

## Certificate of Analysis

LabKings B.V.  
Utrechtseweg 5  
1213TK Hilversum  
The Netherlands

Catalog No.: LK1-00270503-IMP

Lot No.: 1106110

Storage: Ambient store out of direct sun light

Density: 1.0240 at 21 °C

Matrix: 2% HNO<sub>3</sub>

Description: Cobalt 10 mg/L in 2% HNO<sub>3</sub>, 500 mL

Date Received

Expiration Date 30-Sep-2018

Certification Date 30-Mar-2017

| Element | Symbol | CAS No    | Source<br>Lot No | Purity % | Concentration mg/L |
|---------|--------|-----------|------------------|----------|--------------------|
| Cobalt  | Co     | 7440-48-4 | 7008.409.1       | 99.999   | 10 +/- .03         |

This standard has been prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 822/264157-00). Only Class-A volumetric glassware was used to prepare this product. The concentration and uncertainty of this standard are calculated based on the weight and volumes used in the manufacturing process. The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been certified by ICP against an independent source which is directly traceable to NIST SRM 3113

Impurity values determined by ICP-MS. The data is based on a scan of the raw material. The values are reported in µg/L.

A = Major component, INT = Interferent from the major component.

### Trace impurity analysis in µg/L

|    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |    |      |
|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|
| Li | <0.1 | Ca | <0.1 | Cu | <0.1 | Y  | <0.1 | Cd | <0.1 | Ce | <0.1 | Ho | <0.1 | Re | <0.1 | Bi | <0.1 |
| Be | <0.1 | Ti | <0.1 | Zn | <0.1 | Zr | <0.1 | In | <0.1 | Pr | <0.1 | Er | <0.1 | Os | <0.1 | Th | <0.1 |
| B  | <1.0 | V  | <0.1 | Ga | <0.1 | Nb | <0.1 | Sn | <0.1 | Nd | <0.1 | Tm | <0.1 | Ir | <0.1 | U  | <0.1 |
| Na | 0.1  | Cr | <0.1 | Ge | <0.1 | Mo | <0.1 | Sb | <0.1 | Sm | <0.1 | Yb | <0.1 | Pt | <0.1 |    |      |
| Mg | <0.1 | Mn | <0.1 | As | INT  | Ru | <0.1 | Te | <0.1 | Eu | <0.1 | Lu | <0.1 | Au | <0.1 |    |      |
| Al | <1.0 | Fe | <0.1 | Se | <0.1 | Rh | <0.1 | Cs | <0.1 | Gd | <0.1 | Hf | <0.1 | Hg | <0.1 |    |      |
| P  | <1.0 | Co | A    | Rb | <0.1 | Pd | <0.1 | Ba | <0.1 | Tb | <0.1 | Ta | <0.1 | Tl | <0.1 |    |      |
| K  | <1.0 | Ni | <0.1 | Sr | <0.1 | Ag | <0.1 | La | <0.1 | Dy | <0.1 | W  | <0.1 | Pb | <0.1 |    |      |

This standard was manufactured by a laboratory accredited to ISO/IEC 17025:2005 (certificate number 3031.01) by the American Association of Laboratory Accreditation (A2LA). The manufacturer's quality system is audited and registered by NSF-ISR to ISO 9001:2008 (certificate number IZ391-IS4).

*Amanda Frazier*

Certified By: \_\_\_\_\_

Amanda Frazier

Crown your labwork