DATA BULLETIN

elementar
EXCELLENCE IN ELEMENTS

Determination of low sulfur concentrations in mineral oil using the trace SN cube

The reduction of sulfur in liquid fuels is a special requirement in environmental control, which requires a high performance analysis. The trace SN cube is specially developed for the safe and accurate analyses of sulfur concentrations in petrochemical products in the lower ppb range and far exceeds the requirements of today's standards.

Four mineral oil samples were analyzed with the trace SN cube. The samples were automatically injected using the vario Liquid Sampler. After combustion, sulfur is analyzed in the form of SO_2 using a UV fluorescence detector.

All samples were analyzed six times with a sample volume of 40 µl. The average sulfur contents and corresponding absolute and relative standard deviations are given below.

SAMPLE	S [ppm]	ABSOLUTE SD [ppm]	RELATIVE SD [%]
oil sample 1	7.56	0.048	0.64
oil sample 2	14.3	0.065	0.45
oil sample 3	0.61	0.008	1.23
oil sample 4	0.66	0.006	0.97

The results show that the S content of the fuel samples could be determined with a very high precision, even for sulfur contents well below 1 ppm.

The trace SN cube is very well suited for applications in the petrochemical industry. The instrument operates according to international standards ASTM-D-5453 and DIN EN ISO 20846 and greatly exceeds the repeatability required by these standards.

INSTRUMENT:
trace SN cube

DETAILS:
carrier gas: synthetic air
sample: 40 µl oil



Elementar Analysensysteme GmbH
Elementar-Straße 1
63505 Langenselbold (Germany)
Phone: +49 (0) 6184 9393-0
info@elementar.com | www.elementar.com

09 / 2026 A