Anti-counterfeiting and anti-piracy technology guide

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DNA Coding

Every DNA strand contains a unique sequence of genetic information. This information, also called a genetic fingerprint, is unique to each single living organism. The uniqueness of DNA makes it ideal for forensic investigation and its use in determining paternity and detecting genetic health conditions is well known. DNA coding uses the same underlying idea to combat counterfeiting. It implants a unique DNA code into a product or package, rendering it traceable, identifiable and verifiable. This technology is compatible with all material types and can therefore be applied to products as diverse as bottles containing alcohol and their labels, perfumes, refined fuels and banknotes.

Used for

- Authentication
- Tracking/Tracing
- Anti-tampering / Anti-alteration

Suitable for

- Small products

Goes on

- Product
- Packaging

Can be used for

- Physical products

Visibility

- Invisible

Reading device needed

- Yes

Connection to server

- Yes

Description

DNA coding implants molecules containing specifically generated DNA codes (or DNA markers) into individual items or products. The basic DNA sequence may be modified to create an almost unlimited number of unique markers, which can be used to individually identify each of the articles being protected. DNA markers can be applied to all types of material, meaning that they can be applied both to products and their packaging. The tags are invisible to the naked eye and are stable and permanent. They have a low environmental impact and are non-toxic. The DNA is quick to apply and only the tiniest amount is needed – the DNA to material ratio is absolutely miniscule – which leaves the product properties unaffected. Specific tests must be carried out by specialised laboratories to detect and verify the implanted DNA codes.

This technology provides a legally recognised security system that can be used in court proceedings to prove wrongdoing under national laws. However, specific forensic tests may be required to support the information provided.

The most widespread solutions currently available on the market are patent protected.

Uses

DNA coding has been successfully used in the mechanical, food, pharmaceutical, textile and petrochemical industries, as well as by credit institutions. Popular applications include marking refined fuels, perfumes, clothing and all kinds of packaging.

Implementation

Given the diversity of product types that DNA coding can be used on, it is difficult to specify the requirements for implementing this technology. Any changes that need to be made to the production process will depend on the type of product to be tagged and the tagging method.

Cost

As the DNA coding solutions currently available on the market are patent protected, their cost is controlled by the patent holders.

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