



NSAI
Standards

Irish Standard
I.S. EN 890:2012

Chemicals used for treatment of water intended for human consumption - Iron (III) sulfate solution

I.S. EN 890:2012

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN 890:2004

This document is based on: EN 890:2012
Published: 9 July, 2012

This document was published under the authority of the NSAI and comes into effect on:
9 July, 2012

ICS number:
71.100.80

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

English Version

Chemicals used for treatment of water intended for human consumption - Iron (III) sulfate solution

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Sulfate de fer (III) liquide

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Eisen(III)sulfat-Lösung

This European Standard was approved by CEN on 24 May 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

	Page
Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Description	6
3.1 Identification.....	6
3.2 Commercial forms	7
3.3 Physical properties.....	7
3.4 Chemical properties	8
4 Purity criteria.....	8
4.1 General.....	8
4.2 Composition of commercial product.....	8
4.3 Impurities and main by-products	8
4.4 Chemical parameters	9
5 Test methods.....	9
5.1 Sampling.....	9
5.2 Analyses	10
6 Labelling – Transportation – Storage.....	12
6.1 Means of delivery.....	12
6.2 Labelling according to the EU Legislation.....	13
6.3 Transportation regulations and labelling.....	13
6.4 Marking	14
6.5 Storage.....	14
Annex A (informative) General information on iron (III) sulfate solution	15
A.1 Origin	15
A.1.1 Raw materials.....	15
A.1.2 Manufacturing process	15
A.2 Quality of commercial product.....	15
A.3 Use	19
A.3.1 Function.....	19
A.3.2 Form in which it is used	19
A.3.3 Treatment dose	19
A.3.4 Means of application	19
A.3.5 Secondary effects	19
A.3.6 Removal of excess product.....	19
Annex B (normative) Analytical methods	20
B.1 Determination of iron (III) sulfate	20
B.1.1 Total iron.....	20
B.1.2 Determination of iron (II) (Fe (II)).....	21
B.1.3 Determination of iron (III) (Fe (III)).....	22
B.2 Determination of manganese	22
B.2.1 General.....	22
B.2.2 Principle.....	22
B.2.3 Reagents.....	22
B.2.4 Apparatus	23
B.2.5 Procedure	23
B.3 Determination of insoluble matters	24
B.3.1 General.....	24
B.3.2 Principle.....	24
B.3.3 Reagents.....	24

B.3.4	Apparatus	24
B.3.5	Procedure	25
B.3.6	Calculation	25
B.3.7	Precision.....	25
B.4	Determination of free acid	25
B.4.1	General.....	25
B.4.2	Principle.....	25
B.4.3	Interferences	26
B.4.4	Reagents.....	26
B.4.5	Apparatus	26
B.4.6	Procedure	26
B.4.7	Calculation	26
B.5	Determination of arsenic, antimony and selenium by hydride generation atomic absorption spectrometry (AAS).....	27
B.5.1	General.....	27
B.5.2	Principle.....	27
B.5.3	Reagents.....	27
B.5.4	Apparatus	28
B.5.5	Procedure	28
B.6	Determination of mercury by cold vapour atomic absorption spectrometry (AAS).....	30
B.6.1	General.....	30
B.6.2	Principle.....	31
B.6.3	Reagents.....	31
B.6.4	Apparatus	31
B.6.5	Procedure	32
B.7	Determination of cadmium, chromium, nickel and lead by graphite furnace atomic absorption spectrometry (AAS).....	32
B.7.1	General.....	32
B.7.2	Principle.....	33
B.7.3	Reagents.....	33
B.7.4	Apparatus	33
B.7.5	Procedure	34
Annex C	(informative) Reduction of Fe (III) on a silver column.....	36
C.1	General.....	36
C.2	Principle.....	36
C.3	Reagents.....	36
C.4	Apparatus	36
C.5	Procedure	36
C.5.1	Preparation of the silver powder.....	36
C.5.2	Reduction of Fe (III)	37
Annex D	(informative) Determination of cadmium, chromium, nickel and lead (inductively coupled plasma optical emission spectrometry (ICP/OES)).....	38
D.1	General.....	38
D.2	Principle.....	38
D.3	Reagents.....	38
D.4	Apparatus	39
D.5	Procedure	39
D.5.1	Spectrometer settings.....	39
D.5.2	Calibration, measurement and calculation of the elements cadmium, chromium, nickel and lead.....	39
Annex E	(normative) General rules relating to safety	40
E.1	Rules for safe handling and use	40
E.2	Emergency procedures	40
E.2.1	First aid	40
E.2.2	Spillage	40
E.2.3	Fire	40
Bibliography	41

Foreword

This document (EN 890:2012) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

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 January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 890:2004.

Significant technical differences between EN 890:2012 and EN 890:2004 are as follows:

- a) change of the maximum allowed percentage of mass fraction of insoluble matter in the product from 0,3 % to 0,5 % (see Table 2);
- b) update of the information of risk and safety labelling of the product to comply with the new regulations (see 6.2 and [2]);
- c) change of the method for determination of iron (III) sulfate in order to avoid the use of hazardous potassium dichromate (see B.1).

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this document:

- a) this document provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE Conformity with this standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this document is subject to regulation or control by National Authorities.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-