

DATA BULLETIN

Determination of the oxygen concentration in liquid fuels with the rapid OXY cube

The rapid OXY cube is a dedicated analyzer for highly precise and matrix-independent oxygen concentration measurement. The analysis is based on pyrolytic conversion of oxygen to carbon monoxide at 1450°C. The instrument can be equipped with the vario Liquid Sampler for routine analyses of liquid samples.

The rapid OXY cube is equipped with the vario Liquid Sampler for the automatic injection of liquid samples. In the pyrolysis tube, the ash finger (for solid samples) is replaced by graphite felt.

All samples were filled into 1.5 ml vials and analyzed ten times using an injection volume of 8 µl. The average oxygen content, and the absolute and relative standard deviation of the analyses are shown below.

SAMPLE	O [%]	SD [%]	RSD [%]
gasoline E5 (5% ethanol), A	2.468	0.010	0.40
gasoline E5 (5% ethanol), B	2.544	0.024	0.95
pure bio diesel	11.095	0.026	0.24
diesel B10 (10% biodiesel)	1.096	0.009	0.85

The analyses of 2 gasoline and 2 diesel fuel samples show excellent standard deviation of only 0.01–0.03%. The system showed no memory effects despite large shifts in oxygen concentrations of consecutively measured samples.

The rapid OXY cube is fully compliant with ASTM D5622, "Standard Test Methods for Determination of Total Oxygen in Gasoline and Methanol Fuels by Reductive Pyrolysis", the most important standard for oxygen concentration analysis of fuels.

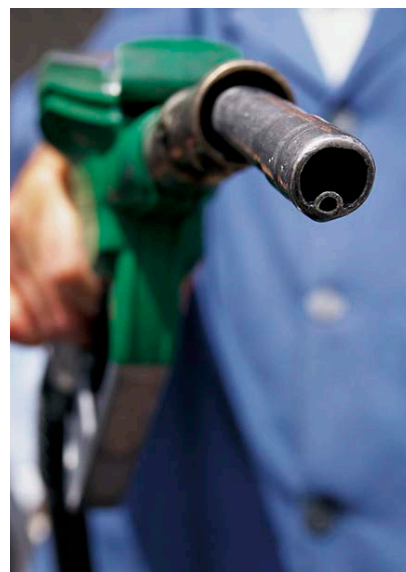
INSTRUMENT:

rapid OXY cube with vario Liquid Sampler

DETAILS:

carrier gas: helium

sample: 8 µl liquid fuel



STANDARD:

ASTM D5622

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