

Certificate of Certified Reference Material

NCS DC 60107a — NCS DC 60108a

Limestone

Reissued in 2008

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

### Certified Values and Standard Deviation

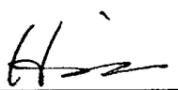
No.		Chemical composition (%)							
		SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	CaO	MgO	K <sub>2</sub> O	Na <sub>2</sub> O
NCS DC 60107a	Certified Values	1.09	0.24	0.11	0.010	54.03	0.81	0.084	0.017
	Standard Deviation	0.11	0.02	0.02	0.002	0.09	0.06	0.003	0.007
NCS DC 60108a	Certified Values	2.09	0.33	0.17	0.015	51.61	2.25	0.17	0.017
	Standard Deviation	0.06	0.03	0.03	0.002	0.15	0.08	0.01	0.006
		MnO	P <sub>2</sub> O <sub>5</sub>	SO <sub>3</sub>	Cl	fSiO <sub>2</sub> *	L.O.I.	CO <sub>2</sub>	
NCS DC 60107a	Certified Values	0.0067	0.0081	0.018	0.0028	0.67	43.12	(43.12)	
	Standard Deviation	0.0013	0.0005	0.006	0.0004	0.02	0.03		
NCS DC 60108a	Certified Values	0.0089	0.0061	0.016	0.0066	1.38	42.84	(42.59)	
	Standard Deviation	0.0022	0.0017	0.003	0.0020	0.03	0.07		

Note:

- \* Free SiO<sub>2</sub>, value in ( ) is for reference only.
- Certified values are calculated according to analytical results of 5 independent laboratories.
- The sample is packed in glass bottle with size -200 meshes. The minimum package is 50 grams.
- Stove it in the oven with a temperature of 105°C for two hours before use and stored in drier.
- The minimum weight for analysis is 0.1g.
- The valid time of the sample is 10 years, although we reserve the right to make change as issue revisions

### Analytical Methods

Composition	Analytical Methods
SiO <sub>2</sub>	Gravimetric method by drying with the vapor of HCl Potassium silicate volumetric method Colorimetric method with molybdenum blue
Al <sub>2</sub> O <sub>3</sub>	Colorimetric method with aluminium reagent Colorimetric method with chromium green S EDTA titrimetric method
Fe <sub>2</sub> O <sub>3</sub>	Colorimetric method with sulfo-salicylic acid 1,10-phenanthroline photometric method Atomic absorption spectrophotometry
TiO <sub>2</sub>	Colorimetric method with diantipyrylmethane
CaO	EDTA titration method
MgO	EDTA titration method Atomic absorption spectrophotometry
K <sub>2</sub> O	Flame emission spectrometric method Atomic absorption spectrophotometry
Na <sub>2</sub> O	Flame emission spectrometric method Atomic absorption spectrophotometry
MnO	Atomic absorption spectrophotometry Colorimetric method with potassium periodate
P <sub>2</sub> O <sub>5</sub>	Colorimetric method with ammonium vanadate and molybdate Phosphorus molybdenum blue photometric method
SO <sub>3</sub>	Iodate titrimetric method by combustion Coulombic method
Cl	Colorimetric method with mercury thiocyanate Distillation method
fSiO <sub>2</sub>	Gravimetric method with phosphoric acid
L.O.I.	Gravimetric method by combustion
CO <sub>2</sub>	Combustion-gravimetric method Neutralization titrimetric method with HCl



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