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Analyse Service GmbH

CCRMP - SY-4, Syenit

Veranstalter: CCRMP - Canadian Certified Refrence Materials Projekt - Ottawa Canada
Ringversuchsmaterial: Syenit SY-4
RV geschlossen: 1996 – 1
Literatur: GEOSTANDARDS NEWSLETTERS, Vol. 21, No. 1, 1997

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na_2O	7,16	7,1	0,05	
MgO	0,49	0,5	0,01	
Al_2O_3	20,76	20,69	0,08	
SiO_2	49,89	49,9	0,1	
P_2O5	0,128	0,131	0,004	
SO_3	0,031	0,038	0,1	
K_2O	1,65	1,66	0,02	
CaO	7,98	8,05	0,04	
TiO_2	0,29	0,29	0,003	
Fe_2O_3 tot	6,19	6,21	0,07	
MnO	0,083	0,084	0,001	

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
Ba	321	340	5	
Ce	133	122	2	
Co	7	3	0,2	
Cr	9	12	1	
Ga	37	35	1	
Hf	10	10,6	0,4	
La	50	58	1	
Nb	12	13	1	
Ni	9	9	1	
Rb	50	55	2	
Sr	1178	1191	12	
Th	5	1,4	0,2	
Y	121	119	2	
Zn	94	93	2	
Zr	562	517	16	

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch
Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

CCRMP
Canadian Certified Reference Materials Project

Mineral Sciences Laboratories, CANMET
555 Booth Street
Ottawa, Canada K1A 0G1

PCMR
Projet canadien de matériaux de référence

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555, rue Booth
Ottawa, Canada K1A 0G1

NEW CCRMP MATERIAL

March 1995

SY-4

Diorite Gneiss Reference Material

The Canadian Certified Reference Materials Project (CCRMP) announces the availability of a diorite gneiss reference material, SY-4. It is intended as a replacement for the popular rock reference material, SY-2, which is now depleted. SY-4 has been certified for 51 whole-rock, minor, and trace elements. Fourteen more constituents have been provisionally certified, and data was obtained for 15 more for which there was not sufficient consensus to recommend a value.

In an effort to duplicate the composition of SY-2, a geologist from CANMET sampled 12 sites in the region of Bancroft, Ontario, in 1992. The final site chosen was an outcrop of the Rosenthal-Reid Lake Belt in Brudenell Township, Renfrew County, Ontario, Canada.

Over 350 kg of rock was collected that fall. This was dried, cleaned, broken, crushed and ground to -74 μm (-200 mesh). The powdered material was blended and bottled in 100-g lots. The analyses for homogeneity assessment were performed by the Geological Survey of Canada (GSC). This involved a complete whole-rock analysis along with barium, strontium, rubidium and zirconium on 22 bottles chosen according to a stratified random sampling scheme. The analysis was done in duplicate using a fused-disk X-ray fluorescence technique.

The powdered material was studied by quantitative X-ray diffraction and scanning electron microprobe analysis and found to be classed as a diorite gneiss. It contains major amounts of oligoclase and scapolite and minor amounts of biotite, calcite and analcime along with trace amounts of magnetite and apatite.

Eighty-nine university, commercial, and government laboratories from all over the world participated in an interlaboratory certification program. Up to 80 elements were analyzed by methods of each laboratory's choice. A statistical analysis of the data yielded recommended values for 51 constituents and provisional values for 14 more.

SY-4 is priced at $90 per 100-g unit and is available upon pre-payment by any of the following methods:

Telephone: (613) 995-4738 Facsimile: (613) 943-0573

Téléphone : (613) 995-4738 Télécopieur : (613) 943-0573

VISA or MASTERCARD
Cheque
Money Order
Bank to Bank telegraphic transfer

Payable to:
Receiver General for Canada
(ref. CCRMP).

Canadian customers will be invoiced GST, if applicable, and provincial sales tax at the rate set by the province in which they are located.

Mail payment to:

CCRMP
Attention: Robert Beaudoin
CANMET (EMR)
555 Booth Street
Ottawa, Ontario, Canada
K1A 0G1

Telephone: (613) 995-4738
Facsimile: (613) 943-0573
Telex: 053-3395

A publication describing this reference material is in preparation and will be available at no charge upon request to the Coordinator of CCRMP at the above address.

Certified Values ± 95% Confidence Interval

Al_2O_3	20.69	± 0.08	%	MgO	0.54	± 0.01	%
CaO	8.05	± 0.04	%	MnO	0.108	± 0.001	%
CO_2	3.5	± 0.1	%	Na_2O	7.10	± 0.05	%
Fe	4.2	± 0.1	%	P_2O_5	0.131	± 0.004	%
Fe_2O_3 total	6.21	± 0.03	%	SiO_2	49.9	± 0.1	%
FeO	2.86	± 0.09	%	TiO_2	0.287	± 0.003	%
K_2O	1.66	± 0.02	%	LOI	4.56	± 0.07	%

Ba	340	± 5	µg/g	Nd	57	± 1	µg/g
Be	2.6	± 0.1	µg/g	Ni	9	± 1	µg/g
Ce	122	± 2	µg/g	Pb	10	± 1	µg/g
Co	2.8	± 0.2	µg/g	Pr	15.0	± 0.3	µg/g
Cr	12	± 1	µg/g	Rb	55	± 1.5	µg/g
Cs	1.5	± 0.1	µg/g	Sc	1.1	± 0.1	µg/g
Cu	7	± 1	µg/g	Sm	12.7	± 0.4	µg/g
Dy	18.2	± 0.6	µg/g	Sr	1191	± 12	µg/g
Er	14.2	± 0.5	µg/g	Ta	0.9	± 0.1	µg/g
Eu	2.00	± 0.04	µg/g	Tb	2.6	± 0.1	µg/g
Ga	35	± 1	µg/g	Th	1.4	± 0.2	µg/g
Gd	14.0	± 0.5	µg/g	Tm	2.3	± 0.1	µg/g
Hf	10.6	± 0.4	µg/g	U	0.8	± 0.1	µg/g
Ho	4.3	± 0.1	µg/g	V	8	± 1.6	µg/g
La	58	± 1	µg/g	Y	119	± 2	µg/g
Li	37	± 2	µg/g	Yb	14.8	± 0.4	µg/g
Lu	2.1	± 0.1	µg/g	Zn	93	± 2	µg/g
Mn	819	± 24	µg/g	Zr	517	± 16	µg/g
Nb	13	± 1	µg/g				

SY-4

Provisional Values ± 95% Confidence Interval

Al	11 ± 1	%	H_2O-	0.15 ± 0.05	%
C	1.0 ± 0.1	%	K	1.41 ± 0.03	%
Ca	5.8 ± 0.3	%	Mg	0.30 ± 0.02	%
F	0.06 ± 0.01	%	Na	5.3 ± 0.2	%
H_2O+	1.0 ± 0.3	%	S total	0.015 ± 0.004	%
Ag	0.6 ± 0.16	µg/g	P	532 ± 38	µg/g
Br	217 ± 14	µg/g	Sn	7.1 ± 0.6	µg/g

Information Values (Range)

Cl	0.3 - 0.6 %	SO_3	0.01 - 0.08 %
As	0.1 - 2 µg/g	Mo	0.2 - 3 µg/g
B	13 - 18 µg/g	Sb	0.01 - 0.3 µg/g
Bi	0.1 - 0.3 µg/g	Se	0.01 - 4 µg/g
Cd	0.1 - 2 µg/g	Ti	1500 - 1750 µg/g
Ge	1 - 4 µg/g	Tl	0.2 - 0.5 µg/g
Hg	10 - 14 ng/g*	W	0.2 - 15 µg/g
In	0.04 -0.1 µg/g		

* nng = 10^{-9} g/g (i.e., ppb)