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## Reference Material Report

# AMIS0681

## Reference Material

### Blank Silica Chips

# *Reference Material Report*

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#### AMIS

(Reg. No. 1989/000201/07)

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# SUMMARY STATISTICS

## 1. Informational concentrations and standard deviation

**Table 1.** Informational oxide concentrations, standard deviation and relative standard deviation percent.

Element	Unit	Method	Mean	Std. Dev	RSD%
Al <sub>2</sub> O <sub>3</sub>	%	XRF <sup>1</sup>	1.06	0.12	12
Fe <sub>2</sub> O <sub>3</sub>	%	XRF	1.17	0.22	19
K <sub>2</sub> O	%	XRF	0.26	0.03	11
MgO	%	XRF	0.03	0.02	53
MnO	%	XRF	0.01	0.00	28
Na <sub>2</sub> O	%	XRF	0.02	0.01	34
P <sub>2</sub> O <sub>5</sub>	%	XRF	0.01	0.00	37
SiO <sub>2</sub>	%	XRF	97.04	0.44	0.5
TiO <sub>2</sub>	%	XRF	0.05	0.01	17
GOI	%	GOI <sup>2</sup>	0.009	0.06	655

*Disclaimer: AMIS removes any foreign material prior to packaging. However please scan material prior to use. If you need any clarification on this statement, please contact AMIS.*

1. XRF is X Ray Fluorescence
2. GOI is Gain on Ignition
3. 4A\_MICP is 4A\_MICP is a Multi-acid digestion with ICP/MICP/AA finish

**Table 2.** Informational elemental concentrations, SD and relative standard deviation percent.

Element	Unit	Method	Mean	Std. Dev	RSD%
Ag	ppm	4A_MICP <sup>3</sup>	0.04	0.01	23
Al	%	4A_MICP	0.56	0.06	11
As	ppm	4A_MICP	0.35	0.14	41
Au	ppm	Pb Collection	ND	*	*
Ba	ppm	4A_MICP	37.23	5.79	16
Be	ppm	4A_MICP	0.18	0.03	17
Bi	ppm	4A_MICP	0.04	0.01	40
Ca	%	4A_MICP	0.02	0.01	80
Ce	ppm	4A_MICP	9.17	4.16	45
Co	ppm	4A_MICP	1.08	0.82	76
Cr	ppm	4A_MICP	14.79	6.27	42
Cs	ppm	4A_MICP	0.26	0.03	10
Cu	ppm	4A_MICP	6.97	1.63	23
Fe	%	4A_MICP	0.81	0.14	18
Ga	ppm	4A_MICP	1.39	0.18	13
Ge	ppm	4A_MICP	0.06	0.01	13
Hf	ppm	4A_MICP	1.58	0.18	11
K	%	4A_MICP	0.22	0.02	11
La	ppm	4A_MICP	4.99	0.45	9
Li	ppm	4A_MICP	15.11	1.87	12
Mg	%	4A_MICP	0.02	0.01	35
Mn	ppm	4A_MICP	84.47	25.83	31
Mo	ppm	4A_MICP	0.37	0.05	14
Na	%	4A_MICP	0.01	0.004	38
Nb	ppm	4A_MICP	0.54	0.08	15
Ni	ppm	4A_MICP	2.41	0.70	29
P	ppm	4A_MICP	34.47	12.99	38
Pb	ppm	4A_MICP	2.31	2.90	125
Rb	ppm	4A_MICP	10.21	1.15	11
Sb	ppm	4A_MICP	0.12	0.03	30
Sc	ppm	4A_MICP	1.01	0.29	28
Sn	ppm	4A_MICP	0.20	0.01	7
Sr	ppm	4A_MICP	3.28	1.11	34
Ta	ppm	4A_MICP	0.05	0.01	14
Th	ppm	4A_MICP	1.72	0.09	5
Ti	%	4A_MICP	0.03	0.004	13
Tl	ppm	4A_MICP	0.06	0.01	18
U	ppm	4A_MICP	0.42	0.05	11
V	ppm	4A_MICP	6.98	2.07	30
W	ppm	4A_MICP	0.20	*	*
Y	ppm	4A_MICP	3.30	0.27	8
Zn	ppm	4A_MICP	6.36	5.60	88
Zr	ppm	4A_MICP	63.31	6.47	10

\* denotes that the results were too similar and SD and RSD% could not be calculated  
 ND – Not Detected

## **2. Intended Use**

AMIS0681 is a coarse blank material suitable to test assay laboratory sample preparation and quality control procedures. The material should be routinely inserted within batches of samples to test for contamination or sample mixing in the sample preparation or assay process.

## **3. Analytical and Physical Methods**

A complete list of analytical and physical methods as generic method codes with a brief description of the methods is available on the AMIS web site [www.amis.co.za](http://www.amis.co.za)

## **4. Origin of Material**

This standard was made from silica chips and the material was sourced in South Africa.

## **5. Approximate Mineral and Chemical Composition**

The material is a silica blank chips which typically contains > 95% SiO<sub>2</sub>.

## **6. Health and Safety**

The material is a coarse powder coloured White (Corstor 8N). Safety precautions for handling fine particulate matter are recommended, such as the use of safety glasses, breathing protection, gloves and a laboratory coat.

## **7. Method of Preparation**

The material was visually inspected for foreign objects, systematically divided and sealed into 1kg Laboratory Packs and 25kg lots. Explorer Packs are then subdivided from the Laboratory Packs as required. Final packaged units were then selected on a random basis and submitted for analysis to an independent laboratory accredited with the ISO17025 standard of general requirements for the competence of testing and calibration laboratories. The material has a particle size of 3-5mm and is not homogeneous.

## **8. Handling**

The material is packaged in Laboratory Packs and Explorer Packs that must be shaken or otherwise agitated before use.

## **9. Storage information**

The material should be stored in a cool dry place, in such a way that it does not compromise the integrity of the CRM. The material should be stored in conditions which will ensure it does not absorb moisture.

## **10. Methods of Analysis**

1. Majors (Include all oxides and LOI) XRF
2. Multi element scan-4 acid digest finished by either ICP OES or ICPMS or AAS

## **11. Method of certification**

This material has been carefully prepared and tested by a third-party independent ISO17025 accredited laboratory. The material was not submitted for interlaboratory proficiency testing.

## **12. Metrological Traceability**

Traceability to SI units is via the standards used by the individual laboratory that did the analysis which is accredited to the ISO17025 general requirements for the competence of testing and calibration laboratories and who have maintained measurement traceability during the analytical process.

## **13. Period of Validity**

The values quoted are valid for this product, while still sealed in its original packaging, until notification to the contrary.

## **14. Minimum Sample Size**

Most laboratories use a 0.5g sample size for the ICP-OES and a 30g sample size for the fire assay. These are the recommended minimum sample sizes for the use of this material.

## **15. Recommended use in Quality Control**

Users should set their own limits *i.e.* 1, 2 and 3 standard deviations from an obtained mean value based on at least 10 replicate analyses using this RM.

## 16. Legal Notice

This report and the reference material described in it have been prepared with due care and attention. However, AMIS and Makhosi Khoza, and Melesha Gopi Mungaroo accept no liability for any decisions or actions taken following the use of the reference material.

**Date of Version v2.00:** 18 January 2021

**Version v2.00 Replaces the original report of AMIS0681**

**Reason for Version v2.00:** Amendment to section 7- Method of Preparation

**Version:** v2.00

**Date of Version v1.00:** 24 May 2019

**Version v1.00 replaces the original report of AMIS0681**

**Reason for Version v1.00:** Addition of Au Pb Collection

**Version:** v1.00

**Date of Version 000:** 22 May 2019

**Version:** 000

**Approving Officers:**

**African Mineral Standards:** \_\_\_\_\_

**Melesha Gopi Mungaroo (Technical Manager)**