

## 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          | A481  |
| Lot Number                | 255153  |
| Description               | HYDROCHLORIC ACID, NF/FCC   |
| CAS Number                | 7647-01-0   |
| Quality Test/Release Date | 22/Jan/2026   |
| Suggested retest date     | 21/Jan/2029   |
| Country of Origin         | United States   |
| Declaration of Origin     | Inorganic   |
| BSE/TSE                   | Hydrochloric Acid is manufactured from raw materials that contain no animal parts, products, or by-products, nor do they come into contact with any animal parts, products, or by-products during processing. |

| Result Name                                 | Units              | Specifications                | Test Value              |
|---|--------------------|-------------------------------|-------------------------|
| APPEARANCE                                  |                    | REPORT                        | Clear, colorless liquid |
| FCC Grade - ASSAY                           | %                  | Inclusive Between 35.4 - 38.4 | 37.5                    |
| FCC Grade - BAUME DEGREES                   | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| FCC Grade - BENZENE                         | MG/KG              | <= 0.05                       | <0.001                  |
| FCC Grade - COLOR                           | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| FCC Grade - FLUORINATED ORGANIC COMPOUNDS   | %                  | <= 0.0025                     | <0.0000001              |
| FCC Grade - IDENTIFICATION (ALL LISTED)     | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| FCC Grade - IRON (Fe)                       | MG/KG              | <= 5                          | <0.01                   |
| FCC Grade - LEAD (Pb)                       | MG/KG              | <= 1                          | <0.01                   |
| FCC Grade - MERCURY (Hg)                    | MG/KG              | <= 0.10                       | <0.001                  |
| FCC Grade - NON-VOLATILE RESIDUE            | %                  | <= 0.5                        | <0.00001                |
| FCC Grade - OXIDIZING SUBSTANCES (AS CL2)   | %                  | <= 0.003                      | <0.00001                |
| FCC Grade - REDUCING SUBSTANCES AS SO3      | %                  | <= 0.007                      | <0.00001                |
| FCC Grade - SPECIFIC GRAVITY @ 15.6 C       | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| FCC Grade - SULFATE                         | %                  | <= 0.5                        | <0.00001                |
| FCC Grade - TOTAL ORGANIC COMPOUNDS (NON-F) | MG/KG              | <= 5                          | <0.001                  |
| NF Grade - ASSAY                            | %                  | Inclusive Between 36.5 - 38.0 | 37.5                    |
| NF Grade - BROMIDE OR IODIDE                | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| NF Grade - FREE BROMINE OR CHLORINE         | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| NF Grade - HEAVY METALS (as Pb)             | ppm                | <= 5                          | <0.001                  |
| NF Grade - IDENTIFICATION (ALL LISTED)      | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| NF Grade - NF PROTOCOL REQUIRED             | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| NF Grade - RESIDUAL SOLVENTS                | Meets Requirements | = MEETS REQUIREMENTS          | MEETS REQUIREMENTS      |
| NF Grade - RESIDUE ON IGNITION              | %                  | <= 0.008                      | <0.008                  |
| NF Grade - SULFATE (SO4)                    | PASS/FAIL          | = PASS TEST                   | PASS TEST               |
| NF Grade - SULFITE                          | PASS/FAIL          | = PASS TEST                   | PASS TEST               |

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.

Additional Information Hydrochloric Acid does not contain in whole or in part, nor in any of its raw materials, any products from agricultural derivatives such as wheat, oats, rye, barley, soy, canola, corn, or yeast. It does not contain any genetically modified materials, and it is also free of melamine contamination.



Ash Frey  
Supervisor, Quality Control

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.

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