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I.S. EN ISO 3907:2009

Hardmetals - Determination of total carbon - Gravimetric method (ISO 3907:2009)

I.S. EN ISO 3907:2009

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Hardmetals - Determination of total carbon - Gravimetric method (ISO 3907:2009)

Métaux-durs - Dosage du carbone total - Méthode gravimétrique (ISO 3907:2009)

Hartmetalle - Bestimmung des Gesamtkohlenstoff-Gehaltes - Gravimetrisches Verfahren (ISO 3907:2009)

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Foreword

This document (EN ISO 3907:2009) has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2010, and conflicting national standards shall be withdrawn at the latest by April 2010.

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Endorsement notice

The text of ISO 3907:2009 has been approved by CEN as a EN ISO 3907:2009 without any modification.

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I.S. EN ISO 3907:2009

INTERNATIONAL STANDARD

ISO 3907

Third edition
2009-10-01

Hardmetals — Determination of total carbon — Gravimetric method

Métaux-durs — Dosage du carbone total — Méthode gravimétrique

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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.

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ISO 3907 was prepared by Technical Committee ISO/TC 119, *Powder metallurgy*, Subcommittee SC 4, *Sampling and testing methods for hardmetal*.

This third edition cancels and replaces the second edition (ISO 3907:1985), which has been technically revised.

Hardmetals — Determination of total carbon — Gravimetric method

1 Scope

This International Standard specifies a gravimetric method for the determination of the mass fraction of total carbon in carbides and hardmetals.

This method is applicable to

— carbides of chromium, hafnium, molybdenum, niobium, tantalum, titanium, vanadium, tungsten and zirconium,

— mixtures of these carbides and binder metals, free of lubricant,

— all grade of presintered or sintered hardmetals, produced from these carbides, and

having a mass fraction of total carbon exceeding 4 %.

2 Principle

Oxidation of carbon to carbon dioxide at a high temperature in a stream of pure oxygen, with the addition of a flux, if necessary.

Absorption of the carbon dioxide, carried by oxygen, by Ascarite[1)] in a tared bulb. Determination of the increase in mass of the Ascarite[1)] which corresponds to the quantity of carbon dioxide formed.

$$C + O_2 \rightarrow CO_2$$

$$2\,NaOH + CO_2 \rightarrow Na_2CO_3 + H_2O$$

3 Reagents

During the analysis, use only reagents of recognized analytical grade, and only distilled water or water of equivalent purity.

3.1 Oxygen, with a limitation of carbon-containing impurities of $\leqslant$ 0,6 ml of carbon per cubic metre of oxygen.

1) Ascarite is the trade name of a product supplied by Arthur H. Thomas Co. This information is given for the convenience of users of the International Standard and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.