

ISO

transcribed

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 901

ALUMINIUM OXIDE PRIMARILY USED
FOR THE PRODUCTION OF ALUMINIUM
DETERMINATION OF ABSOLUTE DENSITY
PYKNOMETER METHOD

1st EDITION

December 1968

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BRIEF HISTORY

The ISO Recommendation R 901, *Aluminium oxide primarily used for the production of aluminium – Determination of absolute density – Pyknometer method*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question by the Technical Committee began in 1962 and led, in 1966, to the adoption of a Draft ISO Recommendation.

In May 1967, this Draft ISO Recommendation (No. 1171) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Bulgaria	Japan	Sweden
Canada	Korea, Dem. P. Rep. of	Switzerland
Czechoslovakia	Korea, Rep. of	Thailand
France	Netherlands	Turkey
Germany	New Zealand	U.A.R.
Hungary	Norway	United Kingdom
India	Poland	U.S.A.
Iran	Portugal	U.S.S.R.
Ireland	Romania	Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1968, to accept it as an ISO RECOMMENDATION.

**ALUMINIUM OXIDE PRIMARILY USED
FOR THE PRODUCTION OF ALUMINIUM
DETERMINATION OF ABSOLUTE DENSITY
PYKNOMETER METHOD**

1. SCOPE

This ISO Recommendation describes a method for the determination of the absolute density of aluminium oxide primarily used for the production of aluminium.

2. PRINCIPLE

Determination by a pyknometer method of the absolute density of aluminium oxide after complete degasification.

3. REAGENTS

3.1 *Xylene*, $d = 0.860$ to 0.865 , distilling between 138 and 144 °C (see clause 7.1).

3.2 *Ethanol*, 95 % (V/V) solution, $d = 0.81$ approximately.

3.3 *Diethyl ether*, $d = 0.715$ approximately.

4. APPARATUS

Ordinary laboratory apparatus and

4.1 *Pyknometer* (see Fig. 1) consisting of

- (a) *flask* (A), approximately 25 ml capacity, fitted with a side arm with a ground-glass cover (F);
- (b) *thermometer* (B), covering the range 15 to 25 °C graduated in intervals of 0.1 °C, which can be fitted to the flask by a ground-glass joint.

4.2 *Degassing and filling apparatus*, (see Fig. 2), consisting of a tap funnel (C) of about 50 ml capacity, fitted with a side arm, with a tap (D) for connecting to a vacuum pump. This can be fitted to the pyknometer flask (A) by means of a conical ground-glass joint (E).

4.3 *Water bath*, controlled at a temperature of 20 ± 0.1 °C.

4.4 *Vacuum pump*, capable of giving a vacuum below 10 mmHg.

4.5 *Mercury manometer*.