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Carbonaceous materials used in the production of aluminium — Cold-ramming pastes —Determination of effective binder content and aggregate content by extraction with quinoline, and determination of aggregate size distribution

Produits carbonés utilisés pour la production de l'aluminium — Pâtes de brasquage à froid — Détermination de la teneur effective en liant et en aggrégats par extraction à la quinoléine, et détermination de la granulométrie

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

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An ISO/PAS or ISO/TS is reviewed every three years with a view to deciding whether it can be transformed into an International Standard.

Attention is drawn to the possibility that some of the elements of ISO/TS 14423 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 14423 was prepared by Technical Committee ISO/TC 47, *Chemistry*, Subcommittee SC 7, *Aluminium oxide, cryolite, aluminium fluoride, sodium fluoride, carbonaceous products for the aluminium industry.*

Introduction

In order to determine the particle-size distribution of the aggregate used in cold-ramming pastes, it is necessary to obtain the aggregate in a binder-free state. The most practicable way to achieve this is by extraction of the binder by a suitable solvent, and the most effective common solvent for coal-tar and bituminous binders is quinoline. Most coal tars are not totally soluble in quinoline, but have a small content of insoluble matter which principally comprises infusible solid carbonaceous particles smaller than approximately 50 μm. This insoluble matter is effectively part of the solid aggregate of the cold-ramming paste and is measured as such by this method. The effective binder is defined as that proportion of the product which is soluble in quinoline.

Although quinoline is the most effective common solvent for the present purpose, it has the disadvantage of being expensive and of having a high boiling point which makes the removal of the last traces from the extracted residue difficult by normal drying processes. However, when the most complete separation of the binder from the aggregate is required, e.g. for referee purposes, quinoline is the solvent of choice, and the method given in this Technical Specification should be employed.

NOTE The procedure described in this Technical Specification utilizes dichloromethane, but only to remove residual traces of quinoline solvent from filters prior to oven drying.