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

YS/T 569.7-2015

Replacing YS/T 569.7-2006

**Methods for chemical analysis of thallium. Part 7: Determination
of aluminum content. Chrome azurol S spectrophotometry**

铊化学分析方法 第7部分：铝量的测定 铬天青S分光光度法

(English Translation)

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Foreword

YS/T 569 "thallium chemical analysis method" is divided into 10 parts.

- Part 1. Determination of copper content copper reagent chloroform extraction spectrophotometry;
- Part 2. Determination of iron content - Phenanthroline spectrophotometric method;
- Part 3. Determination of mercury content of Diphenylthiocarbazone extraction spectrophotometry;
- Part 4. Determination of zinc content of benzene extraction dithizone spectrophotometry;
- Part 5. Determination of cadmium content of benzene extraction dithizone spectrophotometry;
- Part 6. Determination of lead content of benzene extraction dithizone spectrophotometry;
- Part 7. Determination of the amount of chrome aluminum Azure S Spectrophotometry;
- Part 8. Determination of indium content of crystal violet benzene extraction spectrophotometry;
- Part 9. Determination of the amount of silicon molybdenum blue isoamyl alcohol extraction spectrophotometric method;
- Part 10. Determination of the amount of thallium Na₂EDTA titration.

This section YS/T 569 Part 7.

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

The partial replacement of YS/T 569.7-2006 "Thallium - Determination of aluminum content (chrome azure S photometric method)" (the original GB 2592.7-1981).

This portion of YS/T 569.7-2006 compared to the main changes are as follows.

--- Text format has been modified;

--- Increased test reporting requirements.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) and focal points.

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1 Scope

YS/T 569 This part provides for determination of thallium in aluminum content.

This section applies to the determination of the amount of thallium in aluminum.

Measurement range. 0.0005% to 0.0030%.

2 Method summary

Sample dissolved in nitric acid, at a pH of hexamethylenetetramine medium 5 to 6, the aluminum and chrome azure S generated purple complex in 560nm wavelength spectrophotometer measured absorbance.

3 Reagents

3.1

hydrochloric acid ($\rho = 1.19\text{g/mL}$).

3.2

hydrochloride (11).

3.3

hydrochloride (496).

3.4

nitric acid (11).

3.5

Aqueous ammonia (11).

3.6

thiourea saturated solution.

3.7

sodium sulfite solution (20g/L). the time is now equipped with.

3.8

hexamethylenetetramine solution (200g/L).

3.9

bromocresol green solution (0.5g/L). Weigh 0.05g bromocresol green dissolved in ethanol 50mL, add water to dilute release 100mL, Shake well.

3.10

Chromium Azure S solution (0.5g/L). Weigh 0.1g Chromium Azure S with 50mL ethanol dissolved, add water to dilute release 200mL, Shake well.

3.11

Aluminum Standard stock solution. Weigh 0.5000g of aluminum (wAl $\geq$ 99.99%) into 300mL beaker, was added 20mL of hydrochloric acid (3.2), After heating dissolved, add a small amount of water, heated to boiling, cooled and transferred to 1000mL volumetric flask, dilute to the mark, shake. This solution 1mL Aluminum-containing 500 μ g.

3.12

aluminum standard solution. Pipette 5.00mL aluminum standard stock solution (3.11), placed in 500mL volumetric flask, hydrochloric acid was added 2mL (3.2), diluted with water to the mark. This solution 1mL aluminum-containing 5 μ g.

4 Instrument

Spectrophotometer.