

Australian/New Zealand Standard™

Methods of test for plastics pipes and fittings

Method 27: Determination of toluene extract of carbon black

1 SCOPE

This Standard sets out a method for determining the toluene extract of carbon black.

2 APPARATUS

The following apparatus is required:

- (a) *Extraction thimbles*—double thickness, fat extracted.
- (b) *Condensor*—block time, spiral pattern.
- (c) *Extraction flask*—with three indentations at base of neck to support an extraction thimble.
- (d) *50 mL shallow weighing dish*—of borosilicate glass
- (e) *Drying oven*—capable of maintaining a temperature of $115 \pm 5^\circ\text{C}$.
- (f) *Desiccator*
- (g) *Weighing device*—to an accuracy of ± 0.001 grams

3 REAGENT

Toluene, sulfur free, which shall be of a recognized analytical reagent quality.

4 PROCEDURE

The procedure shall be as follows:

- (a) Weigh between 5g and 8g of palletized carbon black or 2g to 5g of compressed fluffy carbon black and place in a paper extraction thimble.
- (b) Measure 50 mL to 60 mL of toluene into the extraction flask.
- (c) Assemble the flask, condenser and thimble and extract for $22 \pm 1, -0$ h, at a rate so adjusted that the thimble remains 75% full of liquid at all times during the extraction.
- (d) Transfer the extract solution into a previously cleaned, dried, and weighed, 50 mL shallow glass weighing dish. Filter if necessary, rinse the extraction flask with toluene and add the rinse solution to the weighing dish.
- (e) Evaporate the total solution on a hotplate to a volume of 5 mL to 10 mL and then place in a drying oven at $115 \pm 5^\circ\text{C}$ until dry.
- (f) Cool in a desiccator to room temperature and weigh.

5 CALCULATION

Calculate the toluene extract of the material under test from the following equation using masses of an accuracy of ± 0.01 g:

$$\text{Percentage toluene extract} = \frac{\text{Mass of extract}}{\text{Mass of sample}} \times 100$$

6 REPORT

The following shall be reported:

- (a) Compound Batch details.
- (b) Percentage of toluene extract of carbon black.
- (c) Reference to this test method, i.e. AS/NZS 1462.27.