



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 – 0120633

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 on the intended use of the end project. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	A512	Quality Test / Release Date	04/16/2025
Lot Number	7125040	Expiration Date	04/16/2028
Description	AMMONIUM HYDROXIDE (TRACEMETAL GRADE)		
Country of Origin	Canada		
Chemical Origin	Inorganic		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, colorless liquid
ASSAY (NH ₃)	% by w/w	20 - 22%	21%
COLOR	APHA	<= 10	< 10
ALUMINUM (Al)	ppb	<= 1	< 0.2
ANTIMONY (Sb)	ppb	<= 0.5	< 0.1
ARSENIC (As)	ppb	<= 1	< 0.1
BARIUM (Ba)	ppb	<= 0.1	< 0.1
BERYLLIUM (Be)	ppb	<= 0.1	< 0.1
BISMUTH (Bi)	ppb	<= 0.1	< 0.1
CADMIUM (Cd)	ppb	<= 0.5	< 0.1
CALCIUM (Ca)	ppb	<= 1	< 0.2
CERIUM (Ce)	ppb	<= 0.1	< 0.1
CESIUM (Cs)	ppb	<= 0.1	< 0.1
CHROMIUM (Cr)	ppb	<= 0.5	< 0.1
COBALT (Co)	ppb	<= 0.5	< 0.1
COPPER (Cu)	ppb	<= 0.5	< 0.1
DYSPROSIUM (Dy)	ppb	<= 0.1	< 0.1
ERBIUM (Er)	ppb	<= 0.1	< 0.1
EUROPIUM (Eu)	ppb	<= 0.1	< 0.1
GADOLINIUM (Gd)	ppb	<= 0.1	< 0.1
GALLIUM (Ga)	ppb	<= 0.1	< 0.1
GERMANIUM (Ge)	ppb	<= 0.1	< 0.1
GOLD (Au)	ppb	<= 0.5	< 0.1
HAFNIUM (Hf)	ppb	INFORMATION ONLY	< 1
HOLMIUM (Ho)	ppb	<= 0.1	< 0.1
INDIUM (In)	ppb	<= 0.1	< 0.1
IRON (Fe)	ppb	<= 1	< 0.1
LANTHANUM (La)	ppb	<= 0.1	< 0.1
LEAD (Pb)	ppb	<= 0.1	< 0.1
LITHIUM (Li)	ppb	<= 0.1	< 0.1
LUTETIUM (Lu)	ppb	<= 0.1	< 0.1

Result Name	Units	Specifications	Test Value
MAGNESIUM (Mg)	ppb	<= 1	< 0.1
MANGANESE (Mn)	ppb	<= 0.5	< 0.1
MERCURY (Hg)	ppb	<= 0.2	< 0.2
MOLYBDENUM (Mo)	ppb	<= 0.5	< 0.1
NEODYMIUM (Nd)	ppb	<= 0.1	< 0.1
NICKEL (Ni)	ppb	<= 0.5	< 0.1
NIOBIUM (Nb)	ppb	<= 0.1	< 0.1
PALLADIUM (Pd)	ppb	INFORMATION ONLY	< 1
PLATINUM (Pt)	ppb	INFORMATION ONLY	< 1
POTASSIUM (K)	ppb	<= 1	< 0.1
PRASEODYMIUM (Pr)	ppb	<= 0.1	< 0.1
RHENIUM (Re)	ppb	INFORMATION ONLY	< 1
RHODIUM (Rh)	ppb	<= 0.5	< 0.1
RUBIDIUM (Rb)	ppb	<= 0.1	< 0.1
RUTHENIUM (Ru)	ppb	INFORMATION ONLY	< 1
SAMARIUM (Sm)	ppb	<= 0.1	< 0.1
SCANDIUM (Sc)	ppb	<= 0.1	< 0.1
SELENIUM (Se)	ppb	<= 1	< 0.2
SILVER (Ag)	ppb	<= 0.5	< 0.1
SODIUM (Na)	ppb	<= 1	< 0.1
STRONTIUM (Sr)	ppb	<= 0.1	< 0.1
TELLURIUM (Te)	ppb	<= 0.1	< 0.1
TERBIUM (Tb)	ppb	<= 0.1	< 0.1
THALLIUM (Tl)	ppb	<= 0.1	< 0.1
THORIUM (Th)	ppb	<= 0.1	< 0.1
THULIUM (Tm)	ppb	<= 0.1	< 0.1
TIN (Sn)	ppb	<= 0.5	< 0.1
TITANIUM (Ti)	ppb	<= 0.5	< 0.1
TUNGSTEN (W)	ppb	<= 0.1	< 0.1
URANIUM (U)	ppb	<= 0.1	< 0.1
VANADIUM (V)	ppb	<= 0.5	< 0.1
YTTERBIUM (Yb)	ppb	<= 0.1	< 0.1
YTTRIUM (Y)	ppb	<= 0.1	< 0.1
ZINC (Zn)	ppb	<= 0.5	< 0.1
ZIRCONIUM (Zr)	ppb	<= 0.1	< 0.1
CHLORIDE (Cl)	ppm	<= 0.5	< 0.5
PHOSPHATE (PO ₄ ³⁻)	ppm	<= 0.01	< 0.01
SULFATE (SO ₄ ²⁻)	ppm	<= 1	< 1



Kalyan Paruchuri - Quality Control Supervisor - Bridgewater

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.