 5-9% of the annual global trade is accounted for by counterfeit goods and products. To put that in context, the report continues to estimate that **counterfeit products cause a loss of US \$512 billion in the global sales of major companies.**

This is a huge and difficult to interpret figure as it relates to any counterfeit goods/products. To create a more focused view, we have to scale down to a specific market and category.

Tobacco is a highly targeted product for counterfeiters, resulting in large losses in government tax revenues which go on to fund other public services, as well as to the tobacco manufacturers themselves.

In the UK, HM Revenue & Customs Corporate Communications department released a document in March 2015 entitled:

**“Tackling illicit tobacco: From leaf to light, the HMRC and Border Force strategy to tackle tobacco smuggling”.**

The document states that before their strategy to target this issue was implemented, the illicit market for cigarettes was 22%, and 61% for hand-rolling tobacco in 2000–01. **This resulted in tax revenue losses of over £3 billion.**



Counterfeit goods do not just have a monetary impact for governments and brands. Counterfeit pharmaceuticals and alcohol for instance, can cause serious health implications to those who use them, and in the most extreme cases, can result in death.

In a BBC report last year [www.bbc.co.uk/news/business-37470667](http://www.bbc.co.uk/news/business-37470667) the World Health Organization referenced that **“more than 120,000 people a year die in Africa as a result of counterfeit anti-malarial drugs alone either because the drugs were substandard or simply contained no active ingredients at all”**.

It is not just these direct effects of counterfeiting that are alarming, it has long been understood that the profits from counterfeiting go on to fund other serious organised crime and terrorism, so even the impact of seemingly innocuous counterfeiting can have far greater implications.

Protecting products from becoming counterfeiting targets is therefore of paramount importance and utilising authentication solutions is one way to combat this threat.

**Filtrona has a long standing and successful history in providing authentication solutions to a variety of industries heavily targeted by counterfeiters, including tobacco, alcoholic beverages and government issued documents.**

This has led to Filtrona becoming a trusted partner to both local and national governments, and some of the most respected brand owners in the world.





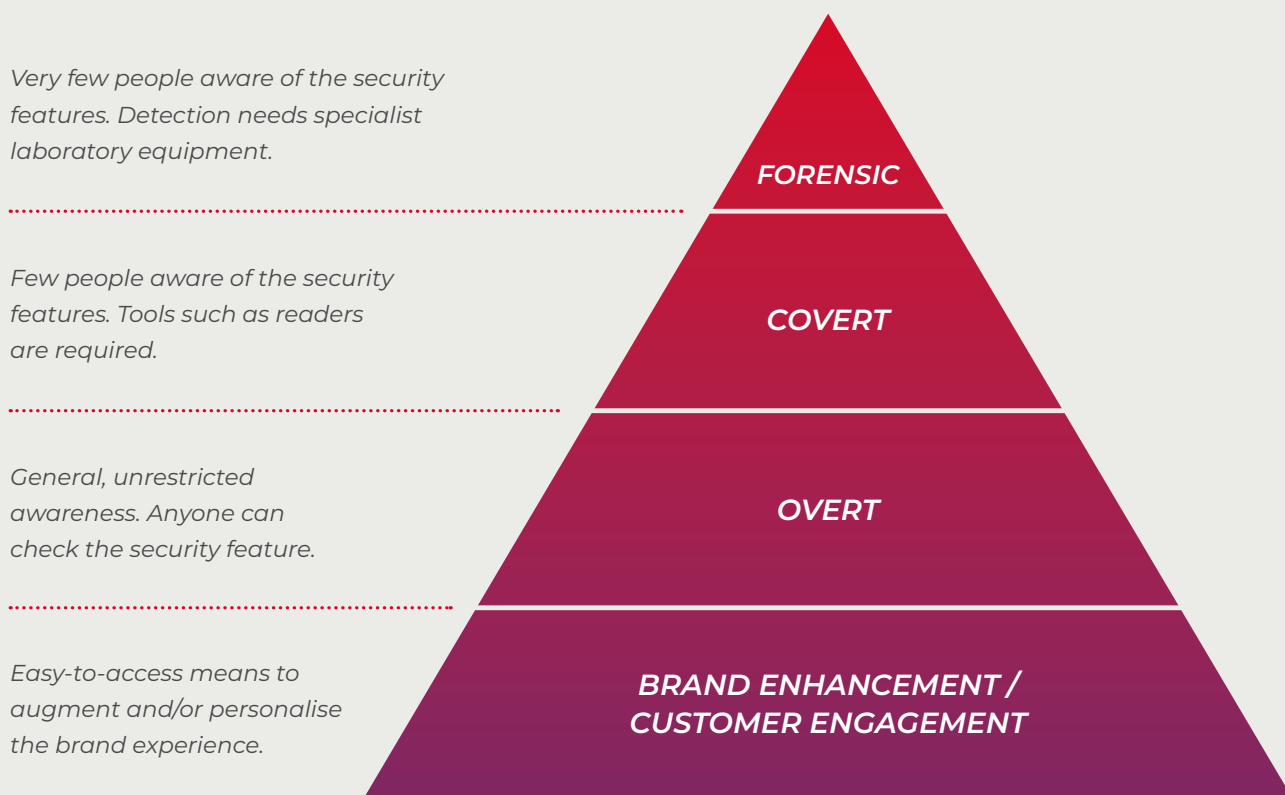
## WHAT IS AUTHENTICATION?

***The primary purpose of an authentication solution is to indicate that a product is genuine and distinguish it from counterfeit products.***

From the simplest interference evidence to the most sophisticated technologies, Filtrona offer different levels and types of authentication solutions dependent upon the potential risk, customer requirements and method of counterfeiting.

Filtrona has a diverse range of authentication technologies in its portfolio to validate that a pack is genuine; these can be overt or covert in nature.

Not one solution is bulletproof, but the aim is to make it as difficult as possible for a counterfeiter to replicate the product.



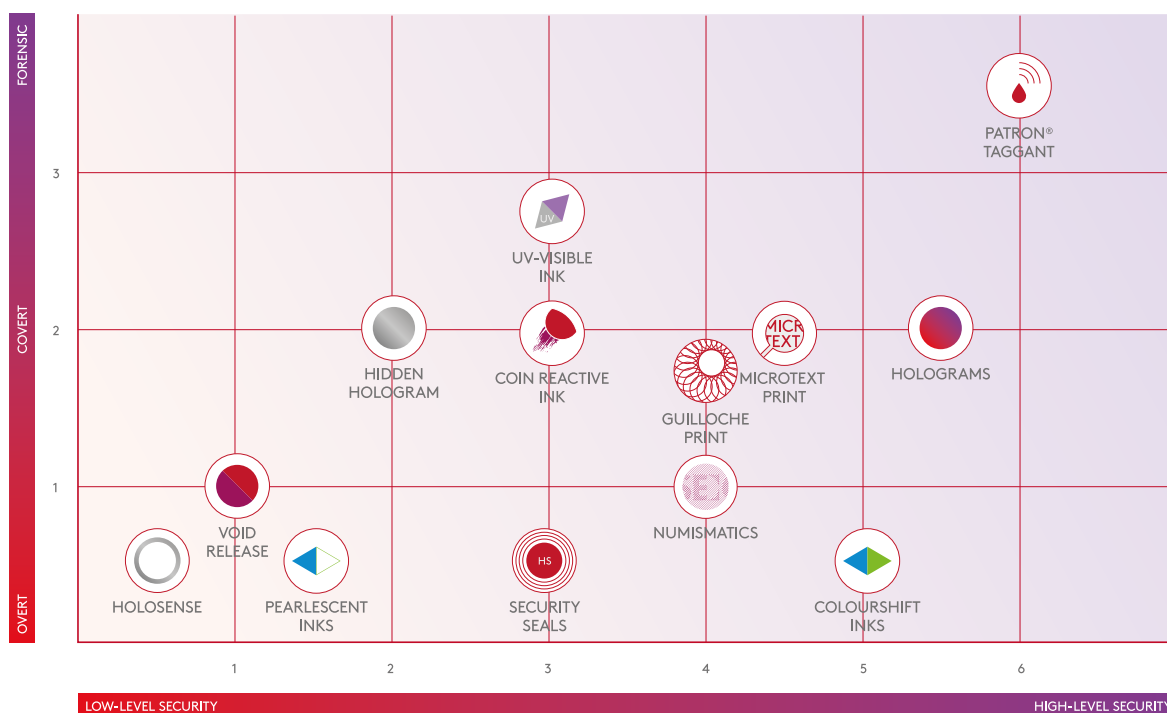
# AUTHENTICATION SOLUTIONS

## Overt Solutions

Overt solutions are visible and therefore allow authentication by consumers. Solutions in this category, for example colourshift inks, can offer both security and the ability to provide stand out on-shelf appeal by enhancing a brand. Overt technologies visible form, by their very nature highlight exactly what a counterfeiter should target. As these technologies often rely on consumer verification to distinguish real product from counterfeits, the counterfeit only has to be good enough to deceive an untrained user.

## Covert Solutions

Covert solutions are generally viewed to offer a greater level of protection to a product in comparison to overt options, as they are not visible therefore more difficult to target. Covert features generally will have a visible response when exposed to the correct activation condition, for example UV light and counterfeiters are becoming increasingly more aware and able to respond to these solutions. Forensic level features offer extremely robust determination of authentic product but, in field testing options are limited and/or cumbersome so identifying a product can be time consuming.



Within the Filtrona Authentication Portfolio, the highest level of protection offered from a single solution is provided by the covert-forensic **Filtrona Patron® Taggant system**. This system offers elements of forensic level determination with the added benefit of quick and robust in field verification of product integrity.

## PATRON® TAGGANT SYSTEM

The Filtrona Patron® Taggant system is a truly covert, lock and key taggant/reader system that return a pass or fail result quickly, accurately and discretely. The system is used to protect some of the most highly targeted goods from counterfeits and illicit trade. Since the launch of the system in 2007, we are not aware of any compromises to, or failures of, the Patron® Taggant in the market to date.



### Why Is Filtrona Patron® Taggant different?

Most solutions described as taggants in the market place are up-converting phosphors. These materials are characterised by their ability to convert invisible infrared light wavelengths to visible, coloured light. Essentially, these taggants light up when hit with an infrared light.

Since up-converting phosphors are a well understood class of materials with many published papers and manufacturers around the world, they are considered to be relatively easy to replicate or mimic, therefore not recommended as a standalone security solution.

Filtrona Patron® Taggants are uniformly doped, rare-earth based materials. Although the materials are excited by IR light, like up-converters, Patron® Taggant does not fluoresce in the visible spectrum. This provides a truly covert system that is undetectable in the field except by specific readers.

Unlike traditional up-converters, the proprietary manufacture process utilised to create the **Patron® Taggant pigment offers two important benefits;**

1. **That the particles can be distinguished from competitor or counterfeit product at a forensic level.**
2. **Significantly improved control of particle size, morphology, composition and spectral properties.**

**These unique taggants enable a more robust and reproducible performance from this system. This is particularly important in obtaining reliable in field performance from the Patron® Taggant readers.**



## DETECTION

### *Detecting the presence of Filtrona Patron® Taggant*

There are two options of Patron® Taggant Readers available exclusively from Filtrona. Both are hand held, battery operated units with a patented detection method. An authentication response is provided by the units within two seconds, signalled by LED light and either text response OR vibration dependent on unit.



**Patron® Taggant Pocket Reader  
(TPR)**



**Patron® Hand Held Reader  
(HHR)**

The units emit an IR beam of a specific frequency which excites the taggant sample. This causes an IR response from the taggant sample in a different area of the IR spectrum. The response is detected by the reader and the response signature is converted through complex algorithms into a unique code.

A programmed reader is only available from Filtrona. Once programmed, the reader detects the taggant and checks it against the signature(s) it has been set to validate. If the signature is a match, the reader will verify that it the sample is genuine.

The excellent level of control afforded by the patented manufacture process of the Filtrona taggant, allows the Patron® Taggant Readers to quickly, reliably and reproducibly detect and distinguish signals. This also means that up to five different genuine signals can be distinguished by the readers. It is also possible to include an additional 'other' response which will signify the presence of a non-genuine taggant or up-converter.

***The Filtrona Patron® Taggant system has been used in over 180 countries, including a number of revenue protection programs.***





## APPLICATION

Patron® Taggant can be applied in a variety of different ways including; gravure, litho, flexo, screen, spray and injection molding, making deploying the system simple and accessible for most packaging applications.

The Patron® Taggant is transparent as well as being truly covert, this makes the system an ideal addition to brand protection solutions where the authentication feature should not distract from the packaging itself.

For best results, it is recommended that the ink is applied as a clear lacquer in a specified, easily identifiable location. This makes in-field testing quicker and more robust as the user knows exactly where to find and test the taggant.

The Patron® Readers are simple to use, protected against reverse engineering and with a secure supply chain controlled by Filtrona, which offers peace of mind to customers deploying the system.





## SECURE SOLUTIONS DELIVERED

Filtrona understand that providing product protection is not a 'one size fits all' approach. Every response to illicit trade should be targeted to the specific need to provide the best results.

Criminals are becoming ever more sophisticated in their attempts to replicate genuine goods, meaning that legislation and anti-counterfeit methods have to continually adapt and evolve to prevent attacks.

### *The bigger the threat, the smarter our solution.*

Ultimately, the primary objective of anti-counterfeiting solutions is that ensuring that consumers are protected and actually receiving the product that they intended to purchase.

Authentication is just one important element that can be deployed to ensure this but does not offer 100% protection to a product/brand. Track and trace solutions such as serialisation, are becoming an increasingly important as a legislated tool to add protection to a product by allowing an item to be tracked in the supply chain. Relying on track and trace solutions to provide authentication, over and above their intended purpose could potentially make a product more vulnerable to attack. For example in the case of serialisation, product codes can be replicated or destroyed on pack.

Accordingly, Filtrona recommends separating the methods used to deploy track and trace and authentication. This dual step approach of track and trace with additional authentication provides the best deterrent to counterfeiters, by making it more difficult and costly to replicate genuine products. Indeed, separating the methods used for track and trace and authentication solutions in this way can add the next level of security to a system, meaning that the counterfeiter has to crack multiple codes rather than target all efforts on a single "point of access".

**Filtrona advocates layering solutions to offer the highest form of protection to brands and consumers. No solution offers 100% protection, but the layered use of features means that protection is not reliant on a single element. This strategy delivers more robust protection by adding additional complexity to deter counterfeiting.**



**LISTEN**



**PARTNER**



**DEPLOY**



**EVOLVE**



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## SUMMARY

*Filtrona is a leading global provider of tape and authentication solutions into a variety of markets ranging from E-Commerce to Tobacco.*

Counterfeiting is a threat in every industry that we serve and the ability to help our customer prevent this is paramount.

- Filtrona have a strong heritage in providing authenticated packaging with overt and covert solutions available.
- Patron® Taggant system offers a robust covert-forensic solution with reliable in field detection as part of a brand protection scheme.
- Layering authentication and intelligent packaging solutions such as serialisation, offers improved protection and deters counterfeiters targeting a product.

No solution offers 100% protection, but the layered use of features means that protection is not reliant on a single element.

Creating this multi-layered approach can be difficult for brand owners and technology providers alike. Supported by our in-house design studio, R&D and multimillion pound print facilities, we deliver solutions and not just packaging.

## OUR LOCATIONS



Manufacturing Locations



Sales Offices



**TALK  
TO US**

*Filtrona Tapes have over 100 years of history in providing expertise, product enhancement & meeting essential requirements.*

Contact us for more information:

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[www.filtrona.com/tapes](http://www.filtrona.com/tapes)



Filtrona Tapes

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