



d₂p Taggant Technology

Protecting Brands, Products and Revenue

Covert polymer-embedded authentication.
For a world where counterfeiting is on the rise

The Global Counterfeiting Problem



Counterfeiting is a multi-trillion-dollar threat to brands

Fake products now affect every industry – packaging, food, pharmaceuticals, electronics, automotive, textiles etc.

Fake goods cause massive revenue loss, brand damage, and safety risks.

Criminal networks target packaging, because it's the easiest entry point.

Without reliable authentication, companies struggle to prove product legitimacy.

**The problem is growing. The risks are growing.
Authentication is no longer optional.**

The Costs to Brands

Counterfeiting destroys trust — and trust is expensive to rebuild

- Loss of consumer confidence and brand equity
- Product-recalls, compliance failures, and regulatory exposure
- Distributor disputes and supply-chain friction
- Margin erosion from grey-market diversion
- Difficulty proving authenticity in legal or insurance cases
- Every counterfeit product sold is a direct hit to revenue and reputation.



Why traditional anti-counterfeit measures fail



Most visible security features can be copied

- Holograms and labels are easily replicated
- QR codes can be cloned or redirected
- Serial numbers can be scraped and reused
- Printed packaging can be duplicated with high accuracy
- Visual checks rely on human judgement
- If criminals can see it, they can fake it.

You need a covert, forensic solution they can't evade.

Introducing d₂t Taggant Technology

A covert, forensic marker embedded directly into polymers

- Invisible, permanent, and impossible to reverse-engineer
- Detectable instantly with handheld or inline readers
- Reader can see through opaque packaging
- Zero impact on product-appearance or performance
- Safe, non-toxic, REACH-approved, food-safe
- Thermally stable and robust in extreme environments
- A security feature criminals can't see, can't remove, and can't copy.



How it works



Authentication made effortless

- Taggant is added as a masterbatch during polymer processing
- It disperses invisibly throughout the product
- Verification takes seconds using IR handheld or inline readers
- Pass/fail results are instant and objective
- Data can be stored securely (blockchain or local device)
- Fast. Accurate. Non-destructive. Impossible to fake.

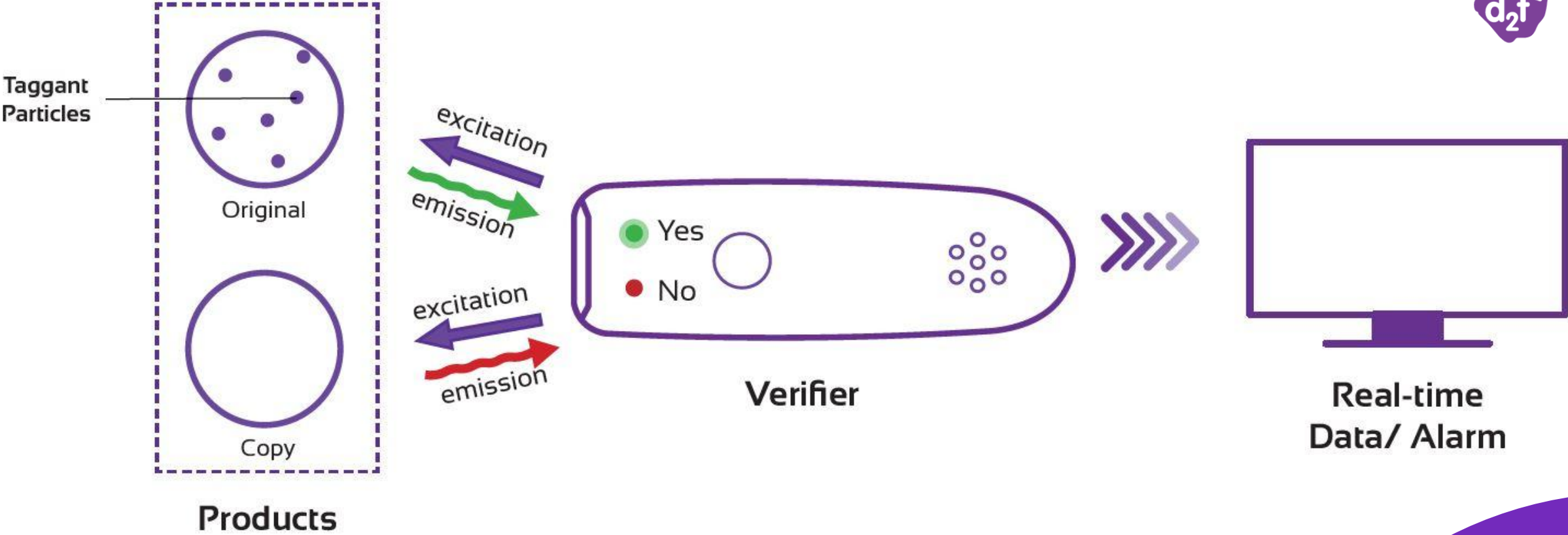
d₂t IR hand-held Reader

Out of line-of-sight IR detection

Multiple taggant recognition



Process Control



Infrared Verifiers register the specific optical response of the Taggant

Why d₂p Taggant outperforms other solutions

The most secure and scalable authentication method available

forensic-level security at commercial-level cost.



Taggant Features

30 different taggants are available, together with combination taggants, and different taggant concentrations

Utilization of two taggants can identify two components independently as well as their mix ratio

Taggant Incorporation: easily integrable and thermally stable in any polymer processing

Taggant-embedded products retain all their normal properties and physical appearance

An inspector can find and use the product's taggant features effortlessly

The product can be verified at any point in the supply chain

The lifetime of the taggant is indefinite.

The solution is inexpensive while being sophisticated and robust

Reliable operation of the d₂t TAGGANT security solution is guaranteed



Applications across industries

One technology – endless applications

- Packaging (rigid and flexible, films)
- Pharmaceuticals & medical devices
- Textiles, fibres, yarns
- Automotive components
- Electronics & electrical goods
- Bank notes
- Recycled-content in plastic products

IF IT'S POLYMER BASED – IT CAN BE VERIFIED



Recycled Content Verification

Governments are increasingly requiring recycled content in products, and are requiring verification.

A masterbatch containing d₂t taggant can be mixed with recycle in a specified proportion.

The combination is then mixed with virgin feedstock in the specified proportion to produce the finished-product. — without any extra manufacturing steps.

A low-power infrared verifier can then read the optical response from the taggant to quantify recycled content instantly.

Symphony has extensive experience with compounders and converters across films, filaments, fibres, injection moulding, and 3D printing.

The technology is well-engineered, commercially proven, completely safe, and secure.

It is cost-effective and can be used alone or alongside other verification methods such as mass balance audits, and certification schemes.



Recycled Content Verification

Enables you to meet regulatory requirements with confidence

- UK Plastic Packaging Tax requires 30% recycled content
- Brands must prove recycled content ratios — reliably and instantly
- D₂t taggants provide auditable, tamper-proof verification of whatever percentage is required
- Works seamlessly with virgin/recycled blends

A simple, scalable solution for compliance and transparency.



Why Choose d₂t Taggant Technology

- Used globally and across industries for value-chain traceability and authentication to avoid counterfeiting. Applied to plastics, pharmaceuticals, banknotes, jewellery, clothing, etc.
- Process is instant, non-destructive, and highly accurate.
- Secure results - automatically stored in blockchain or local devices.
- The d₂p TAGGANT system is impossible to manipulate or reverse-engineer.
- Taggant materials: 1-3 micron, highly engineered, optically active, operate in the invisible infrared (IR) region of the light spectrum.
- Masterbatches are completely safe: non-toxic, non-leaching, chemically inert, REACH approved, and food safe.
- Robust: thermally-stable, not affected by humidity, high temperature, or aggressive chemical environments. High clarity.



Protect your Brand, Revenue and Customers

- Trial projects available
- Inline QC integration possible
- Distributor and partner support
- Technical training and implementation assistance

**Let's secure your products from the inside
out**





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