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CIBJO/PRECIOUS METALS

CIBJO/Precious Metals Commission

THE PRECIOUS METALS BOOK

Precious Metals – Terminology & Classification

Foreword

CIBJO is the French acronym for the **C**onfederation **I**nternationale de la **B**ijouterie, **J**oaillerie, **O**rfevrerie, des Diamants, Perles et Pierres, which translates as the International Confederation of Jewellery, Silverware, Diamonds, Pearls and Stones (normally shortened to the International Jewellery Confederation). Founded in 1926 as BIBOAH, a European organisation whose mission was to represent and advance the interests of the jewellery trade in Europe, it was reorganised in 1961 and renamed CIBJO. Today, CIBJO, which is domiciled in Switzerland, has members from countries representing all five continents of the world. CIBJO printed its first deliberations on terminology and trade practices in 1968.

It is the task of CIBJO to record the accepted trade practices and nomenclature for the industry throughout the world. The records of the trade practices complement existing fair trade legislation of a nation or in the absence of relevant national laws they can be considered as trading standards. In countries where laws or norms exist, which conflict with the laws, norms or trade practices in other countries, CIBJO will support the national trade organisations to prevent trade barriers developing. The purpose of CIBJO is to encourage harmonisation, promote international co-operation within the jewellery industry, and to consider issues which are of concern to the trade worldwide. Foremost amongst these the aim is to protect consumer confidence in the industry. CIBJO pursues all of these objectives through informed deliberation and by reaching decisions in accordance with its Statutes. CIBJO relies upon the initiative of its member national organisations to support and implement its decisions, and to protect the trust of the public in the industry.

The work of CIBJO is accomplished through three independent sectors within the Confederation:

Sector 1 - Jewellery manufacturing, technology and precious metals

Sector 2 - Jewellery distribution

Sector 3 - Gem Materials – cutting, trade and laboratories

The national umbrella organisation for each country represents, in principle, all the national trade organisations involved in the three sectors mentioned above. This democratic structure, which has contributed to CIBJO's world-wide recognition, provides an international forum for the trade to collectively draw attention to issues and implement resulting decisions. The appointed delegates attend an annual CIBJO Congress.

Intersectoral Commissions consider detailed issues. At present there are the following Commissions:

Coloured Stone

Diamond

Ethics

Gemmological

Pearl

Marketing & Education

Precious Metals

World Jewellers Vigilance

The CIBJO Executive Committee must approve any decisions reached at Sector and Commission level by a majority of voting delegates. The Commission for Precious Metals, Diamond, Gemstones and Pearls have collated the guidelines, which present the accepted trading practices for applying descriptions to these materials. It is in the interest of all those involved to be aware of them. Furthermore it is our mutual responsibility to support these recommendations, which concern all professional people connected with precious metals, diamonds, gemstones and pearls.

CIBJO Secretariat

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Introduction

This CIBJO Precious Metal Standard is designed to assist all those involved in the purchase or sale of **platinum, gold, palladium and silver jewellery, flatware and hollow-ware**. The standard is non-judgmental and the definitions and clauses contained herein are formatted and worded only to ensure that each precious metal item bought or sold is done so with clarity and honesty. The stability of the market place depends upon the use of the proper nomenclature and the declaration of all known facts which ensure a fully informed purchase or sale.

In the case of precious metals it is important that those involved in sales or purchases know the fineness in parts per thousand by weight of the precious metal in the alloy being traded.

The Scope (1) of the Standard/rules is set out, as are the Normative References (2). The Terms and Definitions (5) are expansive and are extensively cross referenced throughout the Normative Clauses (4), Annex and Tables. It is important that the reader refers to the relevant Terms and Definitions when consulting each Normative Clause.

President the CIBJO Precious Metal Commission

April 2008

PRECIOUS METALS – TERMINOLOGY AND CLASSIFICATION

1. Scope

The terminology and classification of precious metals are established with reference to commercial usage, in conformity with the classifications and practices of the international precious metals and jewellery trades. The terminology and classifications of precious metals as set out herein shall be used by all traders participating as members of CIBJO member organisations within all member nations.

Note: Exceptions may be made if the National Law of a particular member nation conflicts with the clauses herein. National Law always supersedes this CIBJO standard.

2. Normative references

The Gemstone Book, CIBJO (International Confederation of Jewellery, Silverware, Diamonds, Pearls and Stones), the World Jewellery Con-Federation, Piazzale Carlo Magno, 1, 20149 Milano, Italy. cibjo@cibjo.org

The Diamond Book, CIBJO (International Confederation of Jewellery, Silverware, Diamonds, Pearls and Stones), the World Jewellery Con-Federation, Piazzale Carlo Magno, 1, 20149 Milano, Italy. cibjo@cibjo.org.

The Pearl Book, CIBJO (International Confederation of Jewellery, Silverware, Diamonds, Pearls and Stones), the World Jewellery Con-Federation, Piazzale Carlo Magno, 1, 20149 Milano, Italy. cibjo@cibjo.org.

3. Classification of materials.

4. Normative Clauses.

5. Terms and definitions.

For the purposes of these CIBJO standard/rules, the following terms and definitions apply;

5.1. Precious metals

Precious Metals are platinum (Pt), gold (Au), palladium (Pd) and silver (Ag) in their pure state.

5.2. Precious metal alloy

A precious metal alloy is a solid solution containing at least one precious metal; refer to 5.10.

5.3. Precious metal article

A precious metal article is any item of jewellery, or goldsmith's or silversmith's flatware or hollow-ware, made entirely or in part from precious metals and their alloys.

5.4. Fineness

The fineness is the content of the named precious metals measured in terms of parts per thousand by weight of alloy.

5.5. Standard of fineness

The standard of fineness is the minimum content of the named precious metals measured in terms of parts per thousand by weight of alloy.

5.6. Precious metal coating/plating

A precious metal coating or plating is a layer of precious metal or of precious metal alloy applied to all, or part of a precious metal article e.g. by chemical, electrochemical, mechanical or physical process. See also 5.16.

5.7. Base metals

Base metals are all metals except platinum, gold, palladium, and silver.

5.8. Weight of Precious Metal

The weight of a precious metal item is always expressed in grams to two decimal places.

5.9. Colour of Precious Metals

Gold – Yellow, Red, Rose, Green and White
Platinum – White
Palladium – White
Silver - White

5.10. This CIBJO standard does not apply to:-

Articles made of alloys of fineness less than 850 for platinum, 333 for gold, 500 for palladium and 800 for silver. Unless alloys meet these minimum finenesses, articles cannot be described as platinum, gold, palladium or silver.

5.11. Fineness' applied under this CIBJO standard

For platinum:	999, 950, 900, 850
For gold	999, 986, 916, 750, 585, 416, 375, 333
For palladium	999, 950, 500
For silver	999, 925, 835, 830, 800

Note: Other standards of fineness may be recognised by the Precious Metals Commission depending on international developments.

5.12. Tolerance

No negative tolerance is permitted in relation to the standard of fineness indicated on the article.

Separate rules for special manufacturing techniques are established by the Precious Metals Commission.

5.13. Use of solder

Adhesives may be used instead of the permitted solders.

In solder-filled wire, both the solder and the wire must be of the permitted fineness. Where a lower solder fineness is permitted; the whole of the wire must be to a permitted fineness.

Precious Metals must be soldered with precious metal solders of the same fineness.

Practical exceptions:

Precious metal

The following exceptions are permitted:

Gold

The following exceptions are defined:

Gold alloy articles with a fineness of 750/1000 or more shall be soldered with solder of a minimum fineness of 750/1000 gold.

In the case of gold articles of filigree work and watch cases of the 750 standard the solder shall contain not less than 740 parts of gold per 1,000. For white gold articles of the 750 standard the solder shall contain not less than 585 parts of gold per 1,000.

Silver

For silver articles of all finenesses, the solder used shall contain not less than 550 parts of silver per 1,000.

Platinum

Solder for platinum articles shall contain at least 800 parts per 1,000 of gold, silver, platinum or palladium,

Palladium

Solder for palladium articles of all standards shall contain at least 700 parts per 1,000 of palladium.

Mixed precious metal:

The solder can be the permitted solder for the least precious metal fineness.

Precious metal with base metal:

Any suitable solder, including base metal, can be used.

5.14. Use of working base metal parts

Other exceptions:

Base metal parts are permitted as a mechanical function for which precious metals are unsuitable either for strength or durability. Such base metal parts shall not be treated to give the appearance of a precious metal.

For all precious metals (examples)

Steel wires used for the assembling of necklaces (the steel wires must not be used as decoration);

Magnets for clasps;

Security retainers for tie tacks or badge buttons;

Screws;

Threads.

For silver articles only

Clasps - only the tongue in a box snap;

Pins for silver brooches;

Pins for silver badge buttons;

Clips for hair clasps, tie clasps, etc.

5.15. Use of non-metallic substances for filling flatware and hollow-ware

Permitted fillings of non-metallic substances:

Filling the base with non metallic material is permitted for better stability (e.g. candle holders, flowerpots and similar silver articles).

The word “filled” shall be engraved / embossed on the base to indicate that the gross weight of the item is not all precious metal.

Filling the handles with mastic is allowed (e.g. cutlery, salad servers, carving knives and forks, dessert knives, manicure sets, toilet sets and similar articles. This is a non-exhaustive list).

5.16. Coating of precious metal articles

Subject to the provisions of paragraph 5.17.6 concerning the differentiation of colours on mixed articles, the following metallic coating are permitted:

Metallic coating (for example: galvanic) in accordance with the table below:

On	Permitted
Platinum	Rhodium, platinum
Gold	Rhodium, platinum, gold
Palladium	Rhodium, platinum, gold, palladium
Silver	Rhodium, platinum, palladium, gold, silver

Chemical or long-lasting thermal treatments (i.e. sulphured silver, Physical Vapour Deposition (PVD), Chemical Vapour Deposition (CVD).

The colouring of the surface of articles of precious metal by means of chemical transformation of the alloy or its components may be permitted under the terms of this CIBJO standard as long as the standard of fineness is not altered by the process.

Non-metallic coatings (i.e. enamel, niello).

Coatings of precious metals should not disguise the colour of the alloy; for example rhodium on yellow metal.

5.17 Marking of precious metal articles

5.17.1 The following minimum marks shall be applied on articles which satisfy the criteria in Section 5 of this CIBJO standard:

A registered responsibility mark as described in paragraph 5.17.3 and the corresponding fineness mark in Arabic numerals in parts per thousand.

These marks can be applied by punching, lasering, casting or engraving on the article. Whenever possible, all marks shall be placed in immediate proximity to each other.

Other marks which are not to be confused with the marks mentioned above are allowed as additional marks.

5.17.2 The Precious Metals Commission can decide on other methods of marking articles.

5.17.3 The responsibility mark referred to in paragraph 5.17.1, shall be registered in an official register of the State and/or trade organisations and/or one of its assay offices, in whose territory the article in question is controlled.

5.17.4 All different standards of fineness listed in this CIBJO standard can be represented.

5.17.5 Articles consisting of more than one fineness of the same precious metals:

Where an article consists of different alloys of the same precious metal, the fineness mark applied shall be that of the lowest fineness present in the article.

5.17.6 Exception: Gold nuggets

Native gold in the shape of nuggets is allowed – unmarked – on precious metal articles, irrespective of the standard of fineness and of criteria for the determination of colours.

5.17.7 Articles consisting of parts:

If an article consists of parts which are hinged or readily separable, the above marks shall be applied to the main part. Where practicable, the mark shall be applied also the lesser parts.

5.17.8 A pendant incorporating a gold or silver ingot fitted with a frame shall be considered as two separate articles, provided the ingot is loosely fitted and not permanently fixed. The frame may be accepted as a separate and complete article and marked separately.

5.17.9 Articles consisting of different precious metal alloys.

If an article consists of different precious metal alloys, and if the colour and extent of each alloy are clearly visible, the marks referred to in paragraph 5.17.1 shall be applied on the appropriate precious metal.

If an article consists of different precious metal alloys and if the colour and extent of each alloy is not visible; the marks referred to in paragraph 5.17.1 shall be that of the least precious metal and shall be applied on the least precious metal, currently in order of platinum, gold, palladium, silver.

Exceptions:

White gold parts permitted on platinum articles for technical reasons:

On platinum articles, the following parts may be in white gold (750/1000):

Tongues for bracelets and necklets;
Moving parts of clips for earrings and brooches;
Pins for brooches;
Joints and catches for brooches.

Supporting Standards
Internationally Recognised Precious Metal Standards in relation to the Jewellery, Watch and Silverware Industries (non-exhaustive).

GOLD

Standard Number	Title
ISO 14647:2000	Metallic coatings. Determination of porosity on gold coatings on metallic substrates. Nitric acid vapour test
ISO 3160-1:1998	Watch-cases and accessories. Gold alloy coverings. General requirements
ISO 4524-4:1985	Methods of test for electroplated gold and gold alloy coatings. Determination of gold content
ISO 10713:1992	Jewellery. Gold alloy coatings
ISO 11426:1999	Determination of gold in gold jewellery alloys. Cupellation method (fire assay)
ISO 4524-5:1985	Methods of test for electroplated gold and gold alloy coatings. Adhesion tests
ISO 4524-3:1995	Metallic coatings. Test methods for electrodeposited gold and gold alloy coatings. Electrographic tests for porosity
ISO 4524-1:1985	Methods of test for electroplated gold and gold alloy coatings. Determination of coating thickness
ISO 4524-6:1995	Metallic coatings. Test methods for electrodeposited gold and gold alloy coatings. Determination of the presence of residual salts
ISO 4524-2:2000	Metallic coatings. Test methods for electrodeposited gold and gold alloy coatings. Mixed flowing gas (MFG) environmental tests
ISO 8654:1987	Colours of gold alloys. Definition, range of colours and designation
ISO 3160-2:2003	Watch-cases and accessories. Gold alloy coverings. Determination of fineness, thickness, corrosion resistance and adhesion
ISO 15721:2001	Metallic coatings. Porosity tests. Porosity in gold or palladium coatings by sulfurous acid/sulfur dioxide vapour
ISO 15720:2001	Metallic coatings. Porosity tests. Porosity in gold or palladium coatings on metal substrates by gel-bulk electrography
ISO 10378:2005	Copper, lead and zinc sulfide concentrates. Determination of gold and silver. Fire assay gravimetric and flame atomic absorption spectrometric method
ISO 9202:1991	Jewellery. Fineness of precious metal alloys
ISO 4538:1995	Metallic coatings. Thioacetamide corrosion test (TAA test)

GOLD - continued

Standard Number	Title
ISO 8442-4:1998	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Requirements for gold-plated cutlery

SILVER

Standard Number	Title
ISO 4522-3:1988	Methods of test for electroplated silver and silver alloy coatings. Detection of residual salts
ISO 11427:1993	Determination of silver in silver jewellery alloys. Volumetric (potentiometric) method using potassium bromide
ISO 13756:1997	Determination of silver in silver jewellery alloys. Volumetric (potentiometric) method using sodium chloride or potassium chloride
ISO 4522-1:1985	Methods of test for electroplated silver and silver alloy coatings. Determination of coating thickness
ISO 4522-2:1985	Methods of test for electroplated silver and silver alloy coatings. Adhesion tests
ISO 8442-8:2001	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Requirements for silver table and decorative hollow ware
ISO 8442-7:2001	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Requirements for table cutlery made of silver, other precious metals and their alloys
ISO 8442-6:2001	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Lightly silver plated table hollow ware protected by lacquer
ISO 4538:1995	Metallic coatings. Thioacetamide corrosion test (TAA test)
ISO 10378:2005	Copper, lead and zinc sulfide concentrates. Determination of gold and silver. Fire assay gravimetric and flame atomic absorption spectrometric method
ISO 9202:1991	Jewellery. Fineness of precious metal alloys
ISO 2819:1995	Metallic coatings on metallic substrates. Electrodeposited and chemically deposited coatings. Review of methods available for testing adhesion
ISO 8442-3:1998	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Requirements for silver-plated table and decorative hollow ware

PLATINUM

Standard Number	Title
ISO 11210:1995	Determination of platinum in platinum jewellery alloys. Gravimetric method after precipitation of diammonium hexachloroplatinate
ISO 11489:1995	Determination of platinum in platinum jewellery alloys. Gravimetric method after reduction with mercury(I) chloride
ISO 14647:2000	Metallic coatings. Determination of porosity on gold coatings on metallic substrates. Nitric acid vapour test
ISO 9202:1991	Jewellery. Fineness of precious metal alloys
ISO 8442-2:1998	Materials and articles in contact with foodstuffs. Cutlery and table hollow ware. Requirements for stainless steel and silver-plated cutlery

PALLADIUM

Standard Number	Title
ISO 11490:1995	Determination of palladium in palladium jewellery alloys. Gravimetric method with dimethyl glyoxime
ISO 15720:2001	Metallic coatings. Porosity tests. Porosity in gold or palladium coatings on metal substrates by gel-bulk electrography
ISO 15721:2001	Metallic coatings. Porosity tests. Porosity in gold or palladium coatings by sulfurous acid/sulfur dioxide vapour
ISO 14647:2000	Metallic coatings. Determination of porosity on gold coatings on metallic substrates. Nitric acid vapour test
ISO 13756:1997	Determination of silver in silver jewellery alloys. Volumetric (potentiometric) method using sodium chloride or potassium chloride

Work in progress to change existing jewellery standards:

At the present time the focus is on 1811:1999 – ‘Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin’.

Proposals for new standards are as follows:

ISO 11494 – ‘Determination of platinum in platinum jewellery alloys - ICP-solution-spectrometric method using Yttrium as internal standard element’.

ISO 11495 – 'Determination of palladium in palladium jewellery alloys - ICP-solution-spectrometric method using Yttrium as internal standard element'.

Proposals for new standards at the draft stage are as follows:

ISO/CD 15093 – 'Determination of precious metals in 999 gold, platinum and palladium jewellery alloys by difference method using ICP-OES'.

ISO/CD 15096 – 'Determination of silver in 999/1000 silver jewellery alloys by difference method using ICP-OES'.

ISO/CD 11596 - Sampling of the precious metal alloys in jewellery and associated products'.

Resolutions in progress to withdraw existing standards are as follows:

1810:1998 – 'Body-piercing post assemblies – Reference test method for determination of nickel content by flame atomic absorption spectrometry'.

Some of the standards for testing precious metals (non-exhaustive):

ISO Standards

1463:2004 Metallic and oxide coatings. Measurement of coating thickness. Microscopical method.

11210:1995 Determination of platinum in jewellery alloys – Gravimetric method after precipitation of diammonium hexachloroplatinate.

11426:1999 Determination of gold in gold jewellery alloys – Cupellation method (fire assay).

11489:1995 Determination of platinum in platinum jewellery alloys – Gravimetric method after reduction with mercury (I) chloride.

11490:1995 Determination of palladium in palladium jewellery alloys – Gravimetric method with dimethyl glyoxime.

1904:2000 Precious metals. The finenesses of solders used with precious metal jewellery alloys.

3160-2:2003 Watch-cases and accessories. Gold alloy coverings. Determination of fineness, thickness, corrosion resistance and adhesion.

4524-3:1995 Metallic coatings. Test methods for electrodeposited gold and gold alloy coatings. Electrographic tests for porosity.

3882:2003 Metallic and other inorganic coatings. Review of measurement of thickness.

References

Convention on the Control and Marking of articles of precious metal, Geneva 1994.

Annexes I and II to the Convention on the Control and Marking of articles of precious metal, entered into force on 10 March 2000.

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