



# Certificate of Analysis

## Free Cyanide Calibration Standard - 1000 mg/L

**Catalog Number:** IS-029, IS-029-500

**Lot Number:** 211012

**Manufacture Date:** 10/12/21

**Certified Date:** 10/12/21

**Expiration:** 01/31/2023

**Matrix:** Dilute NaOH

**Hazards:** Irritant

(See MSDS)

<u>Bulk Number</u>	<u>Analyte</u>	<u>CAS #</u>	<u>Purity</u>	<u>Certified Concentration</u> (mg/L CN <sup>-</sup> )
W-478-03	Potassium cyanide	151-50-8	99.9%	1000 ± 4.60

### Packaging, Storage, Instructions For Use

**Store at room temperature (15-30°C). After opening, this solution should be stored tightly capped at 2-8°C.**

This certified reference material (CRM) is packaged in amber glass bottles. Allow to equilibrate to room temperature and shake well before use. Small aliquots should be poured out of the bottle rather than directly pipetted out of bottle in order to prevent contamination or premature degradation. A 1 mL sample size is recommended. Smaller sample volumes may negatively affect estimated uncertainty. This CRM was manufactured by NSI Lab Solutions following quality procedures meeting the requirements of ISO 9001, ISO 17025, and ISO 17034.

### Traceability Information

**Analyte Source Materials:** The highest purity analyte source materials are used in the manufacture of this CRM. The actual purity is referenced above. Analyte source material purity and associated uncertainty has been analytically verified against appropriate NIST SRMs, if available.

**Method:** Certified concentration confirmed by Hach analysis against an independent reference standard.

**Balance:** All analytical balances are calibrated on a semiannual basis by an ISO 17025 accredited calibration laboratory and are traceable to NIST. Traceable Calibration Certificate available upon request.

All balances are checked daily by an in-house standard operating procedure. The weights used for this daily verification are calibrated annually by an ISO 17025 accredited calibration laboratory and are certified traceable to NIST. Certificate of Calibration and Traceability available upon request.

**Thermometer:** All thermometers are NIST traceable through thermometers that are calibrated annually by an ISO 17025 accredited calibration laboratory.

**Glassware:** All glassware used in the manufacture of our CRMs is Class A. An in-house standard operating procedure is used to verify all glassware prior to it being placed into service. Volumetric pipetors are calibrated every four months by an ISO 17025 accredited calibration laboratory.





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### Intended Uses

- Calibration of analytical instruments
- Validation of analytical methods
- Preparation of working level reference materials, i.e. "check standards"
- Detection limit studies

### Uncertainty

The  $\pm$  uncertainty associated with the certified concentration is the expanded manufacturing uncertainty at 95% confidence interval (CI) with K=2.

### Homogeneity

This CRM was thoroughly mixed in production. Batch homogeneity is guaranteed. A minimum 1 mL sample size is recommended.

### Stability/Expiration

The stability of this CRM is based on short-term and long-term monitoring. The expiration date is guaranteed to be valid from the manufacture date and is based on results of long-term monitoring.

*Ewart Morris*

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Ewart Morris, Inorganics Technical Manager

*Mark Hammersla*

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Mark Hammersla, President



ISO 17034:2016  
Certificate AR-1571

ISO 9001:2015 UL Registered Firm - Certificate # 10002343 QM15