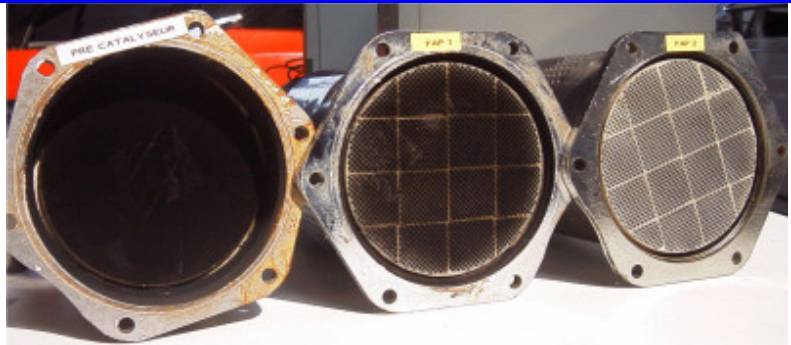


Post-Treatment Devices: Clogging of DPFs & Poisoning of Catalysts

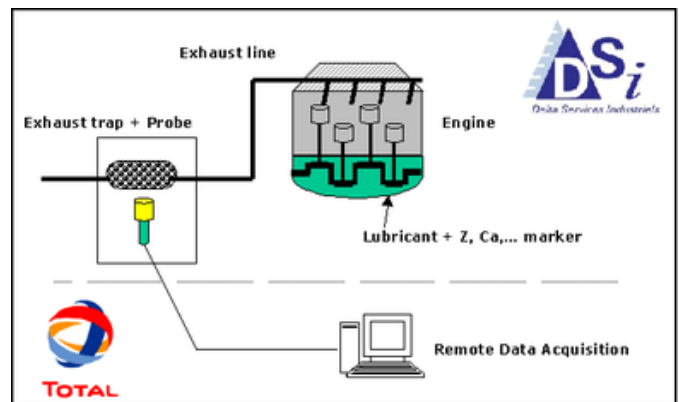
Introduction

The lifetime of the new after-treatment devices is influenced by the composition of the lubricants. A novel, non-destructive radiotracer technique has been developed based on the labelling of the different elements in the engine oil, notably zinc & calcium, which lead to the formation of ash deposits in after-treatment systems (ATS).



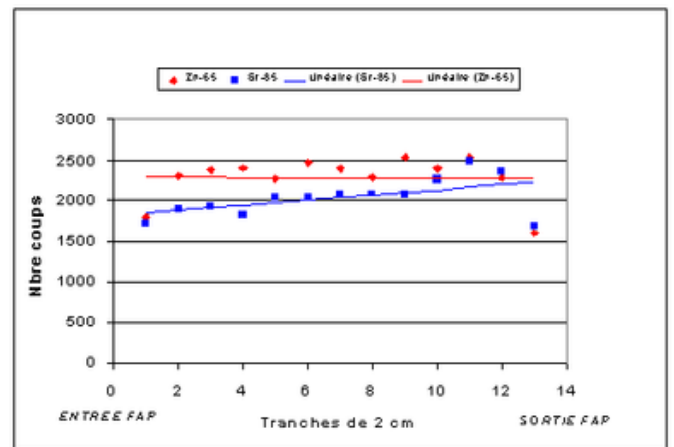
Measurement Principle

The technique consists of labelling one or more elements in the lubricant. When the lubricant is burned in the combustion chamber, the residues are transferred via exhaust gas to the ATS, where they tend to form deposits. Using an appropriate radiation detector located close to the ATS, one may measure the radiation produced by the deposited tracers. This radiation is proportional to the amount of labelled elements trapped in the ATS.



Features

- Measurement through the can, no dismantling
- Real-time results
- Each tracer is representative of a specific element
- No change in oil properties / real operating conditions
- Very high sensitivity: <math><0.1\text{mg}</math> trapped
- Monitoring based on ANIQSpec equipment
- 3D-Mapping of ash deposition off-line (see figure).



Air-X, D-Lube and C-Lube are methodologies developed and patented by DSI sprl

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