

<b>STN</b>	<b>Chemická analýza železných materiálov. Optická emisná spektrometrická analýza s indukčne viazanou plazmou nelegovaných a nízkolegovaných ocelí. Stanovenie Si, Mn, P, Cu, Ni, Cr, Mo a Sn po rozpustení v kyseline dusičnej a kyseline sírovej (rutinná metóda).</b>	<b>STN EN 10355</b>
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Chemical analysis of ferrous materials - Inductively coupled plasma optical emission spectrometric analysis of unalloyed and low alloyed steels - Determination of Si, Mn, P, Cu, Ni, Cr, Mo and Sn, following dissolution with nitric and sulphuric acids [Rou

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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English Version

Chemical analysis of ferrous materials - Inductively coupled  
plasma optical emission spectrometric analysis of unalloyed and  
low alloyed steels - Determination of Si, Mn, P, Cu, Ni, Cr, Mo  
and Sn, following dissolution with nitric and sulphuric acids  
[Routine method]

Analyse chimique des matériaux ferreux - Analyse des  
aciers non alliés et faiblement alliés par spectrométrie  
d'émission optique avec source à plasma induit -  
Détermination de Si, Mn, P, Cu, Ni, Cr, Mo et Sn, après  
mise en solution par les acides nitrique et sulfurique  
[Méthode de routine]

Chemische Analyse von Eisenwerkstoffen - Analyse von  
unlegierten und niedrig legierten Stählen mittels optischer  
Emissionsspektrometrie mit induktiv gekoppeltem Plasma -  
Bestimmung von Si, Mn, P, Cu, Ni, Cr, Mo und Sn nach  
Lösen in Salpeter- und Schwefelsäure [Routineverfahren]

This European Standard was approved by CEN on 29 June 2013.

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## Foreword

This document (EN 10355:2013) has been prepared by Technical Committee ECISS/TC 102 “Methods of chemical analysis for iron and steel”, the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

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## 1 Scope

This European Standard specifies an inductively coupled plasma optical emission spectrometry routine method for the analysis of unalloyed and low alloyed steels, whose iron content shall be at least 95 %. This standard differs from the similar standard EN 10351:2011 in that it is optimised for the determination of silicon.

This method is applicable to the elements listed in Table 1 within the ranges shown.

The sample preparation described may not completely dissolve samples having a combination of high chromium and substantial carbon. Incomplete dissolution may also affect the determination of manganese and molybdenum in these samples. For this reason, the scope of the method is limited to chromium contents  $\leq 0,9$  %, whereas the scope of EN 10351 covers a range of up to 1,6 % chromium.

**Table 1 — Application ranges**

Element	Mass fraction %	
	min.	max.
Si	0,020	0,45
Mn	0,005	1,40
P	0,005	0,10
Cu	0,005	0,60
Ni	0,010	2,00
Cr	0,010	0,90
Mo	0,005	0,60
Sn	0,010	0,10

NOTE For tin, see NOTE 2 under Clause 11.

In all cases, the ranges specified can be extended or adapted (after validation) for the determination of other mass fractions, provided that the iron content in the samples under concern is above 95 %.

Other elements may be included. However such elements and their mass fractions should be carefully checked, taking into account the possible interferences, the sensitivity, the resolution and the linearity criteria of each instrument and each wavelength.

Depending also on the sensitivity of each instrument, suitable dilutions of the calibration and the test sample solutions may be necessary.

Moreover, even if the method described is "multi elemental", it is not absolutely necessary to carry out the determination of all the elements of its scope simultaneously. The measurement conditions have to be optimised by each laboratory, depending on the performances of each apparatus available.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 648, *Laboratory glassware — Single-volume pipettes (ISO 648)*

EN ISO 1042, *Laboratory glassware — One-mark volumetric flasks (ISO 1042)*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**