

# 分析证明书

## 土壤 总氰 质控样



产品编号: SQCI-017  
批号: S0221  
生产日期: 2021-01-26  
分析日期: 2021-01-26

保质期: 2023-03-31  
基质/溶剂: 稀NaOH + 空白土壤  
危害: 刺激

项目	能力验证 统计值 mg/Kg	确认值 mg/Kg	接受区间 mg/Kg
总氰	91.6	89.0 ± 0.829	38.6 - 145

该质控样品配制过程符合 ISO9001, ISO17025及 ISO17034 认证  
接受区间根据当前美国能力验证行业标准设置  
能力验证统计值 为 剔除不合格回报值后的实验室间能力验证结果统计值  
该样品可用于: 方法验证、检测极限研究、能力验证等

### 储存及使用说明

#### 加标溶液2-8℃保存, 空白土壤15-30℃保存

该样品用于总氰检测, 请选择合适提取及分析方法  
该样品加标溶液中已添加有氰化物缓冲稳定剂  
部分方法可能要求分析前调整PH=7  
称取25g空白土壤至提取容器中  
汲取1mL加标溶液至空白土壤中  
该样品即为分析样品, 请立即使用  
基于25g样品量回报结果。分析结果不需要加标回收率矫正

### 溯源

原料: 分析项目原料选用可用的最高纯度原料用于配制该样品。如有相应的 NIST标准物质可用, 原料纯度及不确定度会与其对照分析校验

天平: 所有天平按ISO17025校准实验室认证要求每季度校准一次, 溯源至NIST。所有天平每天按照内部标准操作程序查验, 查验所用砝码按17025认证要求每年校准一次。

温度计: 所有温度计溯源至 NIST, 每年校准一次

玻璃器皿: 此样品配制过程中涉及的所有玻璃器皿为 A 级。所有玻璃器皿启用前经过内部标准操作程序校验。移液器按17025认证要求每月校准一次。

### 均匀性/稳定性/保质期

该标物生产过程中已充分混匀, 批次均匀性按要求随机取样分析建立。该标物稳定性基于短期及长期对确认浓度的监测结果。保质期基于长期监测结果确保保质期内有效

### 不确定度

不确定度为 95%置信区间扩展系数 K=2.

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





# Certificate of Analysis

## Cyanide in Soil

**Catalog Number:** SQCI-017  
**Lot Number:** S0221  
**Manufactured Date:** 01/26/21  
**Certified Date:** 01/26/21

**Expiration:** 03/31/2023  
**Spike Matrix:** Dilute NaOH  
**Hazards:** Irritant

<u>Analyte</u>	<u>Study Mean</u> (mg/kg)	<u>Certified Concentration</u> (mg/kg)	<u>Acceptance Limits</u> (mg/kg)
Total Cyanide	91.6	89.0 ± 0.829	38.6 - 145

This quality control CRM was manufactured by NSI Lab Solutions following quality procedures meeting the requirements of ISO 9001, ISO 17025, and ISO 17034. Acceptance limits are set at current NELAC standards. The certified concentration is the gravimetric true value determined during manufacture, masses traceable to NIST. The study mean is set at the robust mean of an interlaboratory proficiency testing study with outlier rejection. This CRM is intended to be used to validate analytical methods, for detection limit studies, and analyst proficiency testing.

### Storage & Instructions For Use

**Store the spike concentrate at 2-8°C. The blank soil matrix can be stored at 15-30°C.**

The soil is to be extracted/digested and analyzed using an appropriate extraction and analytical method for Total Cyanide, assuming a 25 g sample will contain sufficient Cyanide for determination.

The CRM has been buffered to stabilize the Cyanide.

Some methods may require a pH adjustment to 7 prior to analyze.

Weigh 25 g of the blank soil matrix and place in extraction vessel.

Open the spiking ampule and add 1 mL of solution directly to the blank soil matrix.

The CRM is now ready for immediate analysis.

Report your results as mg/kg based on 25 g of soil. Do not correct the analytical results for matrix spike recovery bias.

### Traceability Information

**Analyte Source Materials:** The highest purity analyte source materials are used in the manufacture of this CRM.

**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.





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**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.

### **Homogeneity/Stability/Expiration**

This quality control CRM was thoroughly mixed in production. Batch homogeneity was established through analyses of samples chosen at random. The stability of this quality control CRM is based on short-term and long-term monitoring of the certified concentration. The expiration date is guaranteed to be valid from the manufacture date and is based on results of long-term monitoring.

### **Uncertainty**

The  $\pm$  uncertainty associated with the certified concentration is the expanded uncertainty at 95% confidence interval (CI) with  $K=2$ . This expanded uncertainty incorporates contributions from manufacturing, homogeneity, and stability.

*Ewart Morris*

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Ewart Morris, Inorganics Technical Manager