

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A669	Quality Test / Release Date	03/07/2022
Lot Number	214246	Expiration Date	Feb/2025
Description	AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS		
Country of Origin	United States		
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist.		
Comment	This product is free from genetically modified substances and is gluten free.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Colorless liquid free from suspended matter
ALUMINUM	ppm	<= 0.3	0.001
ARSENIC AND ANTIMONY	ppm	<= 0.05	<0.05
ASSAY	w/w %	Inclusive Between 28.0 - 30.0	28.90
BORON (B)	ppm	<= 0.1	0.005
CALCIUM (Ca)	ppm	<= 0.3	0.010
CARBON DIOXIDE	%	<= 0.002	<0.002
CHLORIDE	ppm	<= 0.5	<0.5
CHROMIUM (Cr)	ppm	<= 0.2	0.001
COPPER (Cu)	ppm	<= 0.1	0.001
GOLD (Au)	ppm	<= 0.3	0.001
HEAVY METALS (as Pb)	ppm	<= 0.5	<0.5
IRON (Fe)	ppm	<= 0.1	0.001
LEAD (Pb)	ppm	<= 0.2	0.001
MAGNESIUM (Mg)	ppm	<= 0.3	0.002
MANGANESE (Mn)	ppm	<= 0.2	0.001
NICKEL (Ni)	ppm	<= 0.1	0.001
NITRATE (NO3)	ppm	<= 2	<2
PHOSPHATE (PO4)	ppm	<= 0.4	<0.4
POTASSIUM (K)	ppm	<= 0.3	0.001
RESIDUE AFTER IGNITION	ppm	<= 3	<3
SODIUM (Na)	ppm	>= 0	0.073

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

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SUBSTANCES REDUCING KMNO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFATE (SO4)	ppm	<= 2	<2
TIN (Sn)	ppm	<= 0.3	0.001
TITANIUM (Ti)	ppm	<= 0.3	0.001
ZINC (Zn)	ppm	<= 0.3	0.001



Julian Burton - Quality Control Manager - Bridgewater

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