06/02/2023

## Certificate of Analysis

**Product:** Water
**Grade:** LC-MS
**Part No.'s:** 1939-5
**CAS No:** 7732-18-5

| | |
|---|---|
| **Lot:** | **M7J109** |
| **Mfg. Date:** | **2022-07-19** |
| **Exp. Date:** | **2 years after Mfg. Date** |

Manufactured by Duksan Pure Chemicals

### LC-MS Suitability

| Test | Unit | Specification (Max) | Results |
|---|---|---|---|
| ESI+ mode (as Reserpine) | ppb | 50 | <50 |
| ESI- mode (as 4-Nitrophenol) | ppb | 50 | <50 |
| Residue After Evaporation | ppm | 1 | <1 |
| **Ultraviolet Spectrophotometry** | | | |
| **Wavelength** | **Unit** | **Maximum UV Absorbance** | |
| 200 | nm | 0.01 | <0.01 |
| 250 - 400 | nm | 0.005 | <0.005 |
| **Gradient Elution Test** | | | |
| **Test** | **Unit** | **Specification (Max)** | |
| Largest Eluted Peak(254nm) | mAU | 1 | <1 |
| Largest Eluted Peak(210nm) | mAU | 5 | <5 |
| **Fluorescence Trace Impurities** | | | |
| **Test** | **Unit** | **Specification (Max)** | |
| At 450nm Emissions | ppb | 0.1 | <0.1 |
| At Emissions Maximum for Impurities | ppb | 0.2 | <0.2 |

### Metal Impurities

| Metal | Unit | Specification (Max) | Results |
|---|---|---|---|
| Aluminum (Al) | ppb | 25 | <4 |
| Barium (Ba) | ppb | 5 | <1 |
| Cadmium (Cd) | ppb | 5 | <1 |
| Calcium (Ca) | ppb | 25 | <15 |
| Chromium (Cr) | ppb | 5 | <1 |

| | | | |
|---|---|---|---|
| Cobalt (Co) | ppb | 5 | <1 |
| Copper (Cu) | ppb | 5 | <1 |
| Iron (Fe) | ppb | 5 | <1 |
| Lead (Pb) | ppb | 5 | <1 |
| Magnesium (Mg) | ppb | 25 | <6 |
| Manganese (Mn) | ppb | 5 | <1 |
| Lithium (Li) | ppb | 5 | <1 |
| Nickel (Ni) | ppb | 5 | <1 |
| Potassium (K) | ppb | 25 | <1 |
| Silver (Ag) | ppb | 5 | <1 |
| Sodium (Na)* | ppb | 50 | <23 |
| Tin (Sn) | ppb | 5 | <1 |
| Zinc (Zn) | ppb | 5 | <1 |

* May change over time
Tested to ACS specifications
Filtered by 0.2um filter

Created By:

James Osborn
Quality Supervisor