

CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek. Certificate Number. 2317548

Catalogue Number	38780
Lot Number	A0480450
Description	Hydrochloric acid,for analysis,25% solution in water
CAS Number	7647-01-0
Quality Test/Release Date	01/Apr/2026
Suggested retest date	01/Apr/2031
Country of Origin	BELGIUM
Declaration of Origin	synthetic
BSE/TSE	Not directly derived from or manufactured with any animal byproducts in any way (Including but not limited to fermentation or nutrient broth, catalysts, enzymes).

Result Name	Units	Specifications	Test Value
Appearance (Color)		Clear colorless	Clear colorless
Appearance (Form)		Solution	Solution
Titration with NaOH	%	>=25.0	25.21
Residue after ignition	%	==<0.0005	==<0.0005
Aluminium (Al)	%	==<0.000005	==<0.000005
Barium (Ba)	%	==<0.000002	==<0.000002
Bismuth (Bi)	%	==<0.00001	==<0.00001
Calcium (Ca)	%	==<0.00005	==<0.00005
Cadmium (Cd)	%	==<0.000001	==<0.000001
Cobalt (Co)	%	==<0.000001	==<0.000001
Chromium (Cr)	%	==<0.000002	==<0.000002
Copper (Cu)	%	==<0.000002	==<0.000002
Iron (Fe)	%	==<0.00002	==<0.00002
Potassium (K)	%	==<0.00001	==<0.00001
Lithium (Li)	%	==<0.000001	==<0.000001
Magnesium (Mg)	%	==<0.00001	==<0.00001
Manganese (Mn)	%	==<0.000001	==<0.000001
Molybdenum (Mo)	%	==<0.000002	==<0.000002
Sodium (Na)	%	==<0.00005	==<0.00005
Nickel (Ni)	%	==<0.00002	==<0.00002
Lead (Pb)	%	==<0.000002	==<0.000002
Titanium (Ti)	%	==<0.00001	==<0.00001
Vanadium (V)	%	==<0.000001	==<0.000001
Zirconium (Zr)	%	==<0.00001	==<0.00001
Sulfate (SO4)	%	==<0.0001	==<0.0001
Phosphate (PO4)	%	==<0.00005	==<0.00005
Appearance (Color)		Clear colorless	Clear colorless
Appearance (Form)		Solution	Solution
Titration with NaOH	%	>=25.0	25.21
Residue after ignition	%	==<0.0005	==<0.0005
Aluminium (Al)	%	==<0.000005	==<0.000005
Barium (Ba)	%	==<0.000002	==<0.000002
Bismuth (Bi)	%	==<0.00001	==<0.00001
Calcium (Ca)	%	==<0.00005	==<0.00005
Cadmium (Cd)	%	==<0.000001	==<0.000001
Cobalt (Co)	%	==<0.000001	==<0.000001
Chromium (Cr)	%	==<0.000002	==<0.000002

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.

Copper (Cu)	%	=<0.000002	=<0.000002
Iron (Fe)	%	=<0.00002	=<0.00002
Potassium (K)	%	=<0.00001	=<0.00001
Lithium (Li)	%	=<0.000001	=<0.000001
Magnesium (Mg)	%	=<0.00001	=<0.00001
Manganese (Mn)	%	=<0.000001	=<0.000001
Molybdenum (Mo)	%	=<0.000002	=<0.000002
Sodium (Na)	%	=<0.00005	=<0.00005
Nickel (Ni)	%	=<0.00002	=<0.00002
Lead (Pb)	%	=<0.000002	=<0.000002
Titanium (Ti)	%	=<0.00001	=<0.00001
Vanadium (V)	%	=<0.000001	=<0.000001
Zirconium (Zr)	%	=<0.00001	=<0.00001
Sulfate (SO4)	%	=<0.0001	=<0.0001
Phosphate (PO4)	%	=<0.00005	=<0.00005

Geert Torfs
Supervisor, QC

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 and development use only. 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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