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YS

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

YS/T 520.6-2007

Replacing YS/T 520.6-2006

**Chemical analysis of gallium. Part 6: Determination of tin
content. The salicylfluorone cetylrimethylammonium bromide
spectrophotometric method**

镓化学分析方法 第6部分：锡含量的测定水杨基荧光酮-溴化十六烷基三甲基胺分
光光度法

(English Translation)

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Foreword

YS/T 520-2007 "Chemical analysis of gallium" Is the YS/T 520-2006 (formerly GB/T 4375-1984) amendments, divided into Part 12.

--- Part 1. Determination of copper content of 2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline spectrophotometry

--- Part 2. Determination of lead content of 4- (2-pyridyl) - resorcinol spectrophotometry

--- Part 3. Determination of aluminum content Chromazurol S- tetradecyl pyridine bromide spectrophotometric method

--- Part 4. Determination of iron content of 4,7-diphenyl-1,10-phenanthroline spectrophotometry

--- Part 5. Determination of calcium content nitrous oxide - acetylene flame atomic absorption spectrometry

--- Part 6. Determination of tin content salicylfluorone - cetyl trimethyl ammonium bromide, spectrophotometry

--- Part 7. Determination of silicon content extraction - molybdenum blue spectrophotometric method

--- Part 8. Determination of indium content of ethyl violet spectrophotometry

--- Part 9. Determination of germanium content Phenylfluorone - polyethylene glycol octyl phenyl ether extraction spectrophotometric method

--- Part 10. Determination of zinc content atomic absorption spectrometry

--- Part 11. Determination of mercury content of the cold atomic absorption spectrometry

--- Part 12. lead, copper, nickel, aluminum, indium and zinc Determination of chemical spectroscopy Part is divided into 6 sections.

The partial replacement of YS/T 520.6-2006 (formerly GB/T 4375.6-1984).

This part is YS/T 520.6-2006 "Chemical analysis of gallium - Part 6. Determination of tin content salicylfluorone - bromide Cetyl trimethyl ammonium spectrophotometry "editorial finishing.

The non-ferrous metal part by the National Standardization Technical Committee and centralized.

This standard by the Aluminum Corporation of China Shandong branch responsible for drafting.

Drafters of this section. Chen Jianli, Wang Li set, Qi Yanli, Tian Rui.

The non-ferrous metal part by the National Standardization Technical Committee responsible for the interpretation.

This part of the standard replaces the previous editions are.

--- YS/T 520.6-2006 (formerly GB/T 4375.6-1984).

Chemical analysis of gallium Determination of tin content. Part 6 Salicylfluorone - cetyl trimethyl ammonium bromide Spectrophotometry

1 Scope

This section provides the determination of tin content in gallium.

This section applies to the determination of tin content in gallium. Measurement range. 0.00005% to 0.020%.

2 Method summary

Sample with nitric acid, sulfuric acid dissolution. Potassium iodide in 8mol/L sulfuric acid medium, to extract tin benzene, back-extracted with dilute sulfuric acid. Anti Ascorbic acid reduction of free iodine in 2mol/L sulfuric acid solution, tartaric acid as the catalyst, tin and salicylfluorone - cetyltrimethylammonium Ammonium form a yellow complex. 509nm wavelength spectrophotometer measured absorbance.

3 Reagents

3.1

benzene.

3.2 Nitrate ($\rho=1.42\text{g/cm}^3$)

3), pure class distinctions.

3.3 Sulfate ($\rho=1.84\text{g/cm}^3$)

3), pure class distinctions.

3.4 sulfuric acid (1 + 1), pure class distinctions.

3.5 sulfuric acid (1 + 4), pure class distinctions.

3.6 sulfuric acid (1 + 24), pure class distinctions.

3.7 sulfuric acid (1 + 49), pure class distinctions.

3.8 potassium iodide solution (500g/L).

3.9 ascorbic acid solution (100g/L).

3.10 tartaric acid solution (200g/L).

3.11 salicylfluorone solution (0.3g/L). Weigh 0.09g salicylfluorone dissolved in 180mL of ethanol and 0.5mL of sulfuric acid (3.4), diluted with water to 300mL, stored in a brown bottle and set aside.

3.12 cetyl trimethyl ammonium bromide solution. Weigh 1.82g cetyl trimethyl ammonium bromide, dissolved in water and diluted to 500mL.

3.13 Storage tin standard solution. Weigh 1.0000g pure tin [$\text{Sn} \geq 99.99\%$], placed in 300mL beaker, add 50mL sulfuric acid (3.3), dissolved by heating and cooling. With sulfuric acid (3.5) and the solution was transferred to 1000mL volumetric flask and dilute to volume, and mix. This solution 1mL containing 1.0mg tin.

3.14 tin standard solution. Pipette 25.00mL tin standard stock solution (3.13) was placed in 250mL volumetric flask, dilute sulfuric acid (3.7) to Volume, and mix. This solution 1mL containing 100 μg tin.

3.15 tin standard solution. Pipette 25.00mL tin standard solution (3.14) into 250mL volumetric flask, dilute to the mark with sulfuric acid (3.7) Degree, and mix. 1mL containing 10 μg solution tin.

4 Instrument

Spectrophotometer.