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## Jewellery — Consumer confidence in the diamond industry

*Bijouterie — Confiance du consommateur dans l'industrie du diamant*

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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. [www.iso.org/directives](http://www.iso.org/directives)

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 174, *Jewellery*.

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## Introduction

A diamond is a mineral; it forms and grows under natural geological processes.

The jewellery industry relies upon product integrity and transparency for consumers to have confidence in the products that they are buying. Consumers will not always have the technical expertise to understand the exact provenance and processing of a diamond and as a result, are reliant upon labelling and product descriptions as well as guidance from the individual seller.

The recent development of new technologies in the diamond industry has provided consumers with greater availability of synthetic diamonds which are produced in a factory or laboratory (see 2.4 NOTE 3). They have essentially the same chemical composition and physical (including optical) properties as a diamond and essentially the same crystal structure but due to the growth environment, differences in the growth structure take place at the atomic level.

A major concern held by the diamond industry is that without clear and accurate labelling, the increased availability of synthetic diamonds to consumers can cause confusion over exactly what type of product is being sold to them. While the provenance and labelling of a diamond is widely understood, the consumer will be less familiar with the variety of terms that have been used by sellers to describe synthetic diamonds.

The diamond industry is concerned that a consumer can inadvertently buy a synthetic diamond or other product believing it to be a diamond and similarly, the synthetic-diamond industry does not want its products to be seen as a cheap alternative to a diamond or as a product that consumers will only buy if they are not fully aware of its provenance.

Considering that synthetic diamonds are nowadays set in jewellery pieces it is therefore in the interests of both sectors of the market that consumers are able to make informed purchasing decisions.

This document is specifically designed to be understood by the consumer and seeks to address the potential for confusion by setting out clear and accurate guidelines on accepted nomenclature.

The Standard is based largely on existing industry self-regulation documents and labelling that provide voluntary guidance for the industry on how to describe diamonds, treated diamonds, synthetic diamonds, composite diamonds and imitations of diamonds.

The following definitions apply in understanding how to implement an ISO International Standard and other normative ISO deliverables (TS, PAS, IWA).

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” is used to indicate that something is permitted;
- “can” is used to indicate that something is possible, for example, that an organization or individual is able to do something.

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.1, defines a requirement as an “expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.”

ISO/IEC Directives, Part 2 (sixth edition, 2011), 3.3.2, defines a recommendation as an “expression in the content of a document conveying that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.”

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# Jewellery — Consumer confidence in the diamond industry

## 1 Scope

This International Standard specifies a set of permitted descriptors for the diamond industry and is specifically designed to be understood by the consumer. The Standard also includes a series of definitions which aim to provide further clarity for traders and maintain consumer confidence in the diamond industry as a whole.

This International Standard will cover the nomenclature to be used by those involved in the buying and selling of diamonds, treated diamonds, synthetic diamonds, composite diamonds and imitations of diamonds.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1

#### **natural**

formed completely by nature without human intervention during the formation

### 2.2

#### **diamond**

mineral consisting essentially of carbon crystallised in the isometric (cubic) crystal system, with a hardness on the Mohs' scale of 10, a specific gravity of approximately 3,52 and a refractive index of approximately 2,42, created by nature

Note 1 to entry: The denomination "diamond" without further specification always implies "natural diamond". These two terms are equivalent and carry the same meaning.

### 2.3

#### **treated diamond**

*diamond* (2.2) having undergone any human intervention other than cutting, polishing, cleaning and setting, to permanently or non-permanently change its appearance

EXAMPLES Coating, fracture filling, heating, irradiation, laser drilling, HPHT treatment or any other physical or chemical process

### 2.4

#### **synthetic diamond**

#### **laboratory-grown diamond**

#### **laboratory-created diamond**

artificial product that has essentially the same chemical composition, crystal structure and physical (including optical) properties as a diamond

Note 1 to entry: The English terms laboratory-created diamond or laboratory-grown diamond may be used synonymously with synthetic diamond. Where there is no acceptable local direct translation of the English terms laboratory grown diamond or laboratory created diamond then only the translation of the term synthetic diamond should be used.

Note 2 to entry: Abbreviations such as 'lab grown', 'lab created' "lab diamond" or 'syn diamond' shall not be used.

Note 3 to entry: The word "laboratory" refers to the facility which produces the synthetic diamonds. This should not to be confused with a gemmological laboratory that is dedicated to the analysis, authentication, identification, classification (grading) of diamonds.

**2.5**

**composite stone  
assembled stone**

stone constructed of two or more parts

**2.6**

**brilliant**

<noun>round polished diamond with a brilliant cutting style

**2.7**

**artificial stone**

crystalline stone that has no natural counterpart

**2.8**

**imitation of diamond  
diamond simulant**

any artificial product used to imitate the appearance of *diamond* ([2.2](#))

See 3.6.

**2.9**

**stone**

gemstones (including diamonds), treated gemstones, synthetic stones, composite stones and artificial stones usable for jewellery

**2.10**

**gemstone**

mineral of natural origin, rough, cut and/or polished, often used in jewellery for reasons of combined beauty, rareness and value

Note 1 to entry: "Gemstones" may be qualified with the terms "precious", "real", "genuine" and "natural".

**2.11**

**gem**

gemstone and/or organic substance of natural origin, often used in jewellery for reasons of combined beauty, rareness and value

Note 1 to entry: "Gems" may be qualified with the terms "precious", "real", "genuine" and "natural".

**2.12 Characteristics**

**2.12.1**

**clarity**

relative absence or presence of internal characteristics/inclusions and external characteristics/blemishes

**2.12.2**

**colour**

relative absence or presence of hue, saturation and lightness in standardized observation conditions

**2.12.3**

**cut**

comprises shape, proportions, symmetry and polish

**2.12.4**

**carat**

unit of weight

Note 1 to entry: One carat being equivalent to 200 mg (0,20 g).



**2.12.5****shape**

outline when viewed perpendicular to the table facet

**2.12.6****total weight**

combined weight of multiple diamonds, combined weight of multiple treated diamonds, combined weight of multiple synthetic diamonds or combined weight of multiple imitations of diamonds

Note 1 to entry: In the case of different materials being combined in a piece of jewellery or sold loose, the weight of the different categories of stones shall not be totalled.

**2.12.7****fluorescence**

appearance of luminescence when viewed under ultraviolet (UV) light

**2.12.8****diamond grading**

to determine and to describe the most important features of a polished diamond (see [2.2](#))

EXAMPLE Clarity, colour, cut and carat weight.

Note 1 to entry: *Synthetic diamonds* ([2.4](#)) may also be graded.

**2.13 Treatments****2.13.1****treatment**

any human intervention, other than the accepted practices of cutting, polishing, cleaning and setting that alters the appearance of a stone

EXAMPLE Coating, fracture filling, heating, irradiation, laser drilling, HPHT treatment or any other physical or chemical process

**2.13.2****fracture filling**

to fill the whole or part of a fracture/fissure with a substance, e.g., glass, with the purpose of making the fracture/fissure less visible

**2.13.3****irradiation**

exposure to radiation to change the colour

**2.13.4****laser drilling**

burning a channel with a laser between the surface of a diamond and an inclusion (generally black), the channel being used as a conduit to allow a chemical treatment of the inclusion with the purpose of making the inclusion less visible

**2.13.5****HPHT treatment**

changing the colour through a treatment involving both High Pressure and High Temperature (HPHT)

Note 1 to entry: HPHT treatment can also affect the clarity.

**2.13.6****coating**

substance applied over the surface, or part of the surface for modifying the appearance