

# Tin and tin alloys — Pewter and pewterware

## Part 2. Pewterware

The European Standard EN 611-2 : 1996 has the status of a  
British Standard

ICS 77.120.60 ; 77.140.90

## Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee NFE/27, Tin and tin alloys, upon which the following bodies were represented:

Association of British Pewter Craftsmen  
British Iron and Steel Producers' Association  
Federation of the Electronics Industry  
ITRI Ltd.  
London Metal Exchange  
Metal Packaging Manufacturers' Association  
Solder Makers' Association

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# Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of EN 611-2	3

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## Foreword

This British Standard has been prepared by Technical Committee NFE/27 and is the English language version of EN 611-2 : 1996, *Tin and tin alloys — Pewter and pewterware — Part 2: Pewterware*, published by the European Committee for Standardization (CEN).

BS EN 611 : Part 2 : 1996, together with BS EN 611 : Part 1 : 1995, supersedes BS 5140 : 1974, which is withdrawn.

### Cross-references

Publication referred to	Corresponding British Standard
EN 610 : 1995	BS EN 610 : 1996 <i>Tin and tin alloys — Ingot tin</i>
EN 611-1 : 1995	BS EN 611 <i>Tin and tin alloys — Pewter and pewterware — Part 1 : 1995 Pewter</i>
EN 29453 : 1993	BS EN 29453 : 1994 <i>Soft solder alloys — Chemical compositions and forms</i>

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

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ICS 77.120.60; 77.140.90

Descriptors: Metal products, tin, tin alloys, specifications, manufacturing, brazed and soldered joints, sampling, chemical analysis, components, chemical composition, food-container contact, marking

English version

## Tin and tin alloys — Pewter and pewterware — Part 2 : Pewterware

Étain et alliages d'étain — Étain pour la fabrication  
d'objets en étain et objets en étain  
Partie 2: Objets en étain

Zinn und Zinnlegierungen — Zinnlegierungen und  
Zinngerät —  
Teil 2: Zinngerät

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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**

## **Foreword**

This European Standard has been prepared by CEN/TC 220, Tin and tin alloys, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, whether by publication of an identical text or by endorsement, at the latest by November 1996, and conflicting standards shall be withdrawn at the latest by November 1996.

This standard consists of two Parts, of which Part 2 specifies the requirements for pewterware.

Part 1 gives the requirements for pewter alloys for use in the production of the pewterware in Part 2.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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 and the United Kingdom.

## **Contents**

	Page
Foreword	2
<b>1</b> Scope	3
<b>2</b> Normative references	3
<b>3</b> Materials of manufacture	3
<b>4</b> Requirements	3
<b>5</b> Sampling and analysis	3
<b>6</b> Marking	4
<b>Annexes</b>	
<b>A</b> (normative) Solders in EN 29453 referred to in <b>3.2</b>	5

## 1 Scope

This Part of EN 611 specifies the requirements for the fabrication, sampling, analysis and marking of pewterware. It does not cover articles manufactured from materials other than pewter which have been coated or clad with pewter.

NOTE. The requirements for pewter alloys are specified in EN 611-1.

## 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 Part of EN 611 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 610	<i>Tin and tin alloys — Ingot tin</i>
EN 611-1 : 1995	<i>Tin and tin alloys — Pewter and pewterware — Part 1: Pewter</i>
EN 29453	<i>Soft solder alloys — Chemical compositions and forms (ISO 9453 : 1990)</i>

## 3 Materials of manufacture

### 3.1 Pewterware

The pewter part(s) of the pewterware can be fabricated from one or more pieces of pewter, each of which shall be an alloy conforming to EN 611-1.

Materials used to simulate pewter alloys in the article, such as lead, zinc, aluminium or their alloys, shall not be used. Materials which do not simulate pewter alloys may be associated with the pewter in the article of pewterware for functional, decorative and/or structural purposes.

NOTE. The finished pewterware may be surface treated, for example by painting or by patination.

### 3.2 Soldered joints

For those cases where the soldered joint may reasonably be expected to come into contact with foodstuffs, the solder used for joining the component parts of the pewterware shall contain not more than 0,25 % lead and 0,05 % cadmium. Examples of solders which meet this requirement are as follows:

- one of the alloys numbered 1 to 6 in table 1 of EN 611-1 : 1995; or
- alloy 21 in EN 29453 (see table A.1); or
- tin complying with any of the grades specified in EN 610.

NOTE. It is recommended that soldered joints which can reasonably be expected not to come into contact with foodstuffs should be made using solder which complies either with a), b) or c) of this subclause, or with alloy 11 or alloy 12 in EN 29453 (see table A.1).

## 4 Requirements

### 4.1 Pewterware

When sampled and analysed in accordance with a) of clause 5, the composition of each piece of pewter in the pewterware article (see 3.1) shall be found to conform to one of the alloys in EN 611-1.

### 4.2 Soldered joints for contact with foodstuffs

When sampled and analysed in accordance with b) of clause 5, the composition of the joint region of those joints which may reasonably be expected to come into contact with foodstuffs shall contain not more than 0,25 % lead (Pb) and 0,05 % cadmium (Cd).

## 5 Sampling and analysis

When analysis is required to be carried out to verify compliance of the pewterware article with this standard, the procedures given in a) and b) of this clause shall be followed.

### a) Sampling and analysis of the pewter component(s) of the pewterware article

All surface coatings on the pewter components to be sampled shall be removed before sampling. Analysis samples shall be taken, by drilling or cutting, to represent each pewter component part of the article. These samples shall be taken from zones furthest from any soldered joints.

For routine control purposes each of the analysis samples so obtained shall be analysed by the use of recognized chemical, or instrumental, analytical procedures.

In cases of dispute concerning the chemical composition of the pewterware, until the publication of European Standards<sup>1)</sup> for the analysis of pewter, the methods of analysis to be used shall be subject to agreement between the disputing parties and any independent arbitrator.

### b) Sampling and analysis of soldered joints

The joint shall be cut from the pewterware article. The sample for analysis shall be a length of the joint, taken so as to include not more than 2 mm of the pewter on each side of the joint. The mass of the sample taken for analysis shall be at least 0,1 g.

Analysis shall be carried out on this sample to determine the lead and cadmium content (see 4.2).

NOTE. It is not normally possible to determine the actual composition of the solder used for the joint in the article. However, if one of the solders specified in 3.2 for joints in contact with foodstuffs has been used, then the composition of the sample of the joint will be found to contain less than 0,25 % Pb and 0,05 % Cd.

<sup>1)</sup> In course of preparation.

## **6 Marking**

As a minimum requirement, each article of pewterware shall be permanently marked with:

- the name or mark of the producer and/or distributor; and
- the word PEWTER (or corresponding translation, for instance 'ETAIN' in French, 'ZINN' in German, etc.)

In addition, the pewterware article or if this is not practicable, its label or associated packaging shall be marked with the number of this Part of this European Standard (i.e. EN 611-2).



## **Annex A (normative)**

### **Solders in EN 29453 referred to in 3.2**

Table A.1 gives the chemical composition requirements for solders Nos 21, 11 and 12 referred to in **3.2** of this Part of EN 611.

NOTE. The details have been extracted from EN 29453.

<b>Table A.1. Chemical compositions of EN 29453 solders</b>														
Alloy number	Alloy designation	Melting, or solidus/liquidus temperature °C	Chemical composition % (m/m)											
			Element	Sn	Pb	Sb	Cd	Zn	Al	Bi	As	Fe	Cu	Total excluding Sb, Bi, Cu
11	S-Sn63Pb37Sb	183	min.	62,5	Remainder	0,12	—	—	—	—	—	—	—	—
			max.	63,5		0,50	0,002	0,001	0,001	0,10	0,03	0,02	0,05	0,08
12	S-Sn60Pb40Sb	183-190	min.	59,5	Remainder	0,12	—	—	—	—	—	—	—	—
			max.	60,5		0,50	0,002	0,001	0,001	0,10	0,03	0,02	0,05	0,08
21	S-Bi57Sn43	138	min.	42,5	—	—	—	—	—	—	Remainder	—	—	—
			max.	43,5	0,05	0,10	0,020	0,010	0,010		0,03	0,02	0,10	0,2 <sup>1) 2)</sup>

<sup>1)</sup> In alloy 21, the sum of all impurities (i.e. elements other than Bi and Sn) is 0,2 % maximum.

<sup>2)</sup> In alloy 21, the maximum indium (In) content is 0,05 % and the maximum silver (Ag) content is 0,05 %.

## List of references

(see national foreword)

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