

FURNACE FOR THE DETERMINATION OF THE CARBON BLACK CONTENT

System used for determination of the carbon black content of polyolefin compositions (polyethylene, polypropylene, polybutylene plastics).
Carbon black is added in order to increase products life as it absorbs ultraviolet radiations, which cause materials to degrade.
Manufacture of pipes and fittings involves the use of this filler, and its content can be measured both on the material for the manufacture and on finished products.
The determination is made gravimetrically after pyrolysis of the sample under nitrogen.

Apparatus is a tubular furnace equipped with several glassware and silicon tubes, for supply with nitrogen and air.
For the size of the furnace is recommended the insertion of a combustion boat for a time.

TECHNICAL DATASHEET



System includes :

-Electric furnace for combustion of material 1200° C maximum temperature controlled by double Pid microprocessor thermo regulator and two thermocouples (control of the sample and the furnace temperature).
Inner dimension of tubular chamber 450 mm length, 60 mm inner diameter.
Furnace accuracy 1 C° above 100°C

-Quartz test tube: 570 mm length, 29 mm diameter equipped with bored rubber stoppers (1 pc)
-Set of combustion boats with ring handle having dimensions mm 96 x 12 x 10 tot. 10 pcs.
-Positioning rod for the boats

-Two metal stands size 300 x 600 h mm to position the glassware

- "U" shaped drying tube and neoprene stoppers
-Assy for nitrogen purifying process (inlet):
1 washing gas bottle and metal clamp to seat the glassware

-Assy for nitrogen filtration (outlet):
2 washing gas bottles and metal clamps to seat the glassware
Dry ice bath 2000 ml
Support ring 115 mm with clamp
- Nitrogen Flow measuring device 1.7 ± 0.3 l/min with regulation valve

Technical features of the furnaces:

- Tube Heated lenght: 450 mm
- $\pm 5^\circ\text{C}$ temperature accuracy along 177 mm of the tube
- Power supply: 230V, single phase, 50/60Hz
- Dimensions (WxDxH): mm 500x340x570
- Weight: approx. 37 kg

Accessories for the test (not included):

- Silica gel, 1000 g pack
- Glass desiccator, 150 mm dia. with valve
- Porcelain table for desiccator
- Electronic analytical balance model g. 210 capacity, 0.1 mg accuracy

Besides nitrogen, pyrogalllic acid, solid carbon dioxide, trichloroethylene may be also required for the performance of the determination.
It is advisable to purchase all chemicals and reagents locally.

Reference standard

ASTM	D1603
ISO	6964

Code Description

11000015	Apparatus for carbon black content determination
40991075	Quartz tube (spare part) inner dia. 29 mm/ length 570 mm
40991077	Boat Ceramic with ring 96x12x10 mm(10pz)

