

ICS 77.120.10
H 12



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

中华人民共和国国家标准

GB/T 14849.2-2007
Replace GB/T 14849.2-1993

**Methods for chemical analysis of silicon metal--
Part 2: Determination of aluminum
content—Chrome azurol S spectrophotometric
method**

**工业硅化学分析方法 第2部分：铝含量的测定铬天青
-S 分光光度法**

Issued on October 25, 2007

Implemented on April 1, 2008

**Issued by General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China and Committee of
Standardization Administration of the People's Republic of China**

Contents

Foreword	1
1 Scope	2
2 Method summary	2
3 Reagents	2
4 Instruments	3
5 Sample	3
6 Analytical steps	3
7 Calculation of the analysis results	4
8 Precision	5
9 Quality assurance and control	5

Foreword

GB/T 14849 *Methods for Chemical Analysis of Silicon Metal* is divided into four parts:

——Part 1: Determination of iron content - 1, 10-phenanthroline spectrophotometric method;

——Part 2: Determination of aluminum content - chrome azurol-S spectrophotometric method;

——Part 3: Determination of calcium content - flame atomic absorption spectrometry, chlorophosphonazo I spectrophotometric method;

——Part 4: Inductively coupled plasma-atomic emission spectrometry to determine element content.

This is Part 2 of GB/T 14849.

This Part will replace GB/T 14849.2-1993 Silicon metal--Determination of aluminium content--Chrome azurol S spectrophotometric method, comparison with GB/T 14849.2-1993, main changes are as follows:

——“repeatability” and “quality assurance and control” is added.

This Part is proposed by China Nonferrous Metals Industry Association.

This Part is under the jurisdiction of the National Technical Committee on Nonferrous Metals of Standardization.

This Part is drafted by the unit of Fushun Aluminium Co., Ltd.

Main drafters of this Part: Xu Tieling, Ji Chunlei, Yang Yuhong and Xu Tieling.

The release conditions of previous versions of the standards replaced by this Part are as follows:

——GB/T 14849.2-1993

Methods for chemical analysis of silicon metal-- Part 2:

Determination of aluminum content—Chrome azurol S spectrophotometric method

1 Scope

This Part specifies the method for determination of aluminum content in silicon metal.

This Part applies to the determination of aluminum content in silicon metal. Determination range (quality fraction): 0.02%~0.30%

2 Method summary

The specimen is decomposed with hydrofluoric acid and nitric acid, sulfuric acid smoking removes silicon, fluorine, etc. and the residue is dissolved with hydrochloric acid. Ascorbic acid is used to mask the interference of ferrum. A purplish red complex compound is formed by the reaction between aluminum and chrome azurol-S in hexamethylenetetramine medium of pH5.5-6.1. Use the spectrophotometer with wavelength of 545 nm to determine the absorbance.

3 Reagents

3.1 Hydrofluoric acid (ρ 1.14g/mL)

3.2 Nitric acid (1+1)

3.3 Sulfuric acid (1+1)

3.4 Hydrochloric acid (1+1)

3.5 Ascorbic acid solution (10g/L). Prepare it when use it

3.6 Hexamethylenetetramine solution (300g/L)

3.7 Chrome azurol S acetic acid solution (0.3g/L): 0.30g chrome azurol-S is put into a beaker, and 25mL water and 25mL anhydrous alcohol are added. 475mL water is added after dissolution, and the homogenized sample is diluted to 1000mL with anhydrous alcohol, evenly mixed.

3.8 Aluminum standard storage solution: 0.2500g metal aluminum is put into a polyethylene cup. Then about 20mL water and 3.0g sodium hydroxide is added. After the reaction slows down, heat it on the water bath until dissolving completely. Hydrochloric acid (3.4) is used for slow neutralization until precipitation appears. Then excessive 20mL



北京文心雕语翻译有限公司
Beijing Lancarver Translation Inc.

完整版本请在线下单/Order Checks Online for Full Version

联系我们/or Contact :

TEL: 400-678-1309

QQ: 19315219 | Skype: Lancarver

Email : info@lancarver.com

<http://www.lancarver.com>

线下付款方式 :

I. 对公账户 :

单位名称 : 北京文心雕语翻译有限公司

开 户 行 : 中国工商银行北京清河镇支行

账 号 : 0200 1486 0900 0006 131

II. 支付宝账户 : info@lancarver.com

III. Paypal: info@lancarver.com

注: 付款成功后, 请预留电邮, 完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱, 如需索取发票, 下单成功后的三个工作日内安排开具并寄出, 预祝合作愉快!

NOTE All documents on the store are in electronic Adobe Acrobat PDF format, there is not sell or ship documents in hard copy. Mail the order and payment information to info@lancarver.com, you will shortly receive an e-mail confirming your order.

