

# DECLARATION OF QUALITY

## METRANAL® 33

### Quality Control Material (QCM)

**Matrix:** Clay loam soil, normal analyte levels  
Powdered material, grain size < 100 µm

The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.

Element	Total element content (mg/kg, dry weight)**	Extract by aqua regia* (mg/kg, dry weight)**
	Mean ± Unc.***	Mean ± Unc.***
As	16.7	11.6 ± 0.7
Ba	495	146
Be	2.18 ± 0.16	1.29 ± 0.13
Cd	0.32 ± 0.04	0.32 ± 0.03
Co	11.5 ± 0.7	10.3 ± 0.5
Cr	79.8 ± 6.7	42.4 ± 3.8
Cu	29.1 ± 0.8	25.4 ± 0.9
Hg	0.096 ± 0.014	0.093
Mn	600 ± 37	529 ± 19
Ni	31.3 ± 1.5	28.8 ± 1.2
Pb	33.5 ± 2.4	25.2 ± 1.1
V	76.2 ± 6.4	52.9 ± 2.7
Zn	81.0 ± 7.6	69.4 ± 1.8

Matrix composition (% of the oxides, dry weight)	
Oxide	%
SiO <sub>2</sub>	68.80
Al <sub>2</sub> O <sub>3</sub>	12.30
CaO	1.38
MgO	1.02
Fe <sub>2</sub> O <sub>3</sub>	4.15
K <sub>2</sub> O	2.21
Na <sub>2</sub> O	0.74
P <sub>2</sub> O <sub>5</sub>	0.16
TiO <sub>2</sub>	0.68
Loss on ignition at 900 °C	8.60

\* Aqua regia extractable content according to ISO 11466 (1995)

\*\* Dry weight at 105 °C

\*\*\* The half-width of a 95% confidence interval

The property values were assigned in 5 – 25 experienced accredited laboratories (ISO 17025) by using validated analytical methods.

The sample is stabilized by radiation (25 kGy).

RM is valid until expiry date indicated in the Declaration, provided the RM is properly stored in the original closed bottle and professionally handled. This Declaration is nullified if the RM is damaged, contaminated, or otherwise modified.

Analytika® , spol. s r.o. will monitor this RM over the period of its validity. If substantive changes of reference values occur, Analytika® , spol. s r.o. will notify the purchaser.

**Packing:** 80 g in an amber HDPE bottle

**Batch No.:** 004

**Declaration issue date:** 08<sup>th</sup> January 2016

**Latest revision date:** 22<sup>nd</sup> June 2020

**Expiration:** **31<sup>st</sup> December 2022**

**Producer:** ANALYTIKA® , spol. s r.o.

**Production unit Manager:** Mgr. Mirka Petránková

**Signed:**

*Petránková*

#### Declaration version n. 3

##### Declaration Revision History:

22<sup>nd</sup> June 2020 (minor editorial changes, extension of expiry period)

22<sup>nd</sup> July 2016 (editorial changes, extension of expiry period)