

CERTIFIED REFERENCE MATERIAL

CERTIFICATE OF ANALYSIS

CRM set GSO 2507-83, GSO 2508-83, GSO 2509-83

BLACK SOIL

1. CERTIFIED VALUES (dried at 105 °C), mass content in %

	M(M)*										
	As	Be	Co	Cu	Mo	Ni	Pb	Sn	Zn	Cd	Hg
GSO 2507-83	0.0008	0.00020	0.0009	0.0025	0.00012	0.0032	0.0018	0.0003	0.0056	0.000010	0.0000041
GSO 2508-83	0.0021	0.0009	0.0046	0.011	0.0006	0.011	0.009	0.0020	0.018	0.00018	0.000018
GSO 2509-83	0.004	0.0024	0.013	0.027	0.0011	0.030	0.026	0.006	0.046	0.00045	0.000042

	U(95%)*										
	As	Be	Co	Cu	Mo	Ni	Pb	Sn	Zn	Cd	Hg
GSO 2507-83	0.0003	0.00004	0.0002	0.0002	0.00001	0.0004	0.0001	0.0001	0.0005	0.000002	0.0000007
GSO 2508-83	0.0005	0.0002	0.0004	0.001	0.0002	0.001	0.001	0.0003	0.002	0.00004	0.000002
GSO 2509-83	0.001	0.0005	0.001	0.001	0.0001	0.001	0.002	0.001	0.003	0.00008	0.000006

2. CERTIFIED VALUES (dried at 105 °C), mass content in % (common to all CRMs belonging to the set)

	SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O _{3 total}	MnO	CaO	MgO	K ₂ O	Na ₂ O	P ₂ O ₅
M(M)	71.49	0.74	9.81	3.48	0.079	1.60	0.95	2.42	0.81	0.18
U(95%)	0.27	0.03	0.14	0.06	0.002	0.05	0.03	0.04	0.02	0.02

	S total	B	Ba	Ce	Cr	Cs	F	Ga	La	Li
M(M)	0.05	0.0056	0.050	0.007	0.0083	0.0004	0.028	0.0011	0.0036	0.0023
U(95%)	0.01	0.0004	0.008	0.002	0.0006	0.0001	0.005	0.0003	0.0005	0.0003

	Nb	Rb	Sc	Sr	V	Y	Yb	Zr	L.O.I.
M(M)	0.0014	0.0088	0.0011	0.011	0.0072	0.0031	0.00041	0.047	8.26
U(95%)	0.0003	0.0007	0.0001	0.003	0.0007	0.0006	0.00007	0.002	0.30

Non-certified value for information only, mass content in % (common to all CRMs belonging to the set)

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M(M)*	(0.0003)

* M(M): The mean of the acceptable laboratory means (93 laboratories).

** U(95%): expanded uncertainty is generated from the half-width confidence interval (95%).

Description of the sample

CRM set GSO 2507-83, GSO 2508-83, GSO 2509-83 is available in the form of a powder particle size ≤ 0.09 mm. It is supplied in glass bottles containing 100 g.

Date of issue of CRM set GSO 2507-83, GSO 2508-83, GSO 2509-83

December 1982.

Intended use

CRM set GSO 2501-83, GSO 2502-83, GSO 2503-83 is intended for validation and verification of analytical methods, for the calibration of analytical instruments.

In order to ensure that a fully representative sample is taken the minimum weight of CRM set GSO 2501-83, GSO 2502-83, GSO 2503-83 must be not less than, the values specified in the tables, g.

	As	Be	Co	Cu	Mo	Ni	Pb	Sn	Zn	Cd	Hg
GSO 2501-83	0.02	0.007	0.02	0.02	0.007	0.02	0.02	0.007	0.02	0.02	0.2
GSO 2502-83	0.03	0.02	0.02	0.02	0.6	0.02	0.03	0.03	0.02	0.11	1.8
GSO 2503-83	0.02	0.01	0.01	0.01	0.03	0.01	0.01	0.02	0.01	0.07	1.7

Si, Al, Na, K, Ba, Sr, Rb, Ga, Li, Cs, Mg	0.007
Fe, Cr, V, Mn	0.020
Zr, Nb, La, Ce, B	0.030

Safety requirements

CRMs powder material doesn't contain any harmful components and can be safely operated with.

Supplied by:

Director,
Valerii V. Stepanovskikh

