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AS ISO 5832.5:2015

Australian STANDARD

Implants for surgery—Metallic materials

Part 5: Wrought cobalt-chromium-tungsten-nickel alloy

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- Australian Dental Association
- Australian Society for Biomaterials
- Medical Technology Association of Australia
- Neurosurgical Society of Australasia
- Royal Australasian College of Surgeons
- Royal Perth Hospital
- Therapeutic Goods Administration
- University of Sydney

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Australian Standard®

Implants for surgery—Metallic materials

Part 5: Wrought cobalt-chromium-tungsten-nickel alloy

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PREFACE

This Standard was prepared by the Standards Australia Committee HE-012, Surgical Implants, to supersede AS 2320.5—2003, *Implants for surgery—Metallic materials*, Part 5: *Wrought cobalt-chromium-tungsten-nickel alloy*.

The objective of this Standard is to specify the characteristics of, and corresponding test methods for, wrought cobalt-chromium-tungsten-nickel alloy for use in the manufacture of surgical implants. The objective of the revision is to adopt the current edition of ISO 5832-5.

This Standard is identical with, and has been reproduced from ISO 5832-5:2005, *Implants for surgery—Metallic materials*, Part 5: *Wrought cobalt-chromium-tungsten-nickel alloy*.

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text ‘this part of ISO 5832’ should read ‘this Australian Standard’.

(b) A full point substitutes for a comma when referring to a decimal marker.

None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

INTRODUCTION

No known surgical implant material has ever been shown to be completely free of adverse reactions in the human body. However, long-term clinical experience of the use of the material referred to in this part of ISO 5832 has shown that an acceptable level of biological response can be expected, if the material is used in appropriate applications.

AUSTRALIAN STANDARD

Implants for surgery—Metallic materials

Part 5:
Wrought cobalt-chromium-tungsten-nickel alloy

1 Scope

This part of ISO 5832 specifies the characteristics of, and corresponding test methods for, wrought cobalt-chromium-tungsten-nickel alloy for use in the manufacture of surgical implants.

NOTE The tensile properties of a sample obtained from a finished product made of this alloy might not necessarily comply with those specified in this part of ISO 5832.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 643, *Steels — Micrographic determination of the apparent grain size*

ISO 4967:1998, *Steel — Determination of content of nonmetallic inclusions — Micrographic method using standard diagrams*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

3 Chemical composition

The analysis of a representative sample of the alloy when determined as specified in Clause 6 shall comply with the chemical composition specified in Table 1.

Table 1 — Chemical composition

Element	Compositional limits mass fraction %
Chromium	19 to 21
Tungsten	14 to 16
Nickel	9 to 11
Iron	$\leqslant$ 3
Carbon	$\leqslant$ 0,15
Silicon	$\leqslant$ 1
Manganese	$\leqslant$ 2
Sulfur	0,03
Phosphorus	0,04
Cobalt	Balance