

## Certificate of Analysis

**Product:** Methanol  
**Grade:** HPLC  
**Part No:** 1915-5

|                   |                                |
|-------------------|--------------------------------|
| <b>Lot:</b>       | <b>M1E201</b>                  |
| <b>Mfg. Date:</b> | <b>2022-01-14</b>              |
| <b>Exp. Date:</b> | <b>3 years after Mfg. Date</b> |

Manufactured by Duksan Pure Chemicals

### Maximum UV Absorbance:

| Wavelength | Unit | Specification (Max) | Results |
|------------|------|---------------------|---------|
| 220        | nm   | 0.25                | 0.19    |
| 230        | nm   | 0.15                | 0.09    |
| 254        | nm   | 0.02                | 0.01    |
| 280        | nm   | 0.01                | 0.003   |
| UV Cutoff  | nm   | 205                 | <205    |

### LC Gradient Suitability:

| Gradient Elution Test       | Unit | Specification (Max) | Results |
|-----------------------------|------|---------------------|---------|
| Largest Eluted Peak (254nm) | mAU  | 2                   | <2      |

| Fluorescence Trace Impurities      | Unit | Specification (Max) | Results |
|------------------------------------|------|---------------------|---------|
| At 450nm Emission                  | ppb  | 0.3                 | <0.3    |
| At Emission Maximum for Impurities | ppb  | 0.5                 | <0.5    |

| Test   | Unit  | Specification | Results |
|--|-------|---------------|---------|
| Assay (by GC)  | %     | Min. 99.9     | 99.9    |
| Color (APHA)   |       | Max. 10       | 3       |
| Water  | %     | Max. 0.05     | 0.002   |
| Residue After Evaporation  | ppm   | Max. 1        | <1      |
| Titration Acid   | mEq/g | Max. 0.0003   | 0.0001  |
| Titration Base   | mEq/g | Max. 0.0002   | 0.00003 |
| Carbonyl Compounds<br>(each of Acetone, Formaldehyde and Acetaldehyde) | %     | 0.001%        | <0.001  |
| Substances Darkened by Sulfuric Acid                                   |       | To Pass Test  | Pass    |
| Substances Reducing Permanganate                                       |       | To Pass Test  | Pass    |
| Solubility in Water  |       | To Pass Test  | Pass    |

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