

DATA BULLETIN

Analysis of particle containing waste water with the vario TOC cube

Waste water poses certain problems to TOC analyzers due to particle content and high salt concentrations. The vario TOC cube with its unique particle mode is capable of analyzing such samples with nearly the same precision as particle free samples.

The samples were analyzed in the particle mode, thus avoiding sedimentation of the particles in the syringe. A quartz crucible was placed into the combustion tube to protect the catalyst from the sample matrix. The combustion temperature was set to 950°C to ensure complete oxidation of the particles.

To verify the TOC recovery rate for samples containing particles, a 100 mg/l cellulose suspension was analyzed as prescribed in the international standard ISO 8245.

The samples were stirred before analysis and the inorganic carbon was removed from the sample by flushing with synthetic air and acidification with HCl. All samples were analyzed three times.

SAMPLE	TOC [mg/l]	SD [mg/l]	RSD [%]
Influent 1	159	1.30	0.82
Effluent 1	71.8	0.48	0.67
Effluent 2	81.2	0.26	0.32
Cellulose	101.7	0.70	0.68

In terms of repeatability and linearity, the results show the excellent performance of the vario TOC cube. Due to the matrix separation by means of the quartz crucible, the lifetime of the combustion tube and the catalyst is not effected by the difficult sample matrix.

The vario TOC cube exceeds the requirements of the international standard for samples containing particles ISO 8245 on "Water quality – Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)".

INSTRUMENT:

vario TOC cube

DETAILS:

carrier gas: synthetic air

sample: 0.2 ml waste water



STANDARD:

ISO 8245

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