INTERNATIONAL STANDARD

ISO 8442-1

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Materials and articles in contact with foodstuffs — Cutlery and table holloware —

Part 1:
Requirements for cutlery for the preparation of food

Matériaux et objets en contact avec les denrées alimentaires — Coutellerie et orfèvrerie de table —

Partie 1: Exigences relatives à la coutellerie utilisée pour la préparation des denrées alimentaires

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8442-1 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 186, *Cutlery and table and decorative metal hollow-ware*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 8442 consists of the following parts, under the general title *Materials and articles in contact with foodstuffs — Cutlery and table holloware*:

— *Part 1: Requirements for cutlery for the preparation of food*

— *Part 2: Requirements for stainless steel and silver-plated cutlery*

— *Part 3: Requirements for silver-plated table and decorative holloware*

— *Part 4: Requirements for gold-plated cutlery*

Further parts are proposed with the following titles:

— *Part 5: Specific cutting test*

— *Part 6: Lacquered lightly silver-plated table and decorative holloware*

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— *Part 7: Specification for table cutlery made of precious metals and their alloys, especially silver cutlery*

— *Part 8: Specification for silver table and decorative holloware*

Annex A forms an integral part of this part of ISO 8442. Annex B is for information only.

Contents

Foreword

The text of EN ISO 8442-1:1997 has been prepared by Technical Committee CEN/TC 194 “Utensils in contact with food”, the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 186 “Cutlery and table and decorative metal hollow-ware”.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

EN ISO 8442 consists of the following parts:

Part 1 : Requirements for cutlery for the preparation of food
Part 2: Requirements for stainless steel and silver-plated cutlery
Part 3: Requirements for silver-plated table and decorative holloware
Part 4: Requirements for gold-plated cutlery

Further parts are proposed with the following titles

Part 5: Specific cutting test
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Part 8: Specification for silver table and decorative holloware

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This standard, based on draft ISO/TC 186 documents N 53 and N 54, does not cover those features of cutlery which are matters of choice for the user, such as the shape and size of knife or spatula blades.

It is the intention that requirements for blade sharpness and edge retention are incorporated in this standard at a later date if reliable test methods are established for these properties.

No meaningful test for the resistance of knives to fracture in use could be developed for the standard, but it is considered that this can be partially assessed from the appearance of cracks in the initial visual inspection, in the resistance to dropping requirements, the strength test requirements or in the corrosion test requirements.

Attention is drawn to Directives of the European Community concerning materials and articles in contact with food, in particular to Directives EC 77/99 and EC 89/109.

1 Scope

This Part of this Standard specifies material and performance requirements and test methods for metal cutlery and related implements intended for use in the preparation of food.

Two grades of cutlery are specified:

- a normal grade with corrosion resistant blades or prongs capable of withstanding dishwasher cleaning procedures;

- a special grade with corrosion resistant blades capable of withstanding dishwasher cleaning procedures and sterilization processes.

2 Normative references

This Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 306 : 1994 Plastics - Thermoplastic materials - Determination of the Vicat Softening Temperature (VST)

ISO 6508 : 1986 Metallic materials - Hardness test - Rockwell test (scales A-B-C-D-E-F-G-H-K)

3 Definitions

For the purposes of this Standard the following definitions apply.

3.1 cutlery: Utensils for the preparation and serving of food, for example knives with and without cutting edges, spatulas, palettes and carving forks.

3.2 normal corrected vision: The naked eye corrected to normal vision if necessary.

NOTE: This is usually done by the wearing of spectacles.

4 Materials

4.1 General

The cutlery should be made from materials that enable the finished product to meet all of the performance requirements of this standard.

NOTE: The cutlery should not under foreseeable conditions of use release any substance likely to be detrimental to health or to have any detrimental organoleptic effects.

4.2 Metals

4.2.1. The composition of metal blades of the cutlery shall be as given in table 1 which specifies the composition limits (see EN 10088 Parts 1 and 2)

4.2.2. Handle rivets, guards, swivels, shackles, hanging hooks, rings and other exposed parts of handles of the cutlery shall be made from stainless steel, plain carbon steel[1)], brass[1)], bronze[2)], nickel silver[2)] and for only handle rivets aluminium alloy.

1) Subsequently chromium plated with an undercoat of copper/nickel.

2) Subsequently chromium plated with an undercoat of nickel.

Table 1: Metals for cutlery blades, composition limits

Applications	Type of material	Grades of cutlery Normal and special
Knife blades with type "A" cutting edges (see 5.3)	Martensitic stainless steel (X39Cr13) (1.4031)	12,50 % min. Cr 0,36 % min. C 0,015 % max. S[1)] 0,040 % max. P
Knife blades with type "B" cutting edges (see 5.3)	Martensitic stainless steel (X20Cr13) (1.4021)	12,00 % min. Cr 0,16 % min. C 0,015 % max. S[2)] 0,040 % max. P
Blades of spatulas and other cutlery without a cutting edge	Austenitic stainless steel (X4CrNi1810) (1.4301)	17,00 % min. Cr 8,00 % min. Ni 0,07 % max. C 0,015 % max. S[1)] 0,045 % max. P
	or (X12CrMnNiN1895) (1.4373)	17,00 % min. Cr 7,50 % min. Mn 0,15 % max. C 4,00 % min. Ni 0,015 % max. S[1)] 0,045 % max. P 0,05 % min. N
	or Martensitic stainless steel (X30Cr13) (1.4028)	12,00 % min. Cr 0,26 % min. C 0,015 % max. S[1)] 0,04 % max. P
	or Ferritic stainless steel (X6Cr17) (1.4016)	Normal only 16,00 % min. Cr 0,08 % max. C 0,015 % max. S 0,04 % max. P

1) A higher content up to a maximum of 0,030 % may be acceptable in the case of products to be machined.

2) For long products a maximum sulfur (S) content of 0,030 % applies. For products to be machined a controlled sulfur content of 0,015 % to 0,030 % is recommended.

4.3 Non-metals

Non-metal parts of the cutlery shall be made of plastics, wood-plastics laminates, impregnated wood or other synthetic materials such that the finished cutlery complies with the relevant performance requirements of this standard.

Non-metal parts of cutlery shall not be superficially protected by paint, lacquer, varnish or similar coatings unless such coatings are also capable of complying with the relevant performance requirements of this standard.

5 Construction

5.1 General

Cutlery manufactured from the materials specified in clause 4 shall be so constructed that it meets all of the relevant performance requirements of this standard. The design of the cutlery shall be such that thorough cleaning processes can be readily carried out to avoid contamination of prepared foods.

5.2 Alignment, uniformity and absence of defects

5.2.1 All visible surfaces shall be free from scale, cracks, laps and any other defects which can render the item unfit for use for its intended purpose.

5.2.2 All cutlery shall be essentially straight and symmetrical except when the lack of straightness or symmetry is an intentional feature of design, e.g. swaged back edges.

5.2.3 All edges shall be free from fash and burrs and the roughness of blanked edges shall have been removed.

5.2.4 There shall be no gaps in excess of 0,3 mm between components of the cutlery.

5.2.5 Compliance with the requirements of 5.2.1 to 5.2.3 shall be checked by touch or by visual inspection with normal corrected vision and with 5.2.4 by measurement with a feeler gauge.

5.3 Knife edges

Knives shall have either:

a) cutting edges that can be resharpened by the user and edges whose tooth pitch is larger than 1 mm (type "A" edges);

or

b) cutting edges which are not intended to be resharpened on a steel (type "B" edges).

Except where intended for chopping or boning, cutting edges shall be formed to an included angle no greater than 40° and shall be no thicker than 0,46 mm when measured 1 mm from the extremity of the edge and not less than 25 mm from the handle.

Those parts of edges of knife blades intended for chopping shall be no thicker than 0,6 mm, when measured 1 mm from the extremity of the edge and not less than 25 mm from the handle, except that in the case of knives of less than 100 mm in overall length this measurement shall be taken at not less than 15 mm from the handle.

5.4 Sprung fork guards

Where fitted, sprung fork guards shall have a positive opening and closing snap action.

6 Performance

6.1 Corrosion resistance

6.1.1 Resistance to blade corrosion

Before commencing the determination of resistance to blade corrosion subject the cutlery to the appropriate bend test forces specified in 6.2 and the torque and pull test forces in 6.3 but without previously immersing any part of the cutlery in hot water.

When tested in accordance with the test method described in A.1, exposed stainless steel surfaces shall comply with requirements a) to c) if the blade length of the cutlery is less than 100 mm.

When tested in accordance with the test method described in A.1, exposed stainless steel surfaces of cutlery with blade length exceeding 100 mm, shall also comply with requirements a) to c), except for a region of 15 mm from the handle if there is no bolster, or the bolster and that part of the blade within 25 mm of the bolster if a bolster is present (see figure 1).