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NATIONAL STANDARD
OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 28485-2012

**Coated Adornment - Detection of Nickel
Release - Method for Simulation of Wear
and Corrosion**

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Table of Contents

Foreword	3
1 Scope	4
2 Normative References.....	4
3 Principle	4
4 Reagents and Materials.....	4
5 Procedure.....	6
6 Test Report	8
Appendix A.....	9
Appendix B.....	10
Appendix C.....	11

Foreword

This standard was drafted according to the rules specified in GB/T 1.1-2009.

This standard uses redrafting method to modify and adopt EN 12472:2005+A1:2009 "Method for the Simulation of Wear and Corrosion for the Detection of Nickel Release from Coated Samples" (English version).

Compared with EN 12472:2005+A1:2009, there are some adjustments in the structure of this standard. The comparison of clause numbers of this standard and EN 12472:2005+A1:2009 is listed in Appendix A.

The technical different clauses between this standard and EN 12472:2005+A1:2009 are indicated by a single vertical line to the page margin. Appendix B provides the corresponding technical differences.

Attention is drawn to the possibility that some of the elements of this document may be subject to patent rights. The issuance organization shall not be held responsible for identifying any or all such patent rights.

This standard was proposed by the China National Light Industry Council.

This standard shall be under the jurisdiction of the National Ornaments Technical Committee for Standardization (SAC/TC 256).

Drafting organizations of this standard: National Jewelry Quality Supervision and Inspection Center, Guangdong Entry-Exit Inspection and Quarantine Bureau, Inspection and Quarantine Technology Center, Shandong Entry-Exit Inspection and Quarantine Bureau, Inspection and Quarantine Technology Center, and Beijing Jewellery Quality Supervision and Inspection Center.

Chief drafting staffs of this standard: Li Suqing, Li Yuou, Huang Lina, Liu Chonghua, Xing Li, Gao Xuhui, and Li Wujun.

Coated Adornment - Detection of Nickel Release - Method for Simulation of Wear and Corrosion

1 Scope

This standard specifies the method of pre-adopted wear and corrosion, in order to measure the nickel release from non-nickel coating adornment.

This standard is applicable to non-nickel coating adornment that contacts with the skin in long-term.

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 amendment) applies.

GB/T 19719 Jewellery - Determination of the Release of Nickel - Method of Spectrometry

3 Principle

The sample to be tested are exposed to a corrosive environment, then it is placed into a barrel together with a wear-medium. The barrel is rotated so as the test sample is worn by the wear-medium. The sample is then tested for nickel release in accordance with GB/T 19719.

4 Reagents and Materials

Except specially indicated, all reagents and materials that may contact with samples shall not contain nickel. And all reagents shall be analytical grade or better grade.

4.1 Corrosion

4.1.1 Container

Container with a lid and with a device to make the test sample to be suspendable. All parts shall be made of inert material (e.g. glass or plastic).

4.1.2 Corrosive medium

Dissolve 50g of DL-lactic acid (purity >85%) and 100g of sodium chloride into 1000ml of de-ionized water.

Appendix C

(Informative)

Examples of How to Attach Different Types of Samples

C.1 General

A retaining assembly is used to mount the test samples. This is inserted into the hexagonal drum.

Materials which have been found suitable for fixing test samples in the retaining assembly are silicone rubber sheet, silicone rubber straps, and nylon lines of different dimensions.

C.2 Attachment of samples with only one side in contact with the skin

Samples having one surface that can come into prolonged contact with the skin, and another surface that is less likely to come into prolonged contact with the skin, should be mounted so that they are fixed and cannot move inside the barrel. Examples are spectacle frames and some watch straps. The test samples should be fixed so that they are positioned with the surface that can come into contact with the skin turned towards the rotation axis, which is the centre of the barrel, and with the other surface turned towards the wall of the barrel. If the samples are relatively long, for example, spectacles or watch straps, then their long axis should, if possible, be fitted parallel to the barrel axis. Samples for wear should be positioned between 10mm and 30mm from the barrel walls.

C.3 Spectacle frames

GB/T 14214 (ISO 12870:2004, MOD) gives details on which parts of spectacle frames should be tested.

The assembly consists of a threaded rod which carries three metal hexagonal plates - see Figure C.1. The end plate (A) is drilled part way through with holes of nominal diameter 1.5 mm, or as appropriate, to take the ends of the tips of the sides. The next plate (B - see Figure C.2) is perforated with holes of nominal diameter 5mm, or as appropriate, to take the joint ends of the sides, together with an aperture of 40 mm nominal diameter to act as a filling hole for the abrasive mixture. A silicone rubber sheet with small holes matching the position of those in plate (B) holds the sides firmly to prevent them from rotating in the assembly. A second, un-perforated, silicone sheet presses the sides into plate (A). The final plate (C) is un-drilled apart from the hole for the threaded rod. A threaded nut on the inside of the last two plates holds them the required distance from plate A, while a second nut on the outside clamps the assembly together. The sides should be mounted with the inside surface towards the axis of the assembly.

Spectacle fronts should be mounted so that one of the lugs is inserted into the holes in plate (B). It may be necessary to straighten the lug or to twist the rim immediately either side of the

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