

5`i a]b]^[b`U i a]b]^[Y`Y`n`h]bY`!` ; bYhYb]`]nXY`_]`!`? Ya] bU`gYgHj U`dc`]nXY`_cj ž
bUa Yb`Yb]`]nXY`Uj]`]nXY`_cj ž`_]df]XY`c`j`gh`_g` fUbc

Aluminium and aluminium alloys - Wrought products - Chemical composition of semi products used for the fabrication of articles for use in contact with food

Aluminium und Aluminiumlegierungen - Knetzeugnisse - Chemische Zusammensetzung von Halbzeug für die Herstellung von Erzeugnissen, die in Kontakt mit Lebensmitteln kommen

Aluminium et alliages d'aluminium - Produits corroyés - Composition chimique des demi-produits utilisés pour la fabrication d'articles destinés à entrer en contact avec les aliments

Ta slovenski standard je istoveten z: EN 602:1994

ICS:

77.040.30 Kemijska analiza kovin Chemical analysis of metals

SIST EN 602:1998**en**

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EUROPEAN STANDARD

EN 602

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EUROPÄISCHE NORM

November 1994

ICS 77.120.10

Descriptors: Aluminium, aluminium alloys, rolled products, cooking appliances, preservation, food-container contact, specifications, chemical composition, maximum contents

English version

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products - Chemical composition of semi products
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This draft European Standard has been drawn up by CEN/TC 132 "Aluminium and aluminium alloys", whose Secretariat is held by the Association Française de Normalisation (AFNOR).

Within its programme of work, Technical Committee CEN/TC 132 has entrusted CEN/TC 132 WG9 "Aluminium and aluminium alloy cast and wrought products in contact with food" to prepare the following standard :

EN 602 Aluminium and aluminium alloys - Wrought products - Chemical composition of semi products used for the fabrication of articles for use in contact with food

CEN/TC 132 met on 20 and 21 Octobre 1992 in Paris and agreed on the text to be submitted to CEN members for Formal Vote.

The following countries were represented at that meeting: Belgium - Denmark - France - Germany - Italy - Norway - Spain - Sweden - Switzerland - United-Kingdom.

This European Standard shall be given the status of a national standard, either by publication of an indetical text or by endorsement, at the latest by april 1995, and conflicting national standards shall be withdrawn at the latest by april 1995.

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

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1 Scope

This European Standard specifies the maximum percentage content of alloying elements and impurities present in wrought aluminium and aluminium alloys which are fabricated into materials and articles designed to be in contact with food.

2 Normative references

This European 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 573-3 Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3 : Chemical composition

3 Definitions

For the purposes of this standard the following definitions apply.

3.1 aluminium

Metal with a minimum content of 99,0 % by mass of aluminium, provided that the content by mass of any other element does not exceed the limit specified in the table 1.

Table 1 : Aluminium - Other elements

Element	Maximum content % (by mass)
Iron + Silicon	1,0
Copper	0,10 (if Cr and / or Mn \geq 0,05) 0,20 (if Cr < 0,05 and Mn < 0,05)
Other elements ¹⁾ each	0,10 ²⁾
¹⁾ Other elements are for example, Cr, Mg, Mn, Ni, Zn.	

3.2 aluminium alloy

Metallic substance in which aluminium predominates by mass over each of the other elements, provided that :

- a) the content by mass of at least one of the other elements, or iron plus silicon taken together, is greater than the limits specified in table 1, or,
- b) the total content by mass of such other elements exceeds 1,0 %.

3.3 wrought product

Product obtained by hot and / or cold working processes such as extruding, forging, hot rolling, cold rolling or drawing, either exclusively or in combination. Examples for wrought products are rod/bar, wire, tube, profile, sheet, strip, forging.

4 Maximum permissible content of elements for foodstuff application

4.1 Wrought aluminium

The content by mass of the other elements which are present in wrought aluminium shall not exceed the following limits :

- iron + silicon $\leq 1,0$ % ;
- chromium, magnesium, manganese, nickel, zinc, titanium, tin $\leq 0,10$ % each ;
- copper $\leq 0,2$ %. Copper is permitted in a proportion greater than 0,10 % but not more than 0,20 % and provided that neither the chromium nor manganese content exceeds 0,05 % ;
- other elements $\leq 0,05$ % each.

4.2 Wrought aluminium alloys

The content by mass of the elements which are added to form wrought aluminium alloys or which are present as impurities, shall not exceed the maximum values given in table 2.

Table 2 : Aluminium alloys - Maximum content of elements

Element	Maximum content % (by mass)
Silicon	13,5
Iron	2,0
Copper	0,6
Manganese	4,0
Magnesium ¹⁾	11,0
Chromium	0,35
Nickel	3,0
Zinc	0,25
Zirconium	0,3
Titanium	0,3
Other elements ²⁾	0,05 each 0,15 in total
<p>1) Alloys containing more than 5 % magnesium shall not be used for the production of pressure resisting parts in pressure cooking applications.</p> <p>2) For some alloying elements (e.g. Ag) as mentioned under "Other elements" the maximum content is limited at 0,05 % because of insufficient knowledge about behaviour in contact with food. Higher limits may be introduced when more information is available.</p>	

5 Selection of wrought aluminium and aluminium alloys

The wrought aluminium and aluminium alloys which shall be used for the fabrication of articles for use in contact with food are those which conform with the requirements in 4.1 or 4.2 as applicable.

For every use of a standardized wrought aluminium or aluminium alloy for the fabrication of articles for use in contact with food, the conformity with this European Standard shall be established by checking the maximum contents specified in EN 573-3 against the requirements in 4.1 or 4.2 as applicable.

NOTE : It is strongly recommended to use standardized aluminium or aluminium alloys.

The selection of the aluminium or aluminium alloy for a given application shall be the responsibility of the end product manufacturer, depending on the intended final use.