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**Tableware, giftware, jewellery and  
luminaries, made of glass — Glass  
clarity — Classification and test  
method**

*Vaisselle, objets de décoration, bijouterie et luminaires, faits de  
verre — Clarté du verre — Classification et méthode d'essai*



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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](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 (see [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.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Project Committee ISO/PC 320, *Tableware, giftware, jewellery and luminaries made of glass — Glass clarity — Classification and test method*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document intends to provide a generic definition and classification of glass clarity to permit a global understanding of consumer quality requirements, with a corresponding method to measure glass clarity.

For glass clarity, spectrophotometric measurement is performed in accordance with CIE 15 with a predefined choice of illuminate and observer. Measurement on the sample at two different thicknesses permits calculation of internal transmission for a defined intermediate thickness and indicates glass clarity irrespective of the refractive index value. The same methodology applies for all mineral glasses.

This method has been verified in accordance with visual inspection with a light cabinet. In addition, preliminary collaborative studies have confirmed the results of these measurements as being coherent with both consumer perception and quality recognition.

As it is well known that iron is by far the main contaminant of glass raw materials affecting the transparency and colorimetric purity of the glass, the iron content has been considered as an additional criterion.

This document does not concern lead crystal categories as defined in EU Council Directive 69/493/EEC, which has its own characteristics with respect to density and refraction index.



# Tableware, giftware, jewellery and luminaries, made of glass — Glass clarity — Classification and test method

## 1 Scope

This document establishes requirements for the use of the glass designations “clear glass” and “ultra-clear glass” for non-coloured glass items according to their clarity and iron content. It specifies a procedure for measuring the clarity of glass items by means of a spectrophotometer.

This document is applicable to

- mineral glasses, and
- glass items where a part is not covered by coating or decoration, and is therefore available for sampling.

This document is applicable to the use of glass as tableware, giftware, jewellery and luminaries.

It is not applicable to the use of glass in the context of building, watches, containers, medicine and laboratories, and to other technical uses of glass.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

CIE 15, *Colorimetry*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Specifications

### 4.1 General

The classification of the samples of glass in terms of clarity is based on three criteria:

- lightness,  $L^*$ ;
- chroma,  $C^*$ ;
- iron content of the material.