

## **IDENTIFICATION SHEET**

### **Aqueous calibration solution ASTASOL®**

#### **ASTASOL® ANM010**

This Identification sheet is designed in accordance with ISO Guide 31

**Category:** Traced reference material

**Analytes:** Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Se, Sr, Ti, Tl, V, Zn

**Product code:** ANM010

**Starting primary compounds and theirs purities (%):**

Al 99.999; As 99.9999; H<sub>3</sub>BO<sub>3</sub> 99.99; BaCO<sub>3</sub> 99.997; Be 99.5; Bi 99.999; CaCO<sub>3</sub> 99.999; Cd 99.999; Co 99.998; Cr(NO<sub>3</sub>)<sub>3</sub>.xH<sub>2</sub>O 99.99; Cu 99.999; Fe 99.998; KNO<sub>3</sub> 99.999; Li<sub>2</sub>CO<sub>3</sub> 99.999; Mg 99.98, Mn 99.98; (NH<sub>4</sub>)<sub>6</sub>Mo<sub>7</sub>O<sub>24</sub>.xH<sub>2</sub>O 99.999; NaNO<sub>3</sub> 99.999; Ni 99.995; Pb 99.999; Se 99.995; SrCO<sub>3</sub> 99.994; TiNO<sub>3</sub> 99.9995; (NH<sub>4</sub>)<sub>2</sub>TiO(C<sub>2</sub>O<sub>4</sub>)<sub>2</sub> . x H<sub>2</sub>O 99.998; NH<sub>4</sub>VO<sub>3</sub> 99.95; Zn 99.998.

**Matrix:**

5% HNO<sub>3</sub> (v/v), prepared from sub boil distilled HNO<sub>3</sub> (ANALPURE®) and ultrapure demineralized water (resistivity ≥ 18 MΩ.cm, 0.22µm filtered).

**Assigned concentration value and expanded uncertainty (k = 2) at 20 °C**

**100.0 ± 0.5 mg/l (each analyte)**

**Specification:**

**Batch No.:** 10170

**The date of production:** 30.05.2022

**Shelf time:** 5 years from the date of production

**The date of first opening of the bottle:** .....

**Expiry date:** ..... 12 months from the first opening of the bottle within shelf life period, which should be indicated on the label of the bottle as well

**Intended use:**

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As a calibrator of analytical methods analysing aqueous solutions such as atomic spectrometry (AAS, AES, ICP-OES, ICP-MS), molecular absorption and selected electroanalytical methods.

**Characterization and traceability:**

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This RM has an assigned value of concentration and uncertainty on the basis of gravimetric preparation. Traceability is realized with CRM AN 9002(1N), AN 9003(1N), AN 9005(1H), AN 9006(1N), AN 9007(1N), AN 9008(1N), AN 9009(1N), AN 9010(1N), AN 9012(1N), AN 9013(1N), AN 9015(1N), AN 9019(1N), AN 9028(1N), AN 9030(1N), AN 9032(1N), AN 9033(1N), AN 9034(1A), AN 9035(1N), AN 9038(1N), AN 9041(1N), AN 9051(1N), AN 9056(1N), AN 9061(1FN), AN 9062(1N), AN 9065(1N) and AN 9069(1N) through a short unbroken chain of calibrations (AAS, AES, ICP-OES) or comparisons (primary analytical methods).

**Trace impurities in bottled solution**

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Max. 0.2 mg/l (total)

**Homogeneity and stability:**

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It has been demonstrated that this RM is homogeneous and its stability is guaranteed during the whole shelf life provided the solution it kept under conditions presented below.

**Storing and instruction for use:**

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This RM has to be stored in the original closed bottle between 5 – 30 °C. The producer guarantees a declared shelf life and expiration time provided the RM is properly stored and professionally handled. The temperature of the solution must be  $20 \pm 0.5$  °C before every use. It is necessary to indicate the expiration time, which depends on the date of the first time the bottle was opened. It is important to cover the screw cap and the neck of the bottle with a parafilm layer after each opening to prevent vapour phase losses. It is not recommended to use the standard solution when the bottle contains less than 10 % of the solution. Therefore, in case of nontransparent bottle, it is important to indicate the amount of the solution used, e.g. on the label. Do not pipette from the bottle. Do not return removed aliquots to bottle.

**Note:**

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Detailed information about the production, homogeneity, stability, coding, characterization and storing of this RM are described in the document “Detailed information about the production of aqueous calibration solutions ASTASOL®“, which is available for download on the website [www.analytika.net](http://www.analytika.net).

**Producer:**


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ANALYTIKA®, spol. s r.o.  
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**Quality management systems of company ANALYTIKA®, spol. s r.o.:**


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ČSN EN ISO 9001:2016  
 ČSN EN ISO/IEC 17025:2018  
 ČSN EN ISO 17034:2017

**Manager of Department of RM:**


Ing. Daniela Weissarová

**Head of production department:**


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Date of the first issue of IS: 04.01.2023

Revision of IS:

IS revision date:

Version of IS: 01