Anti-counterfeiting and anti-piracy technology guide

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Reactive Inks

As their name suggests, these types of ink react in various ways when they come into contact with aqueous solutions, solvents and other chemical agents. The reaction can take several forms, such as erasure, discolouration, colour transformation, running, staining and smudging, all of which provide a clear indication of attempted alteration.

Used for

- Authentication
- Anti-tampering / Anti-alteration

Suitable for

- Very small products
- Small products
- Medium-sized products
- Large products

Goes on

- Product
- Packaging

Can be used for

- Physical products

Visibility

- Visible

Reading device needed

- No

Connection to server

- No

Description

Reactive inks are an effective way to detect and prevent document counterfeiting. They provide an immediate, visible indication of any tampering using liquid or chemical substances. For example, if a document is covered in an ink that disappears or changes colour when certain reagents are applied to it, then any attempt to use such substances to alter the characters or numbers on the document will be evident from the reaction.

There are three main types of reactive ink:

- Erasable inks: these use water-soluble dyes and resins; as a consequence they can be used only in typography or in dry offset printing. Some countries use erasable inks as the backgrounds on their cheques.
- Solvent-sensitive inks: these react to solvents or to chemicals such as bleach, alcohol or acetone, which are often used in alteration attempts. When exposed to the solvents or chemicals, these inks will run, change colour or cause a stain to develop, thereby revealing the forgery.
- Fugitive inks: similarly to solvent-sensitive, these inks react to water or an aqueous solution. The ink will run so the printed area becomes smudged, thereby revealing the forgery.

Uses

Reactive inks are mainly used on documents, cheques, paper valuables, etc., in particular to prevent the alteration of numbering.

Implementation

If you want to print reactive ink directly on the surface of your product(s), you will need to make sure you have the appropriate processes in place to do this during production. The printing process will need to be adapted to ensure that the ink is applied in the desired position.

Cost

Given the variety of reactive inks available, it is difficult to give a general idea here of the costs involved in implementing this technology.

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