



Certificate of Certified Reference Material

NCS FC 11001 – FC 11014

Coal

Reissued in 2025

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

Certified Values and Uncertainty

(Certified on Feb. 2025)

No.		Total Sulfur (%)	Ash (%)	Volatile Matter (%)	Calorific Value (MJ/kg)	Carbon (%)	Hydrogen (%)	Nitrogen (%)	True Specific Gravity (20 °C)	Coal Type
NCS FC 11001	Certified Value	0.24	10.18	29.95	28.45	72.48	3.96	1.05	1.49	bitumite
	Uncertainty	0.04	0.11	0.30	0.09	0.39	0.11	0.05	0.03	
NCS FC 11002	Certified Value	0.42	6.41	30.76	28.34	73.89	3.83	0.90	1.52	bitumite
	Uncertainty	0.04	0.15	0.45	0.15	0.46	0.11	0.06	0.02	
NCS FC 11003	Certified Value	0.46	20.15	26.47	22.40	61.38	2.69	0.68	1.76	bitumite
	Uncertainty	0.04	0.18	0.32	0.08	0.33	0.11	0.05	0.02	
NCS FC 11004	Certified Value	0.79	9.19	32.12	26.34	70.01	3.44	0.85	1.59	bitumite
	Uncertainty	0.04	0.12	0.43	0.14	0.42	0.10	0.06	0.03	
NCS FC 11005	Certified Value	0.97	10.16	30.64	26.08	69.48	3.32	0.79	1.61	bitumite
	Uncertainty	0.04	0.12	0.41	0.15	0.35	0.10	0.05	0.03	
NCS FC 11006	Certified Value	1.55	16.23	18.71	27.34	70.96	3.22	1.03	1.56	bitumite
	Uncertainty	0.07	0.17	0.25	0.11	0.35	0.10	0.05	0.03	
NCS FC 11007	Certified Value	1.76	12.45	31.54	25.12	67.16	3.32	0.80	1.63	bitumite
	Uncertainty	0.07	0.16	0.39	0.13	0.46	0.10	0.05	0.03	
NCS FC 11008	Certified Value	1.58	25.61	28.83	22.16	57.11	3.33	0.91	1.67	bitumite
	Uncertainty	0.06	0.22	0.30	0.10	0.38	0.10	0.05	0.04	
NCS FC 11009	Certified Value	1.82	15.63	23.34	26.64	68.82	3.27	0.92	1.58	bitumite
	Uncertainty	0.06	0.21	0.31	0.14	0.36	0.10	0.05	0.05	
NCS FC 11010	Certified Value	0.43	13.25	10.51	30.28	78.17	3.22	1.18	1.49	anthracite
	Uncertainty	0.04	0.22	0.25	0.14	0.43	0.10	0.07	0.03	
NCS FC 11011	Certified Value	1.09	9.14	10.24	32.13	82.34	3.36	1.25	1.45	anthracite
	Uncertainty	0.05	0.12	0.25	0.18	0.54	0.10	0.05	0.03	
NCS FC 11012	Certified Value	1.58	10.75	9.31	31.48	80.60	3.25	0.98	1.48	anthracite
	Uncertainty	0.07	0.13	0.21	0.14	0.68	0.11	0.05	0.02	
NCS FC 11013	Certified Value	0.62	6.90	32.68	27.65	72.33	3.78	0.91	1.54	bitumite
	Uncertainty	0.04	0.15	0.44	0.15	0.43	0.13	0.05	0.03	
NCS FC 11014	Certified Value	0.39	6.21	34.00	30.54	76.27	4.42	1.00	1.43	bitumite
	Uncertainty	0.04	0.12	0.32	0.13	0.57	0.11	0.07	0.03	

Note:

- 1.All values are expressed on dry bases. Calorific value is high value of dry base.
- 2.Each certified value is the mean of analytical results of 8 independent laboratories.
Uncertainty(Δx) is calculated by $\Delta x = t_{\alpha(m-1)} S_T$. In above formula, $t_{\alpha(m-1)}$ is confidence coefficient of t-distribution, α is confidence level and S_T is standard deviation.
Uncertainty is expanded uncertainty at 95% confidence level.
- 3.The sample is powder with size <0.2mm packed in glass bottle.
The minimum package is 50 grams. The minimum weight for analysis S is 0.05g, for ash is 1.0g.
- 4.The sample should be stored in cold and dry place.
- 5.The certified values are redetermined once every year and customers will be informed if there is any change in certified values.

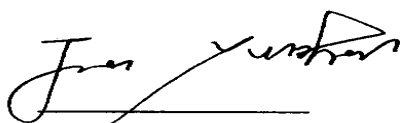
Analytical Methods

Item	Analytical method
Total Sulfur	GB/T214—2007 method of determination of total sulfur in coal
Ash and Volatile	GB212—2008 analytical method of coal for industry
Calorific Value	GB/T213—2008 method of determination of calorific value of coal
Carbon, Hydrogen, Nitrogen	GB476—2008 method of determination of elements in coal, GB/T19227-2008 method of determination of carbon and hydrogen in coal, galvanometric-gravimetric method
True Specific Gravity	GB/T217—2008 method of determination of true specific gravity of coal

Statement:

This material is used only in labs and for analysis work, producer will be not responsible for any problem caused by misuse or not properly store.

Please check carefully the package, quantity and type of the material after receiving it. Related compensation is only limited in the certified materials, any other losses will be not included.



Jia Yunhai

Laboratory Director