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Certificate of Certified Reference Material

NCS NS 41005a

NCS NS 41005b

O, N in Steel

Issued in 2012

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

Certified Values and Extended uncertainty

No.		O	N
NCS NS 41005a	Certified Value (%)	0.00087	0.0084
	Extended uncertainty(%)	0.00004	0.0002
NCS NS 41005b	Certified Value (%)	0.00080	0.0084
	Extended uncertainty(%)	0.00004	0.0003

Note:

$$\text{Extended Uncertainty: } U = k u_{\text{CRM}}; \quad u_{\text{CRM}} = \sqrt{u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{its}}^2 + u_{\text{sts}}^2}; \quad u_{\text{char}} = s / \sqrt{n}$$

U_{CRM} combined uncertainty; U_{bb} between bottle uncertainty;
 U_{its} long time stability uncertainty, neglectable;
 U_{sts} short time stability uncertainty, neglectable;
 U_{char} standard uncertainty of analysis;
 s standard deviation;
 n number of data;
 k cover factor;
 $k=2$ with confidence interval at 95%.

- 1.The certified value is the mean of analytical results of 9 independent laboratories.
- 2.The sample is ball with D6.18mm packed in plastic bottle.
The minimum package is 20 pieces.
- 3.The sample should be washed by dithylether and acetone before use.
- 4.The sample should be stored at dry place.
- 5.The valid time of the sample is 15 years, although we reserve the right to make change as issue revisions.

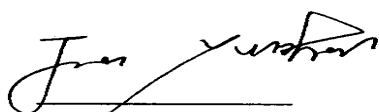
Analytical Methods

Oxygen

Pulse- infrared method

Nitrogen

Pulse -thermal conductometric method



Jia Yunhai
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