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

YS/T 1075.7-2015

**Methods for chemical analysis of vanadium-aluminium and
molybdenum-aluminium master alloys. Part 7: Determination of
oxygen content. Inert gas fusion-infrared method**

钒铝、钼铝中间合金化学分析方法 第7部分：氧量的测定 惰气熔融-红外法
(English Translation)

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Foreword

YS/T 1075 "aluminum vanadium, molybdenum intermediate aluminum alloy chemical analysis method" including a total of 8 sections.

- Part 1. Determination of iron content - 1,10-phenanthroline spectrophotometry;
- Part 2. Determination of molybdenum content of lead molybdate gravimetric method;
- Part 3. Determination of silicon content - Molybdenum blue spectrophotometric method;
- Part 4. vanadium content - Inductively coupled plasma atomic emission spectrometry and ferrous ammonium sulfate titration;
- Part 5. Determination of aluminum content EDTA titration;
- Part 6. Determination of carbon content in the high-frequency combustion - infrared absorption method;
- Part 7. Determination of the amount of oxygen in the inert gas fusion - infrared method;
- Part 8. molybdenum, aluminum X- determining the amount of fluorescence spectroscopy.

This section YS/T 1075 Part 7.

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

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

This section is drafted. big Chengde Vanadium Industry Co., Ltd., Northwest Nonferrous Metal Research Institute, Shangluo Amano Advanced Materials Co., Ltd.

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1 Scope

YS/T 1075 This section provides the vanadium aluminum, master alloys determination of molybdenum in the amount of oxygen.

This section applies to vanadium aluminum, master alloys determination of molybdenum in the amount of oxygen. Measurement range. 0.010% to 0.30%.

2 Method summary

In an inert atmosphere, is heated to a molten sample pulses, i.e. pulses containing sample melted in the furnace graphite crucible. Samples of different forms Oxygen at high temperatures to generate a large number of small amounts of CO and CO₂ with the graphite crucible, which along with the heat carrier gas flow rare earth copper oxide, so that Conversion of CO to CO₂. Then, the mixed gas stream into the cell infrared detector, the oxygen content of the sample was measured.

3 Reagents

3.1

Carrier gas. argon or helium (volume fraction $\geq 99.99\%$).

3.2

Power gas. oil-free compressed air.

3.3

Nickel bag (thickness $\leq 0.05\text{mm}$, wO $\leq 0.001\%$).

3.4

sets graphite crucible.

3.5

standard sample.

4 Instrument

The inert gas fusion - thermal conductivity/IR detection system (including one electrode furnace, purification and analysis of a carrier gas stream conversion systems, carbon monoxide red External infrared detectors and carbon dioxide detectors, computers and software control system).

Recommended Instruments working conditions are as follows.

Minimum analysis time. 40s; exhaust Power. 6000W; analysis of power. 5000W.

5 Sample

The specimen shall crush a particle size less than 500 μ m. If oil is required with an organic reagent acetone, dry before testing.

6.1 Sample

Weigh 0.040g ~ 0.070g sample (Chapter 5), accurate to 0.0001g.