

CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek Global
 Certificate Number: CERT-0120633

Catalogue Number	A509
Lot Number	24027427
Description	NITRIC ACID (TRACE METAL GRADE)
CAS Number	7697-37-2,7732-18-5
Quality Test/Release Date	22/Apr/2026
Expiration Date	28/Dec/2027
Country of Origin	United States
Declaration of Origin	Inorganic
BSE/TSE	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
ALUMINUM	ppb	<= 1	<1
ANTIMONY (Sb)	ppb	<= 0.5	<0.5
ARSENIC (As)	ppb	<= 0.5	<0.5
ASSAY	%	Inclusive Between 67 - 70	69.0
BARIUM (Ba)	ppb	<= 0.1	<0.1
BERYLLIUM (Be)	ppb	<= 0.1	<0.1
BISMUTH (Bi)	ppb	<= 0.1	<0.1
BORON (B)	ppb	<= 1	<1
CADMIUM (Cd)	ppb	<= 0.5	<0.5
CALCIUM (Ca)	ppb	<= 1	<1
CERIUM (Ce)	ppb	<= 0.1	<0.1
CESIUM (Cs)	ppb	<= 0.1	<0.1
CHLORIDE	ppm	<= 0.2	<0.2
CHROMIUM (Cr)	ppb	<= 1	<1
COBALT (Co)	ppb	<= 0.5	<0.5
COLOR	APHA	<= 10	<10
COPPER (Cu)	ppb	<= 0.5	<0.5
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	<= 0.1	<0.1
HAFNIUM (Hf)	ppb	<= 0.1	<0.1
HOLMIUM (Ho)	ppb	<= 0.1	<0.1
INDIUM (In)	ppb	<= 0.1	<0.1
IRON (Fe)	ppb	<= 1	<1
LANTHANUM (La)	ppb	<= 0.1	<0.1

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.

LEAD (Pb)	ppb	<= 0.1	<0.1
LITHIUM (Li)	ppb	<= 0.1	<0.1
LUTETIUM (Lu)	ppb	<= 0.1	<0.1
MAGNESIUM (Mg)	ppb	<= 1	<1
MANGANESE (Mn)	ppb	<= 0.1	<0.1
MERCURY (Hg)	ppb	<= 0.1	<0.1
MOLYBDENUM (Mo)	ppb	<= 0.1	<0.1
NEODYMIUM (Nd)	ppb	<= 0.1	<0.1
NICKEL (Ni)	ppb	<= 0.5	<0.5
NIOBIUM (Nb)	ppb	<= 0.1	<0.1
PALLADIUM (Pd)	ppb	<= 0.5	<0.5
PLATINUM (Pt)	ppb	<= 0.5	<0.5
POTASSIUM (K)	ppb	<= 1	<1
PRASEODYMIUM (Pr)	ppb	<= 0.1	<0.1
RHENIUM (Re)	ppb	<= 0.1	<0.1
RHODIUM (Rh)	ppb	<= 0.5	<0.5
RUBIDIUM (Rb)	ppb	<= 0.1	<0.1
RUTHENIUM (Ru)	ppb	<= 0.5	<0.5
SAMARIUM (Sm)	ppb	<= 0.1	<0.1
SCANDIUM (Sc)	ppb	<= 0.1	<0.1
SELENIUM (Se)	ppb	<= 1	<1
SILVER (Ag)	ppb	<= 0.1	<0.1
SODIUM (Na)	ppb	<= 1	<1
STRONTIUM (Sr)	ppb	<= 0.1	<0.1
TANTALUM (Ta)	ppb	IN INFORMATION ONLY	<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	<0.5
TITANIUM (Ti)	ppb	<= 0.5	<0.5
TOTAL PHOSPHOROUS (P)	ppm	<= 0.01	<0.01
TOTAL SULFUR	ppm	<= 0.3	<0.3
TUNGSTEN (W)	ppb	<= 0.1	<0.1
URANIUM (U)	ppb	<= 0.1	<0.1
VANADIUM (V)	ppb	<= 0.5	<0.5
YTTERBIUM (Yb)	ppb	<= 0.1	<0.1
YTTRIUM (Y)	ppb	<= 0.1	<0.1
ZINC (Zn)	ppb	<= 0.5	<0.5
ZIRCONIUM (Zr)	ppb	<= 0.1	<0.1

Ash Frey
Supervisor, Quality Control

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

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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.

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