

British Standard Methods of sampling and test for

Carbonaceous materials used in aluminium manufacture

Part 1. Electrode pitch

Section 1.4 Determination of content of toluene-insoluble material

[ISO title: Carbonaceous materials for the production of aluminium — Pitch for electrodes — Determination of content of toluene-insoluble material]

Méthodes d'échantillonnage et d'essai des matières carbonées utilisées dans la production de l'aluminium

Partie 1. Brai pour électrodes

Section 1.4-Détermination du taux des matières insolubles dans le toluène

Probeentnahme- und Prüfmethode für kohlehaltige Materialien für die Aluminiumherstellung

Teil 1. Elektrodenpech

Abschnitt 1.4 Bestimmung des Gehalts an toluolunlöslichen Stoffen

National foreword

This British Standard has been prepared under the direction of the Chemicals Standards Committee to provide methods of sampling and test for carbonaceous materials used in the production of aluminium. The standard will be published in two Parts, each Part being divided into Sections. The two Parts are Part 1 'Electrode pitch' and Part 2 'Electrode coke'.

Initially, it is proposed that Part 1 will comprise the following Sections:

Section	Subject	Identical with
1.1	Sampling	ISO 6257
1.2	Water content (Dean and Stark method)	ISO 5939
1.3	Softening point (Ring and ball method)	ISO 5940
1.4	Content of toluene-insoluble material	ISO 6376
1.5	Content of quinoline-insoluble material	ISO 6791*
1.6	Coking value	ISO *
1.7	Density	ISO *
1.8	Ash content	ISO *
1.9	Sulphur content	ISO *

Other international methods of test for electrode pitch are under consideration and, subject to approval by the United Kingdom, will be published as they become available.

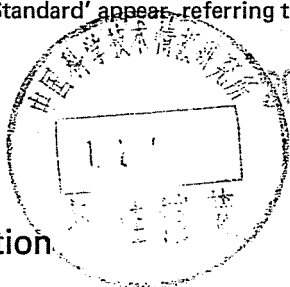
This Section is identical with ISO 6376-1980 'Carbonaceous materials for the production of aluminium — Pitch for electrodes — Determination of content of toluene-insoluble material', published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'British Standard'.

* In course of preparation.



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Cross-references

International standard	Corresponding British Standard
ISO 6257-1980	BS 6043 Methods of sampling and test for carbonaceous materials used in aluminium manufacture Part 1 Electrode pitch Section 1.1 : 1981 Sampling (Identical)

The Technical Committee has reviewed the provisions of ISO 383, ISO 565 and ISO 4793, to which reference is made in clauses 5 and 6, and has decided that they are acceptable for use in conjunction with this standard.

Related British Standards for ISO 383, ISO 565 and ISO 4793 are BS 572, BS 410 and BS 1752 respectively. ISO 4797, to which reference is made in 5.1, is in course of preparation and, subject to approval by the UK, will be published as a British Standard without deviation.

Additional information. This standard prescribes methods of test only, and should not be used or quoted as a specification defining limits of purity. Reference to this Section should state that the method of test used is in accordance with BS 6043 : Part 1 : Section 1.4 : 1981.

1 Scope and field of application

This International Standard specifies a gravimetric method for the determination of the content of toluene-insoluble material in pitch used for the production of aluminium.

NOTE — The content of toluene-insoluble material is commonly called "sum of resins $\alpha + \beta$ ".

2 Reference

ISO 6257, *Carbonaceous materials for the production of aluminium — Pitch for electrodes — Sampling.*

3 Principle

Determination by weighing of the fraction of a test portion of pitch which is insoluble in toluene after boiling for a specified period.

4 Reagents and materials

During the analysis, use only reagents of recognized analytical grade.

4.1 Toluene.

4.2 Acetone.

5 Apparatus

Ordinary laboratory apparatus and

5.1 Conical flask, of capacity 500 ml, of borosilicate glass, fitted with a ground glass socket (see ISO 4797).

5.2 Reflux condenser, effective length 300 mm, having a ground glass cone (see ISO 383) at its lower end, by means of which it can be fitted to the socket of the conical flask (5.1).

5.3 Filter crucible, of glass, of capacity about 30 ml, fitted with a sintered glass disc (see ISO 4793) of porosity grade P16 (pore size index 10 to 16 μm) and having the following approximate principal dimensions :

disc diameter : 30 mm

height (disc to upper rim) : 35 mm.

5.4 Electric oven, capable of being controlled at a temperature between 105 and 110 °C.

6 Sampling

See ISO 6257.

In the case of hard pitches, grind the sample so that it passes through a sieve of nominal aperture size 200 μm (see ISO 565).

In the case of soft pitches, use the sample as received.

7 Procedure

WARNING — Toluene is toxic and highly flammable. Carry out all operations involving its use in an efficiently ventilated fume cupboard.

7.1 Test portion

Weigh, to the nearest 0,001 g, approximately 1 g of the sample (see clause 6).