

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

|                   |  |                             |            |
|-------------------|--|-----------------------------|------------|
| Catalog Number    | LS121  | Quality Test / Release Date | 11/05/2019 |
| Lot Number        | 196081   |                             |            |
| Description       | ACETONITRILE WITH 0.1% (V/V) TRIFLUOROACETIC ACID (TFA), OPTIMA-LCMS GRADE |                             |            |
| Country of Origin | United States  | Suggested Retest Date       | Nov/2024   |
| Chemical Origin   | Organic - non animal   |                             |            |

| N/A  |            |                                 |                         |
|--|------------|---------------------------------|-------------------------|
| Result Name  | Units      | Specifications                  | Test Value              |
| APPEARANCE   |            | REPORT                          | clear, colorless liquid |
| ASSAY (V/V) TRIFLUOROACETIC ACID                     | %          | Inclusive Between 0.095 - 0.105 | 0.099                   |
| COLOR  | APHA       | <= 10                           | <10                     |
| EVAPORATION RESIDUE                                  | ppm        | <= 1                            | 0.2                     |
| HPLC - UV GRADIENT SUITABILITY<br>PDA (200 - 400 nm) | mAU        | <= 2                            | <2                      |
| IDENTIFICATION                                       | PASS/FAIL  | = PASS TEST                     | PASS TEST               |
| IONIC IMPURITY - ALUMINUM (Al)                       | ppb        | <= 30                           | 1                       |
| IONIC IMPURITY - CALCIUM (Ca)                        | ppb        | <= 50                           | <1                      |
| IONIC IMPURITY - COPPER (Cu)                         | ppb        | <= 10                           | <1                      |
| IONIC IMPURITY - IRON (Fe)                           | ppb        | <= 25                           | 1                       |
| IONIC IMPURITY - LEAD (Pb)                           | ppb        | <= 10                           | <1                      |
| IONIC IMPURITY - MAGNESIUM (Mg)                      | ppb        | <= 30                           | <1                      |
| IONIC IMPURITY - MANGANESE (Mn)                      | ppb        | <= 10                           | <1                      |
| IONIC IMPURITY - NICKEL (Ni)                         | ppb        | <= 10                           | <1                      |
| IONIC IMPURITY - POTASSIUM (K)                       | ppb        | <= 50                           | 2                       |
| IONIC IMPURITY - SILVER (Ag)                         | ppb        | <= 10                           | <1                      |
| IONIC IMPURITY - SODIUM (Na)                         | ppb        | <= 50                           | 11                      |
| IONIC IMPURITY - ZINC (Zn)                           | ppb        | <= 20                           | 1                       |
| LC-MS GRADIENT SUITABILITY                           | ppb        | <= 50                           | <50                     |
| OPTICAL ABS AT 210 NM                                | ABS. UNITS | <= 0.6                          | 0.3                     |
| OPTICAL ABS AT 220 NM                                | ABS. UNITS | <= 0.55                         | 0.35                    |
| OPTICAL ABS AT 230 NM                                | ABS. UNITS | <= 0.4                          | 0.3                     |
| OPTICAL ABS AT 254 NM                                | ABS. UNITS | <= 0.03                         | 0.03                    |
| WATER (H2O)  | %          | <= 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 this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.



## Certificate of Analysis

1 Reagent Lane  
Fair Lawn, NJ 07410  
201.796.7100 tel  
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

---

A handwritten signature in black ink that reads "Julian Burton".

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.