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Powder metallurgy - Hot isostatic pressing - Argon detection using gas chromatography and mass spectrometry techniques (ISO 5842:2022)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/23

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EUROPEAN STANDARD

EN ISO 5842

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Powder metallurgy - Hot isostatic pressing - Argon detection using gas chromatography and mass spectrometry techniques (ISO 5842:2022)

Métallurgie des poudres - Pressage isostatique à chaud
- Détection de l'argon par des techniques de
chromatographie en phase gazeuse et de spectrométrie
de masse (ISO 5842:2022)

Pulvermetallurgie - Heiisostatisches Pressen -
Nachweis von Argon mittels Gaschromatographie und
massenspektrometrischer Techniken (ISO 5842:2022)

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EN ISO 5842:2023 (E)

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European foreword

The text of ISO 5842:2022 has been prepared by Technical Committee ISO/TC 119 "Powder metallurgy" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 5842:2023 by CCMC.

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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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INTERNATIONAL STANDARD

ISO 5842

First edition
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Powder metallurgy — Hot isostatic pressing — Argon detection using gas chromatography and mass spectrometry techniques



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 119 *Powder metallurgy*, Subcommittee SC 3, *Sampling and testing methods for sintered metal materials (excluding hardmetals)*.

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Introduction

It is essential to detect argon in powder metallurgy hot isostatic pressing (PM HIP) material in order to ensure the desired performance of the PM HIP component. Argon from the production of powder can remain in the powder grains. Argon from the powder filling processes can remain in the voids between powder grains and become trapped during consolidation. Can imperfections can result in ingress of argon from the HIP chamber and potentially introduce, or increase the level of, argon.

Argon in the resulting metal powder produced component can be detected using the techniques included in this document

Powder metallurgy — Hot isostatic pressing — Argon detection using gas chromatography and mass spectrometry techniques

IMPORTANT — It is the responsibility of the purchaser of the PM HIP service to specify in the purchase order if an argon detection test is needed. If so, the agreed argon limit shall be specified.

1 Scope

This document specifies a gas chromatography and a mass spectrometry method of detecting the presence of argon in metal powder produced components, consolidated by hot isostatic pressing.

This document specifies the calibration and functionality test for the equipment covered. It also specifies methods for sampling, sample preparation and sample test procedure of PM HIP components to detect argon presence.

Components produced by additive manufacturing are not covered in this document.

2 Normative references

There are no normative references in this document.

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