

function

SCITEQ's own aluminium frame build up for carbon black disposure measurements of plastics materials. Nabertherm high class ovens are used in combination and with configuration dependant on standard choice.

The unit is used for determination of carbon black content in olefin materials like polyethylene or polypropylene that do not contain non-volatile additives or fillers.

highlights

high accuracy

upgradeable

LCD display, USB interface

high quality materials

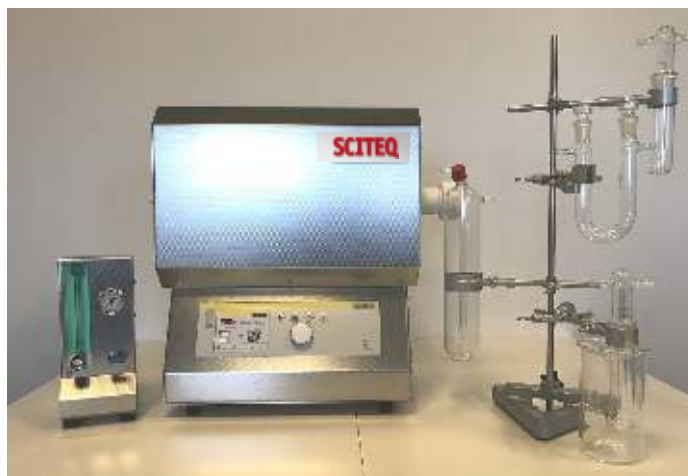
reliable test result

intuitive operation

scope

The test is often used as a quality control measurement regarding carbon black content of polyolefin plastics.

The Carbon Black equipment comprises the electric tube furnace and a side panel. The front panel of the electric tube furnace displays the controls needed to operate the furnace and automatic temperature control.



The electric tube furnace is for heating the combustion pipe in which the shuttle is inserted with the sample to be tested.

The purpose of the side panel is to support the outside components, namely: the flow meter, the flow control valve, the washing bottle and the drying tube.

We wish to give our partners the tools to produce to the highest standard, while helping them to produce as cost effectively as possible with Q.C. tools throughout the factory.

test procedure

A sample of known weight is placed into a weighed combustion boat. The sample is then placed into a 600°C tube furnace under a dry oxygen free Nitrogen purge. After a set time the combustion boat with the burn residue is cooled under the nitrogen purge and weighed. The combustion boat is then placed into a 600°C muffle furnace to oxidize the carbon residue. When the carbon is completely oxidized the combustion boat is cooled and weighed.



Two oven solution

technical specifications

Temperature range	Up to 1.200° Celsius.
Controller	Programmable LCD display, easy-to-navigate menu configuration and the clear display design. Various menu languages can be selected for plain text information. By default, a USB interface is integrated for process documentation and to archive programs and settings.
Working tubes	Working tube of C 530 ceramic including two fiber plugs as standard equipment. Tube length 450 mm, Heated length 250mm. Length Constant temp. +/- 5 K: 80 mm3
Standards	Complying with ASTM D1603.
Gas supply	Gas supply system for non-flammable protective or reactive gas with shutoff valve and flow meter with regulator valve, piped and ready to connect
Accessories	Supplied with combustion tube, nozzles, porcelain sample cups, glass traps, U shaped drying tube for dessicant, flow meter, flow regulator, set of hose to connect furnace and the other parts. As described in ASTM D1603 fig. 1 Assembly of apparatus. Manual gassing system. Please note that Nitrogen gas cylinder is not part of the supply and should be sourced locally.
Dimensions	L434xW340xH508 mm—weight approx. 22 kg.
Usefull space for operation	L2,6 xW18,8 xH1,9 m approx.
Electrical supply	Single phased 230V - 50Hz. Connected load 1,6 kW.
Environment	The equipment is to be placed and operated in an environment with controlled temperature and humidity conditions. Temperature range should be from 16°C to 29°C and the relative humidity (RH %) from 10 and 85 % (non-condensing).
Facilities	The pre-established place for installation of the equipment must be fitted with the following: <ul style="list-style-type: none"> - Pre-purified nitrogen (grade 4.8), pressure 100 to 200 kPa (1 to 2 bar) - Electricity, according to the equipment data plate (see § 1.3) - Suction hood (industry standard).

purpose

The Carbon Black equipment has been designed and made according to the requirements of the ASTM D1603 standard and serves to determine the carbon black content of thermoplastic materials, such as polyethylene, polypropylene and polybutene.

The carbon black content of the material examined is carried out gravimetrically after pyrolysis in nitrogen stream.

The method of determination indicated by standards consists in calculating the difference in weight of the sample before and after treatment in the equipment.

This method is not applicable to materials that contain non volatile pigments or inorganic

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