DATA BULLETIN

elementar
EXCELLENCE IN ELEMENTS

Determining the nitrogen content in electrical insulation paper

Electrical insulation paper is typically treated with nitrogenous organic materials to reduce thermal degradation of the cellulose in the paper. This "thermally upgraded" paper material can withstand higher operating temperatures and allow the electrical equipment to have a longer useful life span. The amount of nitrogen incorporated into the paper web determines the thermal stability of the material.

The nitrogen content of different electrical insulation papers has been determined using the rapid N exceed. The paper samples were weighed in tin foil and pressed to pellets. The daily factor has been determined using EDTA. All samples were analyzed five times. The results are shown in the table below.

SAMPLE	PAPER #1	PAPER #2	PAPER #3	PAPER #4	PAPER #5
N [%]	2.353 2.355 2.454 2.293 2.381	2.377 2.308 2.129 2.303 2.260	2.352 2.422 2.410 2.366 2.362	2.827 2.824 2.813 2.821 2.814	3.163 3.393 3.316 3.305 3.305
AVERAGE SD	2.367 0.058	2.275 0.092	2.382 0.031	2.820 0.006	3.296 0.083

The results show that all samples could be analyzed with a very high precision.

The rapid N exceed delivers the fastest nitrogen analysis with exact results, independent of any sample matrix, which makes the instrument very suitable for applications in different areas of operation, for example in the paper industry.

INSTRUMENT:
rapid N exceed

DETAILS:
carrier gas: CO_2
sample: 250–350 mg paper

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