

## CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by INTERTEK SAI Global  
Certificate Number. QMS42099

Catalogue Number	12463
Lot Number	2218249
Description	Hydrochloric acid AR
CAS Number	7647-01-0
Quality Test/Release Date	25/Mar/2022
Expiry Phrase	Use within 3 years of opening
Country of Origin	United Kingdom

Result Name	Units	Specifications	Test Value
Aluminium (Al)	ppm	<= 0.5	<0.2
Arsenic (As)	ppm	<= 0.05	<0.01
Assay	%	>= 35 and <= 39	36.2
Cadmium (Cd)	ppm	<= 0.05	<0.005
Calcium (Ca)	ppm	<= 1	<0.2
Chemical form		Mobile liquid	Mobile liquid
Chromium (Cr)	ppm	<= 0.1	<0.005
Colour	APHA	<= 10	<10
Copper (Cu)	ppm	<= 0.1	<0.01
Free chlorine (ppm)	ppm	<= 4	<1
Iron (Fe)	ppm	<= 0.5	<0.2
Lead (Pb)	ppm	<= 0.1	<0.005
Magnesium (Mg)	ppm	<= 1	<0.02
Nickel (Ni)	ppm	<= 0.1	<0.005
Visual colour		Clear colourless	Clear colourless
Zinc (Zn)	ppm	<= 0.5	<0.05



Ashok Ganatra  
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 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.