



Fuel smuggling is a major problem in many parts of the world causing huge damage to brand owners. Fuel marking is the integration of a unique security marker in trace quantities into petroleum products before distribution in the market. Markers are used to guarantee product integrity, as well as protect against counterfeiting, adulteration and tax fraud.

Luminochem has been developing its fuel marking solutions for governments and brand owners for years. LiQode is a proprietary two-component security marker system for liquids, applicable to lubricants, hydraulic oil, gear oil and motor oil. The fuel marker (LiQode) is almost undetectable without the second component.

## Advantages

- good solubility and stability
- low dosage
- invisible
- no smell
- no harmful atoms
- field test available
- secure against forgery
- hides diverse and complex information

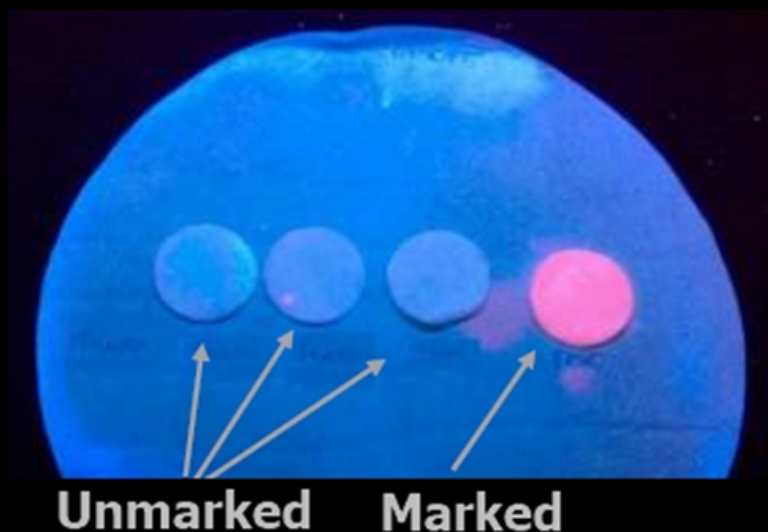
## Applicable to

- Hydraulic Oil
- Gear Oil
- Motor Oil



## How does it work?

- The first component is in the liquid (lubricant)
- A filter disc is treated with a second component
- The “fuel-marker” /LiQode/ is practically undetectable without the second compound
- Fluorescent color (red) develops on the filter’s surface that is easy to identify
- Optionally a lab box is provided
- The marker contains only C, H, O, (X) elements, is metal-free, non-radioactive, has good solubility in petroleum products, and absolutely inert





## Additional advantages

- Absolutely inert
- Excellent chemical resistance against strong mineral acids and charcoal or other adsorbents
- After field operation, the marker remained unchanged
- Good thermal stability
- The product just slightly affects the viscosity of the lubricant
- Engine tests showed minor decomposition/ concentration decreasing

