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COPY

Results of Test

Reference Material for Gaseous Elements in Iron and Steel

(for Oxygen and Nitrogen Analysis)

JSM M401-19

1、Introduction

This reference material is intended to be used to confirming instrument performance and validate the analysis of oxygen and nitrogen in iron and steel.

This reference material is pin-shaped (0.5 grams/pin) and is supplied as 100 pins/bottle.

2、Measured values of oxygen and nitrogen

(ppm)

Sample name	JSM M401-19	
Element	Oxygen	Nitrogen
1st	7.3	54.8
2nd	7.5	53.9
3rd	7.7	55.2
4th	7.5	52.7
5th	7.5	53.2
6th	7.4	54.5
7th	7.6	52.8
8th	8.5	53.0
9th	8.0	53.0
10th	8.6	53.8
Average	7.8	53.7
Range	1.3	2.5
σ_{n-1}	0.4_6	0.8_9

1) The measured values are traceable to the Japanese Iron and Steel Certified Reference Materials (JSS).

Oxygen: JSS 390-1(4.2ppm)、JSS 383-1(11ppm)、JSS 384-1(21ppm)、JSS 387-1 (179ppm)

Nitrogen: JSS 366-8(7.5ppm)、JSS 030-8(33ppm)、JSS 604-9(174ppm)、JSS 654-15(209ppm)

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3、Weight of the reference material

The weight test of the reference material was carried out with an electronic force balance; QUINTIX224-1S (made by Sartorius company, reading limit 0.1mg).

(g)

Sample name	JSM M401-19
1st	0.501_5
2nd	0.501_6
3rd	0.499_8
4th	0.500_7
5th	0.500_9
6th	0.499_8
7th	0.500_4
8th	0.500_3
9th	0.499_9
10th	0.501_6
Average	0.500_6
Range	0.001_8
σ_{n-1}	0.000_7

4、Caution

1) Take care to ensure correct measurement:
   - Do not leave the bottle open.
   - Do not put the material into another bottle. Please do not return it to the same bottle after use.
   - Do not touch the material with bare hands.
2) Store in a desiccator in a controlled clean laboratory.

5、Analysis method

Element	Analysis
Oxygen	Infrared absorption method after fusion under inert gas (JIS G 1239)
Nitrogen	Thermal conductometric method after fusion in a current of inert gas (JIS G 1228)

6、Inquiries

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