

**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          | J13410           |
| Lot Number                | 254047           |
| Description               | CHOLINE CHLORIDE |
| CAS Number                | 67-48-1          |
| Quality Test/Release Date | 27/Aug/2025      |
| Suggested retest date     | 24/Jun/2027      |
| Country of Origin         | United States    |

| Result Name          | Units             | Specifications      | Test Value               |
|----------------------|-------------------|---------------------|--------------------------|
| APPEARANCE           |                   | REPORT              | White crystalline powder |
| 1,4 DIOXANE          | PASS/FAIL         | = PASS TEST         | PASS TEST                |
| ASSAY (DRY BASIS)    | %                 | >= 98.0             | 100                      |
| HEAVY METALS         | ppm               | <= 10               | <10                      |
| IDENTIFICATION, I.R. | Matches Reference | = MATCHES REFERENCE | MATCHES REFERENCE        |
| IGNITION RESIDUE     | %                 | <= 0.05             | 0.02                     |
| MOISTURE             | %                 | <= 0.5              | 0.3                      |



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.