

### CERTIFICATE OF ANALYSIS

|                                 |                                     |
|---------------------------------|-------------------------------------|
| <b>Product Name</b>             | METHANOL                            |
| <b>Grade</b>                    | Meets ACS/USP/NF Grade Monographs   |
| <b>Catalog #</b>                | 339000000, zp339000000              |
| <b>Lot #</b>                    | K20K17K10                           |
| <b>Date of Manufacture:</b>     | 11/17/20                            |
| <b>Recommended Retest Date:</b> | Five Years from Date of Manufacture |

| TEST                                   | MONO GRAPH       | SPECIFICATION   | RESULT         |
|--|------------------|---|----------------|
| Assay (corrected for water)            | ACS              | 99.8% min   | 99.91%         |
| Assay                                  | NF               | NLT 99.5%   | 99.92%         |
| Appearance                             | ACS+             | To Pass Test  | Pass           |
| Identification A (Infrared Absorption) | NF               | To Pass Test  | Pass           |
| Identification B (GC Analysis)         | NF               | To Pass Test  | Pass           |
| Acidity                                | NF <sup>+</sup>  | NMT 0.45mL 0.020N NaOH required                                       | 0.15 mL        |
| Alkalinity (as NH <sub>4</sub> )       | NF <sup>+</sup>  | NMT 0.20mL 0.020N H <sub>2</sub> SO <sub>4</sub> required (3 ppm max) | 0.10 mL        |
| Titration Acid                         | ACS <sup>+</sup> | 0.0003 meq/g max.   | 0.0003 meq/g   |
| Titration Base                         | ACS <sup>+</sup> | 0.0002 meq/g max.   | < 0.0001 meq/g |
| Readily Carbonizable Substances        | NF <sup>+</sup>  | To Pass Test  | Pass           |
| Carbonyl Compounds                     | ACS              | Acetone 0.001% max  | None Detected  |
|  |                  | Formaldehyde 0.001% max   | < 0.001%       |
|  |                  | Acetaldehyde 0.001% max   | < 0.001%       |
| Acetone and Aldehydes (as Acetone)     | NF <sup>+</sup>  | NMT 0.003%  | < 0.003%       |
| Readily Oxidizable Substances          | NF <sup>+</sup>  | To Pass Test  | Pass           |
| Non -Volatile Residue                  | NF <sup>+</sup>  | NMT 2mg (0.001% w/w)  | 0 mg           |
| Residue on Evaporation                 | ACS <sup>+</sup> | 0.001% max  | 0.000%         |
| Substances Reducing Permanganate       | ACS <sup>+</sup> | To Pass Test  | Pass           |
| Substances Darkened by Sulfuric Acid   | ACS <sup>+</sup> | To Pass Test  | Pass           |
| Solubility in Water                    | ACS <sup>+</sup> | To Pass Test  | Pass           |
| Color (APHA)                           | ACS              | 10 max  | < 1            |
| Water                                  | ACS/NF           | NMT 0.1%  | 0.01%          |

<sup>+</sup>This test is performed quarterly



**Certification and Compliance Statements**

This lot of Methanol complies with all of the current requirements listed in the United States Pharmacopeia, National Formulary and American Chemical Society monographs

No chemicals whatsoever are used as solvents at any point in the manufacture, processing or packaging of Methanol. Only Class 2 and Class 3 residual solvents may appear as impurities / related substances / low level contaminants in Methanol. Concentration of Class 2 Option 1 and Class 3 residual solvents is below limits in the current USP/NF General Chapter <467>.

This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.

This product is for further commercial manufacturing, laboratory or research use, and may be used as an excipient or a process solvent for pharmaceutical purposes. It is not intended for use as an active ingredient in drug manufacturing nor as a medical device or disinfectant. Appropriate/legal use of this product is the responsibility of the user.

Approved by: G. Lipic, QA Specialist

Date of Approval: 11/17/20