



National Standards Authority of Ireland

IRISH STANDARD

**ENV 13800:2000**

ICS 77.120.60

**LEAD AND LEAD ALLOYS - ANALYSIS BY  
FLAME ATOMIC ABSORPTION  
SPECTROMETRY (FAAS) OR INDUCTIVELY  
COUPLED PLASMA EMISSION  
SPECTROMETRY (ICP-ES), WITHOUT  
SEPARATION OF THE LEAD MATRIX**

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EUROPEAN PRESTANDARD  
PRÉNORME EUROPÉENNE  
EUROPÄISCHE VORNORM

**ENV 13800**

July 2000

ICS 77.120.60

English version

**Lead and lead alloys - Analysis by flame atomic absorption spectrometry (FAAS) or inductively coupled plasma emission spectrometry (ICP-ES), without separation of the lead matrix**

Plomb et alliages de plomb - Analyse par spectrométrie d'absorption atomique dans la flamme (FAAS) ou spectrométrie d'émission à plasma inductif couplé (ICP-ES), sans séparation de la matrice plomb

Blei und Bleilegerungen - Analyse durch Flammen - Atomabsorptionsspektrometrie (FAAS) oder Emissionsspektrometrie mit induktiv gekoppeltem Plasma (ICP-OES), ohne Abtrennung der Bleimatrix

This European Prestandard (ENV) was approved by CEN on 25 June 2000 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 306 "Lead and lead alloys", the secretariat of which is held by AFNOR.

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

### CAUTION FOR SAFETY AND TRAINING

The methods in this standard are recommended for the certification of reference materials and as umpire methods in cases of a dispute. The importance of either application, and the paramount issue of safety, requires that they should only be carried out by fully-trained analysts who are experienced in all relevant techniques and the precautions necessary in the inherently hazardous environs of a laboratory, especially those required when using particularly hazardous apparatus and reagents used in some of these methods.

Where a particular hazard exists, this is given as a **DANGER** adjacent to the point in the text where the apparatus or reagent is referenced.

## 1 Scope

This European Prestandard specifies methods of analysis using flame atomic absorption spectrometry (FAAS) and inductively coupled plasma emission spectrometry (ICP-ES) for the determination of element contents in lead and lead alloys for the ranges given in Table 1.

**Table 1 — Ranges of application for the determination of element contents**

Element	Ranges of application (% m/m)			
	FAAS		ICP-ES	
Ag	0,0005	- 1	0,0001	- 1
Al	0,005	- 0,04	0,0005	- 0,05
As	0,005	- 0,25	0,002	- 0,3
Ba	0,0025	- 0,025	0,0002	- 0,005
Bi	0,0025	- 0,2	0,002	- 0,2
Ca	0,001	- 0,2	0,0005	- 0,2
Cd	0,001	- 0,2	0,0001	- 0,2
Cu	0,0005	- 0,06	0,0001	- 0,06
Na	0,001	- 0,02	0,001	- 0,02
Ni	0,0005	- 0,005	0,0005	- 0,005
S		-	0,002	- 0,01
Sb	0,0025	- 10	0,002	- 10
Se	0,005	- 0,04	0,005	- 0,04
Sn	0,005	- 2	0,002	- 2
Te	0,0025	- 0,05	0,002	- 0,05
Tl	0,0025	- 0,05	0,0025	- 0,05
Zn	0,0005	- 0,01	0,0002	- 0,01

These methods are intended as the definitive methods in case of dispute for the determination of elements at low content in lead. They are also recommended for the analysis of Certified Reference Materials (CRM) and Reference Materials (RM) which are used in analysis according to ENV 12908.

## 2 Normative references

This European Prestandard 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 Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12402, *Lead and lead alloys - Methods of sampling for analysis.*

ENV 12908, *Lead and lead alloys - Analysis by Optical Emission Spectrometry (OES) with spark excitation.*

ISO 648:1977, *Laboratory glassware – One-mark pipettes.*

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