

## 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	39007
Lot Number	A0470997
Description	Ammonium hydroxide,for analysis,20% solution in water
CAS Number	1336-21-6
Quality Test/Release Date	14/Mar/2025
Suggested retest date	14/Mar/2028
Country of Origin	SPAIN
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 (Form)		Clear liquid	Clear liquid
Color scale	APHA	≤10	10
Titration with HCl	%	≥20	21
Non-volatile matter	%	≤0.002	0.002
KMnO4-reducing substance	%	≤0.001 (as O)	0.001 (as O)
Carbonate (as CO <sub>2</sub> )	%	≤0.002	≤0.002
Chloride (Cl)	%	≤0.0001	≤0.0001
Phosphate (PO <sub>4</sub> )	%	≤0.0001	≤0.0001
Sulfide (S)	%	≤0.00001	≤0.00001
Heavy metals (as Pb)	ppm	≤1	≤0.5
Arsenic (As)	%	≤0.00001	≤0.00001
Silver (Ag)	%	≤0.000002	≤0.000002
Aluminium (Al)	%	≤0.00001	≤0.00001
Gold (Au)	%	≤0.00001	≤0.00001
Barium (Ba)	%	≤0.00001	≤0.00001
Beryllium (Be)	%	≤0.00001	≤0.00001
Bismuth (Bi)	%	≤0.000005	≤0.000005
Calcium (Ca)	%	≤0.0001	≤0.0001
Cadmium (Cd)	%	≤0.00001	≤0.00001
Cobalt (Co)	%	≤0.00001	≤0.00001
Chromium (Cr)	%	≤0.000005	≤0.000005
Iron (Fe)	%	≤0.00001	≤0.00001
Gallium (Ga)	%	≤0.000005	≤0.000005
Germanium (Ge)	%	≤0.000002	≤0.000002
Mercury (Hg)	%	≤0.00001	≤0.00001
Indium (In)	%	≤0.000005	≤0.000005
Potassium (K)	%	≤0.0001	≤0.0001
Lithium (Li)	%	≤0.000002	≤0.000002
Magnesium (Mg)	%	≤0.00005	≤0.00005
Manganese (Mn)	%	≤0.000001	≤0.000001
Molybdenum (Mo)	%	≤0.000002	≤0.000002
Sodium (Na)	%	≤0.0002	≤0.0002
Nickel (Ni)	%	≤0.000005	≤0.000005
Lead (Pb)	%	≤0.000005	≤0.000005
Platinum (Pt)	%	≤0.00001	≤0.00001
Antimony (Sb)	%	≤0.000002	≤0.000002
Silicon (Si)	%	≤0.00002	≤0.00002

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.

Tin (Sn)	%	=<0.000005	=<0.000005
Strontium (Sr)	%	=<0.0001	=<0.0001
Titanium (Ti)	%	=<0.000005	=<0.000005
Thallium (Tl)	%	=<0.000002	=<0.000002
Vanadium (V)	%	=<0.000002	=<0.000002
Zinc (Zn)	%	=<0.00001	=<0.00001
Zirconium (Zr)	%	=<0.000005	=<0.000005



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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