

**SN**

**INDUSTRY STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**SN/T 4020-2013**

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**Determination of impurity elements content in pure iron. X-ray  
fluorescence spectrometry  
(English Translation)**

**Issued on: November 6, 2013**

**Implemented on: June 1, 2014**

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**Issued by: General Administration of Customs**

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### Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard is proposed and managed by the National Certification and Accreditation Administration Committee.

This standard was drafted. Shanxi People's Republic of China Exit Inspection and Quarantine, Taigang Stainless Steel.

### 1 Scope

This standard specifies the wavelength dispersion of iron impurity elements in X-ray fluorescence spectrometric method.

This standard applies to the determination of impurity elements in silicon iron, manganese, phosphorus, sulfur, chromium, copper, nickel and aluminum content, the measurement range of the elements shown in Table 1.

Table 1 Determination of iron in the range of impurity elements% (mass fraction)

Element measurement range Si 0.017 ~ 0.506 Mn 0.034 ~ 0.358 P 0.0019 ~ 0.040 S 0.0022 ~ 0.031 Cr 0.016 ~ 0.170 Cu 0.020 ~ 0.254 Ni 0.020 ~ 0.203 Al 0.050 ~ 0.432

### 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1031 Geometrical product specifications (GPS) Surface texture Profile method  
Surface roughness parameters and their values GB/T 16597 metallurgical product analysis  
X-ray Fluorescence Spectrometry General

### 3 Method summary

The measurement surface of the sample is processed into smooth plane, at selected measuring instrument conditions, measure the analyte in the sample characteristic spectrum X Ray fluorescence intensity, according to the quantitative relationship between X-ray fluorescence intensity between the analyte content, select the appropriate regression method and the number of schools Positive mode, calculate the amount of analyte.

### 4 Reagents and materials

#### 4.1

detector gas (P-10). 90% argon, 10% methane for gas-flow proportional counter.

#### 4.2

Standard substance. pure iron spectral analysis with standard specimens. Each element should be at least six standard material, the content should be a certain interval, and covered Cover the measurement range of the analyte.