

Thermogravimetric Analyzer TGA Thermostep

General Information

Thermogravimetry is a standard method to analyze organic, inorganic and synthetic materials. Thermogravimetric analysis in general means the measurement of the weight loss during a user-defined temperature or heating process.

ELTRA's TGA Thermostep is a thermogravimetric analyzer which determines various parameters such as moisture, volatiles and ash at user-defined temperatures and atmospheres in a single analysis. The thermogravimetric analyzer TGA Thermostep simultaneously analyzes up to 19 samples with sample weights up to 5 g and can be operated at temperatures up to 1000 °C.

A special feature of the TGA Thermostep is the management of crucible covers. The thermogravimetric analyzer can place and remove the covers of the crucibles during analysis. This feature allows for example the precise determination of volatile content in coal and coke.

Application Examples

coal, coke, food, limestone, plastics

Product Advantages

- short heating rates, high temperature constancy
- simultaneous measurement of 19 samples
- sample weight in macro range (multiple gram)
- crucible covers can be placed and removed during analysis automatically
- precise, accurate and reliable determination of moisture, volatile, ash content
- wide range of materials can be analyzed
- programmable furnace temperature can be set up to 1000 °C in steps of 1 °C
- powerful software (multilingual, customized display, export of results)
- two thermocouples for precise temperature control
- balance with 0,0001 g resolution
- low maintenance
- robust design allows usage in production control and laboratory

Features

Measured elements	ash content, moisture, volatiles
Samples	inorganic, organic, synthetic
Field of application	agriculture, biology, chemistry / plastics, coal / power plant, construction materials, environment / recycling, food, geology / mining, glass / ceramics, medicine / pharmaceuticals
Furnace	resistance heated ceramic furnace,

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	programmable in 1 °C steps from 50 °C up to 1000 °C
Detection method	balance
Max. number of samples	19 crucibles + 1 reference crucible
Balance resolution	0.0001 g
Balance precision	0.02 % RSD
Gas required	depends on application: oxygen 99.9 % pure (2 - 4 bar) and/or nitrogen 99.9 % pure (2 - 4 bar) and air 99.5 % (5 - 6 bar)
Power requirements	230 V, 50/60 Hz, max. 32 A
Dimensions (W x H x D)	55 x 52 x 62 cm
Weight	~ 65 kg
Required equipment	external exhaust (exhaust diameter: 100 mm / blower with 4m ³ /min), monitor, PC

Function Principle

Operation of the thermogravimetric analyzer TGA Thermostep is simple and convenient. The measurement process has to be defined once regarding the used temperatures, atmospheres and heating ranges. To start the thermogravimetric analysis, a predefined process simply has to be chosen in the software and the sample has to be weighed into the crucible. All further steps are processed automatically. All data processing, control of the measurement process and calculating of the result is done by an external PC with Windows®-based software. Thermogravimetric analysis of moisture, volatile and ash content requires about 4 hours.