

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:

- 1. \* Free SiO<sub>2</sub>, value in ( ) is for reference only.
- 2. Certified values are calculated according to analytical results of 5 independent laboratories.
- 3. The sample is packed in glass bottle with size –200 meshes. The minimum package is 50 grams.
- 4. Stove it in the oven with a temperature of 105°C for two hours before use and stored in drier.
- 5. The minimum weight for analysis is 0.1g.
- 6. 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 tritrimetric 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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