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International Standard 8723

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Carbonaceous materials for the production of aluminium — Calcined coke — Determination of oil content — Method by solvent extraction

Produits carbonés utilisés pour la production de l'aluminium — Coke calciné — Détermination de la teneur en huile — Méthode par extraction à l'aide d'un solvant

First edition — 1986-12-15

UDC 665.777 : 669.713 : 543.722

Ref. No. ISO 8723-1986 (E)

Descriptors : industrial products, coke, tests, determination of content, oils, extraction methods, aluminium, production.

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8723 was prepared by Technical Committee ISO/TC 47, *Chemistry*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Carbonaceous materials for the production of aluminium — Calcined coke — Determination of oil content — Method by solvent extraction

0 Introduction

Calcined coke may be treated with different types of oil in order to limit the formation of a dust cloud during loading and transportation. The method specified in this International Standard permits the determination of the loss of mass in calcined coke after elimination of oil adhering to the particles, by extraction with a suitable solvent.

1 Scope and field of application

This International Standard specifies a method for the determination, by solvent extraction, of the oil content of calcined coke in the production of aluminium.

2 References

ISO 5725, *Precision of test methods — Determination of repeatability and reproducibility by inter-laboratory tests.*

ISO 6375, *Carbonaceous materials for the production of aluminium — Cokes for electrodes — Sampling.*

3 Principle

Treatment of a test portion in an extraction apparatus with dichloromethane (methylene chloride) to remove the oil, and determination of oil removed in terms of the loss of mass of the test portion.

NOTE — The small quantities of water which may still be present in the dried test portion are considered to be oil.

4 Solvent

Dichloromethane (methylene chloride), of purity at least 99 %, boiling point 39 to 40 °C.

WARNING — Dangerous when inhaled. Avoid contact with the skin. Carry out work in a fume cupboard.

NOTE — The methylene chloride used may be recovered by filtration on activated carbon or by distillation. However, the presence of a

yellow colour after distillation indicates the presence of hydrochloric acid and, in this case, the product should be discarded.

5 Apparatus

Ordinary laboratory apparatus and

5.1 Electric oven, capable of being controlled at 110 ± 2 °C.

5.2 Extraction apparatus, as shown in the figure, and comprising the following items:

5.2.1 Cylindrical glass funnel, of capacity approximately 1 000 ml, fitted with a glass fritted disk of porosity P 250 (pore diameter between 160 and 250 μm — see ISO 4793) of effective diameter 45 to 50 mm. The fritted disk is fitted with an internal tube to permit evacuation of air.

5.2.2 Glass extraction crucible, vacuum-resistant, of inner effective diameter 45 to 50 mm, fitted with a glass fritted disk of porosity P 4 (pore diameter between 1,6 and 4 μm — see ISO 4793).

5.2.3 Glass adapter, provided with a 4 mm polytetrafluorethylene (PTFE) stopcock.

5.2.4 Glass Büchner flask, of capacity approximately 2 000 ml.

5.3 Glass jar, for supporting the crucible (5.2.2) during drying and weighing.

5.4 PTFE cuffs, for sealing joints.

5.5 Vacuum device (water pump for example).

5.6 Drying device, for drying the crucible (5.2.2) and jar (5.3), containing silica gel or activated alumina.