

SVENSK STANDARD

SS-EN ISO 3907:2009

Fastställt/Approved: 2009-10-19

Publicerad/Published: 2009-11-10 (Korrigerad/Corrected March 2010)

Utgåva/Edition: 1

Språk/Language: engelska/English

ICS: 77.040.10; 77.160

Hårdmetall – Bestämning av totalt kolinnehåll – Gravimetrisk metod (ISO 3907:2009)

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

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-71494>

Hitta rätt produkt och ett leveranssätt som passar dig

Standarder

Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster

Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på.

På så sätt är du säker på att du alltid arbetar efter rätt utgåva.

e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt

Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter

Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement".

Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt

Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards

By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services

Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.

e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery

You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products

We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements.

Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project

You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Europastandarden EN ISO 3907:2009 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 3907:2009.

Denna standard ersätter SS-EN 23907, utgåva 1.

I denna korrigerade version är den saknade formeln under punkt 7.1 tillagd.

The European Standard EN ISO 3907:2009 has the status of a Swedish Standard. This document contains the official English version of EN ISO 3907:2009.

This standard supersedes the Swedish Standard SS-EN 23907, edition 1.

In this corrected version, the missing equation in 7.1 has been added.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.
E-mail: sis.sales@sis.se Internet: www.sis.se

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 3907

October 2009

ICS 77.160

Supersedes EN 23907:1993

English Version

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)

This European Standard was approved by CEN on 29 September 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 23907:1993.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

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

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

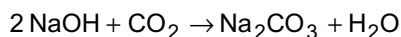
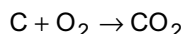
- carbides of chromium, hafnium, molybdenum, niobium, tantalum, titanium, vanadium, tungsten and zirconium,
- mixtures of these carbides and binder metals, free of lubricant,
- all grade of presintered or sintered hardmetals, produced from these carbides, and

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 Ascarite¹⁾ in a tared bulb. Determination of the increase in mass of the Ascarite¹⁾ which corresponds to the quantity of carbon dioxide formed.



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 $\leq 0,6$ 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.

3.2 Magnesium perchlorate, anhydrous.

CAUTION — To prevent the possibility of explosion, contact of this reagent with organic materials must be avoided, especially when discarding it.

3.3 Flux, for example tin metal, copper metal or oxide, iron metal.

3.4 Ascarite¹⁾.

4 Apparatus

Ordinary laboratory apparatus and the following.

4.1 **Apparatus**, consisting of an electric furnace with a combustion tube, a purification train and a system to absorb carbon dioxide. If it is necessary to obtain oxygen of adequate purity, an oxygen purification train may also be used.

Successive parts of the apparatus shall be joined together with connecting tubes forming an airtight seal.

The apparatus is shown schematically in Figure 1.

4.1.1 **Source of oxygen** (3.1), with a pressure-regulating valve.

4.1.2 Flow meter.

4.1.3 **Electric furnace**, capable of operation at up to 1 350 °C, with a suitable device for temperature control.

4.1.4 **Combustion tube**, made of a non-porous refractory material. The internal diameter of the tube should be 18 mm to 30 mm and its length should be at least 650 mm, so that the ends of the tube do not reach a temperature higher than 60 °C during the operation.

4.1.5 **Boat**, made of a refractory material, pretreated in an oxygen stream at the test temperature for 10 min or alternatively at 800 °C to 1 000 °C for 1 h.

The boat shall be of suitable dimensions, for example of length 80 mm to 100 mm, width 12 mm to 14 mm and depth 8 mm to 9 mm.

The pretreated boats shall be kept in a desiccator. The ground surfaces of the desiccator and its lid shall not be greased.

4.1.6 **Plug of silica wool**.

4.1.7 **Drying bulb**, containing anhydrous magnesium perchlorate (3.2).

4.1.8 **Absorption bulbs**, containing Ascarite¹⁾ (3.4) and a small amount of anhydrous magnesium perchlorate (3.2).

An example of an absorption bulb is shown in Figure 2.

4.1.9 **Additional absorption bulb**, facing the opposite way to the absorption bulb in 4.1.8 (see Figure 1, item reference 8) to avoid introduction of carbon dioxide and moisture from the air.

4.2 **Hook**, made from heat-resisting metal wire with a mass fraction of carbon less than 0,05 %. Its diameter should be approximately 3 mm and its length should be 500 mm to 600 mm.