

# .TRACY.

## Empowering Trust Through Traceability

### Innovative solutions for transparent and sustainable product journeys.

TRACY delivers a patented physical marking and tracing solution to ensure product origin, traceability and authenticity along the entire supply chain of commodities and products.

Tracy is an innovative solution that incorporates an element-level tracer in extremely small quantities, detectable with specialized equipment. This cutting-edge technology ensures unparalleled traceability, enabling the tracking, securing, and authenticating of products throughout their entire lifecycle.

## Biofuel and additives

**The biofuels market is emerging as a key sector facing the challenge of providing high-quality energy products suitable for both older and modern engines.** A major concern in this industry is ensuring maximum transparency regarding the provenance of raw materials.

Environmental regulations and energy security concerns are driving the increasing adoption of biofuels. These alternative fuels align with sustainability goals and regulatory mandates, such as the Renewable Energy Directive (RED II) in Europe, which enforces binding renewable energy consumption targets in transportation. This creates a growing and structured market for biofuels.

### Methodology

## Patented Traceability Technology

To address these challenges, we have developed a patented traceability solution that can be physically integrated into various types of biofuels, including HVO, BFO, MGO, VLSFO, and SAF.

Our approach ensures full supply chain traceability, from upstream production to downstream distribution. The system accommodates both single-source and multi-source production, adapting to the material composition of the biofuels.

### Key features of our marking solution include:

- Track/trace per brand and/or per batch.
- Determine counterfeited/scammed fuels.
- Mark, track and trace once and allow verification along the fuel process.
- Ensure the fuel/biofuel is compliant with motor engines (marine, trucks, cars, other engines, military fleet...).
- Avoid Carbon Tax fraud.
- Determine origin of fuel/biofuel through the analysis of the inte-

grated unique code.

- Ensure dilution of additives are compliant with the end fuel/biofuel product. In addition to below about the Textiles.
- Integration at extremely low concentration levels, ensuring no impact on biofuel quality.
- Batch-level marking to prevent carbon tax fraud at production sites and storage tanks.
- Identification of dilution percentages and detection of residual biofuels mixed with new fuel.
- Unique biofuel coding to detect theft.
- Traceability of co-products (e.g., glycerin, animal feed) originating from biofuel production.
- Determination of biofuel sources at a local level, ensuring land use compliance with government regulations.
- Physical traceability as a complementary "missing link" to blockchain, enabling hash code verification throughout the supply chain.
- The ability to evolve our solution based on business needs, leveraging atomic and isotopic properties naturally present in biofuels.

Furthermore, our solution prevents fraud related to blended additives, which are often diluted with water to maximize profits while compromising performance and emission reduction benefits.

# Biofuel and additives

## Results

### Targeted Business Issues and Challenges

Our solution provides a comprehensive and tamper-proof system that ensures:

- **Full transparency and authentication** of biofuels at both batch and product levels.
- **Robust protection** against tax fraud, dilution, theft, and unauthorized blending.
- **Reliable traceability** of biofuel production and distribution, including co-products.
- **Seamless integration** into existing regulatory frameworks and supply chains.



## Client Benefit

### Enhancing the Traceability Framework

- Compliance with stringent environmental and energy regulations.
- Protection against financial losses from fraud, theft, and illicit blending.
- Enhanced credibility and trust in biofuels supply chains.
- Optimized operational efficiency and product quality assurance.
- Future-proof traceability solutions adaptable to evolving business needs.