



MILESTONE
H E L P I N G
C H E M I S T S

FAST & REPRODUCIBLE CARBON BLACK DETERMINATION IN OLEFIN PLASTIC



| PYRO HIGH SAMPLE THROUGHPUT



SUPERIOR EASE OF USE

HIGH PRODUCTIVITY

SELF-CLOSING CRUCIBLES

GREAT REPRODUCIBILITY

EQUIVALENT TO ASTM D1603

MAXIMIZE EASE OF USE IN POLYMER QC LABS

The addition of carbon black to an elastomer can have a positive effect upon its mechanical, electrical and physical properties. Therefore, QC and process labs need to determine the exact concentration of carbon black to ensure product quality and monitor production costs. A rapid determination of the carbon black content allows quick feedback to production and for adjustment when required. A standard approach to this analysis is ASTM D1603, which provides gravimetric determination of carbon black content following a lengthy pyrolysis step under nitrogen. Milestone has developed a dedicated configuration to overcome the limitations of the traditional approach, such as the use of nitrogen, and to expedite the ashing process. The use of Milestone's PYRO muffle furnace (High Sample Throughput configuration) along with self-closing quartz crucibles and dedicated rack (20 positions) ensures fast determination and high reproducibility compared with the reference method, thus avoiding the use of

nitrogen. The vacuum generated during the release of combustion fumes ensures perfect sealing and an inert atmosphere the quartz crucibles, allowing for complete determination of the carbon black. The self-closing quartz crucibles and microwave heating allow for carbon black determination in only a few minutes, obtaining superior data reliability and reproducibility.



Self-closing quartz crucibles with 20 position rack

| | Polyethylene | | Polypropylene | |
|-------------------------------|------------------------|---------|------------------------|---------|
| | Carbon Black (%) (n=5) | RSD (%) | Carbon Black (%) (n=5) | RSD (%) |
| PYRO (High Sample Throughput) | 40.1 | 1.18 | 18.3 | 2.03 |
| ASTM D1603 | 40.1 | 1.06 | 18.4 | 1.85 |

Typical results

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