

## Products and Services

TraceTag is a leading provider of highly effective security marking and tracing solutions to combat counterfeiting, fraud, and parallel trading.

We provide a range of tailored solutions to suit individual customers' requirements in a cost effective manner.

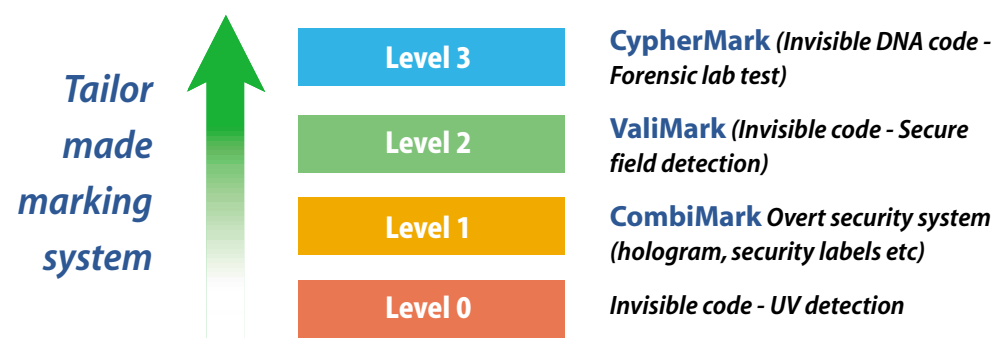
Behind TraceTag are several strong international organisations that are an important source of strength for the group.

**Vision:** *To be the leading provider of the most effective security marking and tracing solutions in the world to combat counterfeit, fraud and parallel trading in order to protect customer brand equity and prevent erosion of value.*

These solutions range from overt systems such as secure holograms or security labels (**CombiMark**), through covert optically or chemically based systems capable of detection in the field (**ValiMark**), to totally secure forensic systems based on proprietary DNA technology (**CypherMark**). **TraceTag** is the originator of DNA tagging systems for security and brand protection, and continues to be the leading innovator with robust and practical solutions that work.

THE WORLD'S MOST ADVANCED SECURITY SOLUTION

### TTI Multi level marking and identification systems



## ValiMark

**ValiMark** is a family of field-based tagging systems which applies chemical and luminescent tracers to a wide variety of liquid and solid materials. Marked items can be identified to provide proof of ownership or source which facilitates the detection of fraud, theft or illegal deposit.

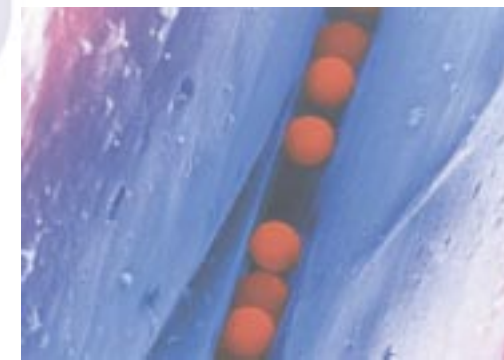
**ValiMark** can be encapsulated into sub-micron beads as well as being tailored to enable versatile usage in a number of other delivery systems such as inks, glues, solvents etc.

**ValiMark** offers a state-of-the-art covert security system with the convenience of on-site validation. Some configurations of ValiMark offer the possibility of incremental tagging, where each marked item bears a unique distinctive code.

This track and trace approach has an immediate benefit for all those who suffer parallel trading or illegal imports of their products.



TraceTag International Ltd



ValiMark fluorescent spheres lodged in a raw diamond fissure. Magnification: X 2000

## CypherMark

**CypherMark** is a novel system which allows the application of singular, unique codes to inks and printing materials - allowing unequivocal identification of the source of the printed material.

**CypherMark** is available in an unlimited number of unique batches, with billions of codes available.

- *Is totally secure and uncounterfeitable.*
- *Is used in tiny concentrations, less than parts per billion.*
- *Is stable and permanent.*
- *Is environmentally safe and non toxic.*
- *Is a product whose formulation is variable to suit specific application needs.*

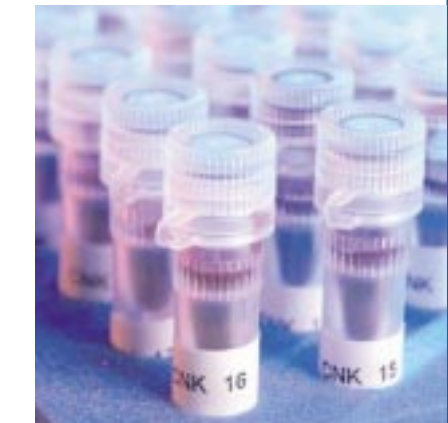
**CypherMark** is based on the design, production, application, recovery and identification of unique DNA molecules. DNA is built up of four distinct chemicals (whose shorthand notation are A, T, C, and G). A **CypherMark** tag comprises two primer sequences whose identity must be known before the unique code sequence can be accessed, and this information/capability is only available to **TraceTag**.

The order of these chemicals in the DNA molecule provides the uniqueness and specificity to the DNA tags. Our laboratories in U.K and France undertake the recovery and identification of the individual DNA molecules from marked items.

A DNA identification technology known as real-time quantitative polymerase chain reaction (qPCR) is employed, allowing the amplification, quantitative determination, and sequence identification of DNA molecules in a single assay. This amplification procedure allows very low concentrations of tracer to be detected with absolute specificity, enabling low and cost-effective use rates of **CypherMark**.

**TraceTag** owns a number of key patents covering both enabling technology, and the usage of qPCR for amplification and sequencing.

This specificity allows the detection of different tracers in the same print process and has real value in permitting multiple point tagging to be undertaken with a single sampling regime.



Simple to apply, CypherMark features a unique coding capacity



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## Uses in textile industry

### CypherMark applied to fabrics: a flexible technology

**Cyphermark** DNA taggants can be applied:

- *To thread oiling systems*
- *Directly into fabric padding tanks*
- *Directly into fabric dyeing tanks*
- *Through traditional printing inks*
- *Via spray systems*

- **Application in accurately monitored industrial processes**

- **Measured consumption of tagging material and cost-effective technology**

Loss rates are monitored and controlled for each application. The value for money of the technology is therefore maximized for the user.

- **Non-destructive testing**

The use of DNA allows the final user to proceed to forensic analysis by extracting marker from a limited surface of the fabric, while keeping the original piece of fabric intact and therefore available as evidence for further legal proceedings. The acknowledged robustness of DNA analytical procedures provides powerful evidence that courts now accept worldwide.

**ValiMark** can be incorporated:

- *Into technical finishes*
- *Upstream from the finishing process, into textile threads*
- *Downstream from the finishing process, into knitting threads*

**ValiMark** brings:

- *Instant detection of the security mark on any tagged item*
- *An efficient and flexible complement to the DNA protection approach*
- *Also the possibility to monitor the proper usage of high added-value finishing products by intermediaries, clients and subcontracting parties*



TraceTag International Ltd

TraceTag UK,  
Merton House,  
Croescadarn Close,  
Pentwyn,  
Cardiff,  
CF23 8HF, UK  
Tel: +44 29 2026 6012  
Fax: +44 29 2026 6115

TraceTag Europe,  
11 bis, rue Rousselet,  
75007, Paris,  
France  
Tel: +33 1 56 58 07 31  
Fax: +33 1 56 58 07 32

TraceTag Nordic,  
Veritasveinen 2,  
N-1322 Høvik,  
Norway  
Tel: +47 6757 8742  
Fax: +47 6757 8760

[www.Tracetag.com](http://www.Tracetag.com)



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