DATA BULLETIN

elementar
EXCELLENCE IN ELEMENTS

Highly accurate CHNS analysis of pharmaceutical substances

In the pharmaceutical industry, predictability and highest accuracy are critical for a good performance of elemental analysis. Compliance to strict regulations can only be reached with very rugged instrumentation and unconditionally reproducible instrument behavior. UNICUBE® is your solution when it comes to demanding applications in pharmaceutical elemental analysis. It can be supplied with 21 CFR part 11 software compliant to GLP guidelines. As all temperatures, gas flows and pressures are digitally controlled (no manual valves), it is the only instrument on the market which is fully compliant with 21 CFR part 11 and GLP.

INSTRUMENT:
UNICUBE® with 21 CFR part 11 software

DETAILS:
mode: CHNS
sample: <1–5 mg pure chemicals

Different pharmaceutical substances were weighed into tin boats and analyzed with a standard method on the UNICUBE. The theoretical and analyzed CHNS content and the absolute standard deviation of the analyses are presented in the table below. Please note that some substances were not available in >98 % purity.

SAMPLE	(n=5)	C [%]	H [%]	N [%]	S [%]
biotine ≥99 %	theory analysis	49.16 49.21 ± 0.09	6.60 6.64 ± 0.01	11.47 11.49 ± 0.03	13.13 13.11 ± 0.05
D-cysteine ≥99 %	theory analysis	29.74 29.76 ± 0.06	5.82 5.85 ± 0.01	11.56 11.65 ± 0.01	26.47 26.51 ± 0.02
aspirin ≥99 %	theory analysis	60.00 60.16 ± 0.01	4.48 4.50 ± 0.01		
carbimazole ≥98 %	theory analysis	45.15 44.98 ± 0.05	5.41 5.26 ± 0.05	15.04 15.15 ± 0.04	17.22 17.18 ± 0.09
ciprofloxacine ≥98 %	theory analysis	61.62 62.06 ± 0.08	5.48 5.53 ± 0.05	12.68 12.73 ± 0.06	-
atropine ≥99 %	theory analysis	70.56 71.08 ± 0.01	8.01 8.09 ± 0.02	4.84 4.84 ± 0.01	-

UNICUBE offers high analytical performance combined with innovative technology and unprecedented usability. With UNICUBE, elemental analysis is fully compliant to pharmaceutical regulations and straightforward at the same time. Enjoy tool-free maintenance and extraordinary instrument uptime due to functional design and experience the lowest noise emission in the industry.

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