

CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek Global
Certificate Number: CERT-0120633

| | |
|---------------------------|---|
| Catalogue Number | A456 |
| Lot Number | 260630 |
| Description | METHANOL, OPTIMA-LCMS GRADE |
| CAS Number | 67-56-1 |
| Quality Test/Release Date | 11/Jun/2026 |
| Suggested retest date | 10/Jun/2031 |
| Country of Origin | United States |
| Declaration of Origin | Organic - synthetic |
| BSE/TSE | No materials derived from animals or humans were used to make or process this chemical, and the equipment used to process this chemical is not used to process any material derived from animals or humans. |

| Result Name | Units | Specifications | Test Value |
|--|------------|----------------|-------------------------|
| APPEARANCE | | REPORT | Clear, colorless liquid |
| ASSAY | % | >= 99.9 | >99.9 |
| COLOR | APHA | <= 10 | <5 |
| EVAPORATION RESIDUE | ppm | <= 1 | <1 |
| IDENTIFICATION | PASS/FAIL | IN PASS TEST | PASS TEST |
| IONIC IMPURITY - ALUMINUM (Al) | ppb | <= 10 | <1 |
| IONIC IMPURITY - BARIUM (Ba) | ppb | <= 10 | <1 |
| IONIC IMPURITY - CADMIUM (Cd) | ppb | <= 10 | <1 |
| IONIC IMPURITY - CALCIUM (Ca) | ppb | <= 50 | <1 |
| IONIC IMPURITY - CHROMIUM (Cr) | ppb | <= 10 | <1 |
| IONIC IMPURITY - COBALT (Co) | ppb | <= 10 | <1 |
| IONIC IMPURITY - COPPER (Cu) | ppb | <= 10 | <1 |
| IONIC IMPURITY - IRON (Fe) | ppb | <= 10 | <1 |
| IONIC IMPURITY - LEAD (Pb) | ppb | <= 10 | <1 |
| IONIC IMPURITY - MAGNESIUM (Mg) | ppb | <= 10 | <1 |
| IONIC IMPURITY - MANGANESE (Mn) | ppb | <= 10 | <1 |
| IONIC IMPURITY - NICKEL (Ni) | ppb | <= 10 | <1 |
| IONIC IMPURITY - POTASSIUM (K) | ppb | <= 10 | 1 |
| IONIC IMPURITY - SILVER (Ag) | ppb | <= 10 | <1 |
| IONIC IMPURITY - SODIUM (Na) | ppb | <= 50 | 2 |
| IONIC IMPURITY - TIN (Sn) | ppb | <= 10 | <1 |
| IONIC IMPURITY - ZINC (Zn) | ppb | <= 10 | <1 |
| LC GRADIENT TEST WITH PDA (200-400 NM) | mAU | <= 2 | <2 |
| LCMS SUITABILITY - POS. MODE (AS PROPAZINE) | ppb | <= 100 | <100 |
| LCMS SUITABILITY-NEG.MODE (AS CHLORAMPHENICOL) | ppb | <= 200 | <200 |
| OPTICAL ABS AT 210 NM | ABS. UNITS | <= 0.5 | 0.4 |
| OPTICAL ABS AT 214 NM | ABS. UNITS | <= 0.4 | 0.3 |
| OPTICAL ABS AT 220 NM | ABS. UNITS | <= 0.2 | 0.2 |
| OPTICAL ABS AT 230 NM | ABS. UNITS | <= 0.1 | 0.1 |
| OPTICAL ABS AT 254 NM | ABS. UNITS | <= 0.01 | <0.01 |

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.

| | | | |
|-----------------------|------------|-----------|--------|
| OPTICAL ABS AT 260 NM | ABS. UNITS | <= 0.005 | <0.001 |
| OPTICAL ABS AT 280 NM | ABS. UNITS | <= 0.005 | <0.001 |
| TITRATABLE ACID | MEQ/G | <= 0.0003 | 0.0003 |
| TITRATABLE BASE | MEQ/G | <= 0.0002 | 0.0001 |
| WATER (H2O) | % | <= 0.02 | 0.01 |

Additional Information HPLC/UHPLC-UV Gradient Suitability: Peak Height with PDA (200-400 nm) <= 2 mAU



Harout Sahagian
QC Manager

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third-party data or information associated with the product. Products are for research use or further manufacturing. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.