

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1014

DETERMINATION OF THE TRUE RELATIVE DENSITY,
THE APPARENT RELATIVE DENSITY
AND THE POROSITY OF COKE

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BRIEF HISTORY

The ISO Recommendation R 1014, *Determination of the true relative density, the apparent relative density and the porosity of coke*, was drawn up by Technical Committee ISO/TC 27, *Solid mineral fuels*, the Secretariat of which is held by the British Standards Institution (BSI).

Work on this question led, in 1966, to the adoption of two Draft ISO Recommendations.

In April 1967, these two Draft ISO Recommendations (Nos. 1147 and 1148) were circulated to all the ISO Member Bodies for enquiry. They were approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Greece	Romania
Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Israel	Switzerland
Canada	Japan	Turkey
Chile	Korea, Rep. of	U.A.R.
Czechoslovakia	Netherlands	United Kingdom
Denmark	New Zealand	U.S.A.
France	Poland	U.S.S.R.
Germany	Portugal	Yugoslavia

No Member Body opposed the approval of the Drafts.

The two Drafts were combined by the ISO/TC 27 Secretariat into a single document and submitted by correspondence to the ISO Council, which decided, in March 1969, to accept it as an ISO RECOMMENDATION.

DETERMINATION OF THE TRUE RELATIVE DENSITY,
THE APPARENT RELATIVE DENSITY
AND THE POROSITY OF COKE

1. TRUE RELATIVE DENSITY

1.1 Scope

Section 1 of this ISO Recommendation describes a method for the determination of the true relative density of coke, crushed to 0.2 mm, in relation to water.

1.2 Principle

The mass of water displaced by a known mass of dry coke, ground to pass a 0.2 mm sieve, is determined in a density bottle. Air is displaced by boiling during the determination. Air-free distilled water is specified, as the use of organic liquids, or of water with wetting agents added, has been found to give variable results. Thermostatic control of the temperature is essential since a difference of 1 °C can cause an error of about 0.012 in the result.

1.3 Apparatus

1.3.1 *Density bottle*, 50 ml capacity.

1.3.2 *Water bath*, with stirrer, thermostatically controlled to maintain a desired temperature t °C to within ± 1 °C.

1.3.3 *Two wash bottles*, each containing about 50 ml of air-free distilled water. One wash bottle is kept hot (80 to 90 °C) and the other is left in the water bath (see clause 1.3.2).

1.3.4 *Reflux air condenser* : a glass tube about 1 m long, of the same external diameter as the neck of the density bottle, with a short length of rubber tubing for attaching it to the latter.

1.3.5 *Glycerol bath* : a suitable vessel in which sufficient glycerol can be heated for the lower two-thirds of the density bottle to be immersed.

1.3.6 *Balance*, accurate to 0.1 mg.