TES Bretby

Bretby Bulletin

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Bretby achieves *mCERTs* accreditation for its' new industry-leading TPH analysis

You may recall that in Bulletin 7 we unveiled how Bretby had developed faster TPH methods to meet market needs. The speed increase delivered significant improvements in instrument capacity, however since then, the market has shifted once again.

Many UK laboratories have been extracting TPH by simply shaking your sample in a test tube, some, for as short as one minute. Many have resorted to using air dried and ground samples for TPH analysis as spikes are recovered easily during the short extraction procedure and the dry powdered sample is easy to handle. They claim that there are no significant drying losses when it is well known that up to nC15 (half of diesel) is actually lost or exchanged across the samples. The result is that many samples appear weathered and there is significant cross contamination by naphthalene and other light extractable organics.

During the past 9 months, we have been developing a range of new extraction procedures that perform on field moist samples. We returned to the drawing board and devised a modular extraction workstation that delivers high analyte recovery, zero cross contamination, low QC failure rate combined with high speed throughput.

Based on traditional extraction steps, the TPH method has been validated according to the convention set out in the Environmental Agency's *mCERTs* Standard Version 3.0. Following a recent inspection by UKAS, we achieved accreditation to ISO17025 and mCERTs simultaneously. The table below shows how the new method easily meets the mCERTs performance criteria.

TPH	Recovery (%)*	Precision (%RSD)*
>C8-C10	n/a**	5.4
>C10-C12	n/a**	4.3
>C12-C16	n/a**	4.8
>C16-C21	n/a**	2.6
>C21-C35	n/a**	4.7
ΣTPH(C8-C40)	**99.2**	**3.0**
mCERTs	**70 – 130**	**15**

* silty soil spiked at 20% range with commercial diesel and lubricating oil
** recovery data not available as there are no certified banding standards currently available

Reporting options cover all carbon banding themes:

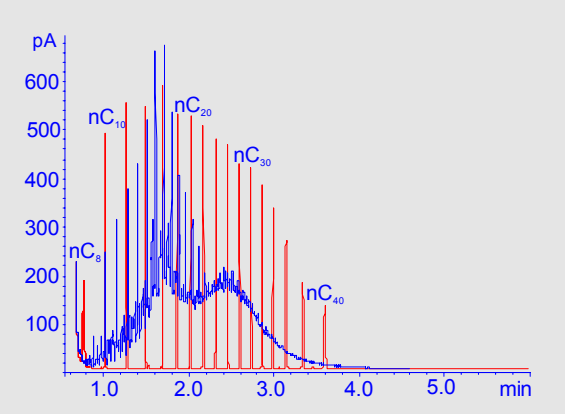
- TPH Criteria Working Group
- Texas Risk Reduction Program
- Massachusetts Department of Environmental Protection
- C10-C20, C21-C30, C31-40
- Plus many more ……

The new extraction method has also been tailored to ease the process of class separation, into aliphatic and aromatic fractions.

Here too, a workstation concept has been implemented to offer high volume and fast throughput to what has traditionally been a very time consuming and tedious process.

Our class separation delivers truly stunning separation and is not hindered by the excessive breakthrough suffered by the automated systems used by our competitors. Rest assured, with our data, you will not be wasting time interpreting hydrocarbons that aren't really there!

We have recently been granted accreditation to ISO17025 for class fractionated TPH (aliphatic/ aromatic class fractions).



Mixture of commercial diesel and lube oil overprinted by n-alkanes (EC)

The specification for mCERTs accreditation of class fractionated TPH has not yet been agreed. It is likely to place a requirement on laboratories to show quantitative recovery of surrogate alkanes and PAHs through the entire analytical process rather than accepting performance of extraction and fractionation steps in isolation.

Our laboratory is equipped with the latest Agilent Technologies chromatographs fitted with special custom enhancements to ensure:

- fastest throughput in class
- electronic format chromatograms
- QA/QC data as standard.

Sounds too good to be true? Then give us try.

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