



# Jones Environmental Forensics

## Euromarker Dyes

Fuel dyes are dyes added to fuels to indicate the difference between rebated, un-taxed fuels (dyed) and taxed fuels (clear). In the UK, red diesel is dyed gas oil used for agricultural and non-road applications and is significantly cheaper than heavier-taxed diesel fuel.

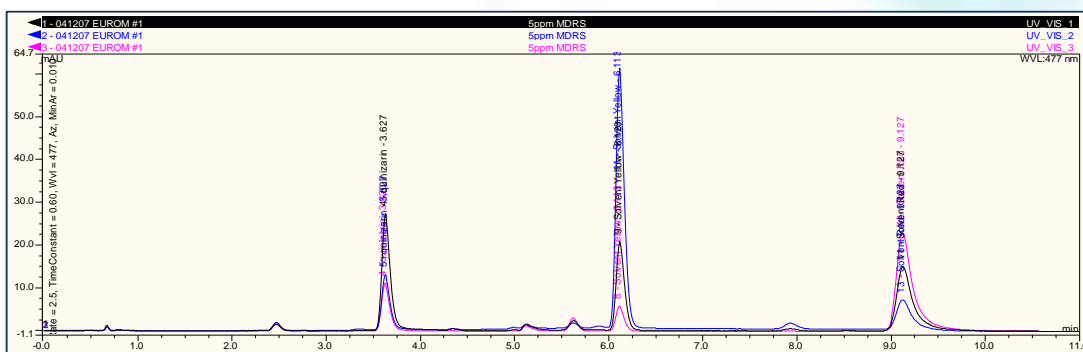
The dyes used are solvent dyes and are often diazo dyes such as Solvent Red 19, Solvent Red 24 and Solvent Red 26. Anthraquinone dyes are used for green and blue shades.

In the EEC, after August 2002, all EU countries were obliged to add 6mg/l of Solvent Yellow 124, also called SY124, Sudan 455 and Somalia Yellow as a fuel dye. Its CAS number is 34432-92-3 and is referred to as Euromarker yellow. Solvent Yellow is intended to be difficult to remove from the fuel in an economical way, whereas earlier dyes were more easily removed resulting in tax frauds.

The custom marker quinizarin is also added to rebated fuels.

Different countries add different dyes to fuels – Ireland uses Solvent Blue 79 in diesel and Solvent Red 19 in Kerosene. UK uses Solvent Red 24 and quinizarin in Red Diesel and Coumarin in rebated kerosene. Aviation fuels also have coloured dyes worldwide, indicating the type of fuel. European Union, from 2002 uses Solvent Yellow 124 (Euromarker) in many rebated fuels.

The dyes and markers can be determined by HPLC and their presence indicates a rebated fuel. The chromatogram below indicates the quinizarin, Solvent Yellow 124 (Euromarker) and Solvent Red 24.



HPLC chromatogram standard dyes

For further information please contact us via our website [www.jones-forensics.com](http://www.jones-forensics.com) :

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