

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 | BP2818 | Quality Test / Release Date | 06/08/2022 | | |
|-------------------|--|-----------------------------|------------|--|--|
| Lot Number | 222256 | | | | |
| Description | ETHYL ALCOHOL, ABSOLUTE, 200 PROOF, FOR MOLECULAR BIOLOGY | | | | |
| Country of Origin | United States | Suggested Retest Date | Jun/2027 | | |
| Chemical Origin | Organic - Plant | | | | |
| BSE/TSE Comment | THIS PRODUCT IS PRODUCED FROM CORN AND DOES NOT CONTAIN ANY MEAT OR MEAT BY- PRODUCTS OR DAIRY OR DAIRY BYPRODUCTS. | | | | |
| Comment | MEETS ACS SPECIFICATIONS. DOES NOT CONTAIN ANY GMO MATERIAL. | | | | |

| N/A | | | | | | |
|------------------------------|-----------|--------------------|-------------------------|--|--|--|
| Result Name | Units | Specifications | Test Value | | | |
| APPEARANCE | | REPORT | Clear, colorless liquid | | | |
| ACETONE & ISOPROPYL ALCOHOL | PASS/FAIL | IN PASS TEST | PASS TEST | | | |
| ASSAY | % | >= 99.5 99.91114 | | | | |
| BENZENE | ppm | <= 2 | <2 | | | |
| COLOR | APHA | <= 10 | <5 | | | |
| DNASE | PASS/FAIL | IN NOT DETECTED | NOT DETECTED | | | |
| EVAPORATION RESIDUE | % | <= 0.001 | 0 | | | |
| IDENTIFICATION | PASS/FAIL | IN PASS TEST | PASS TEST | | | |
| INFRARED SPECTRUM | CONFORMS | IN CONFORMS TO REF | CONFORMS TO REF | | | |
| METHANOL | % | <= 0.1 | <0.1 | | | |
| PROTEASE | PASS/FAIL | IN NOT DETECTED | NOT DETECTED | | | |
| RNASE | PASS/FAIL | IN NOT DETECTED | NOT DETECTED | | | |
| SOLUBILITY IN WATER | PASS/FAIL | IN PASS TEST | PASS TEST | | | |
| SUBSTANCES DARKENED BY H2SO4 | PASS/FAIL | IN PASS TEST | PASS TEST | | | |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | IN PASS TEST | PASS TEST | | | |
| TITRATABLE ACID | mEq/g | <= 0.0005 | 0.00025 | | | |
| TITRATABLE BASE | mEq/g | <= 0.0002 | <0.0002 | | | |
| WATER (H2O) | % | <= 0.2 | 0.08886 | | | |

| Residual Solvents | CONTAINS <0.1% OF THE CLASS 3 SOLVENT METHANOL, AND <50 PPM OF CLASS 3 SOLVENT N- |
|-------------------|---|
| | PROPANOL. ETHYL ALCOHOL ITSELF IS A CLASS 3 SOLVENT. |

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.



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Ira Marootian - Quality Control Manager - Bridgewater