

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	A117
Lot Number	261299
Description	FORMIC ACID, OPTIMA LC/MS GRADE
CAS Number	64-18-6
Quality Test/Release Date	22/May/2026
Suggested retest date	21/May/2029
Country of Origin	United States
Declaration of Origin	Synthetic

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, colorless fuming liquid.
ASSAY	%	>= 99.0	99.5
CHLORIDE	ppm	<= 5	<5
COLOR	APHA	<= 10	<10
EVAPORATION RESIDUE	ppm	<= 1	1
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IONIC IMPURITY - ALUMINUM (Al)	ppb	<= 20	<1
IONIC IMPURITY - CALCIUM (Ca)	ppb	<= 50	<1
IONIC IMPURITY - COPPER (Cu)	ppb	<= 10	<1
IONIC IMPURITY - IRON (Fe)	ppb	<= 10	<1
IONIC IMPURITY - LEAD (Pb)	ppb	<= 10	<1
IONIC IMPURITY - MAGNESIUM (Mg)	ppb	<= 10	<1
IONIC IMPURITY - MANGANESE (Mn)	ppb	<= 10	<1
IONIC IMPURITY - NICKEL (Ni)	ppb	<= 10	<1
IONIC IMPURITY - POTASSIUM (K)	ppb	<= 20	1
IONIC IMPURITY - SILVER (Ag)	ppb	<= 10	<1
IONIC IMPURITY - SODIUM (Na)	ppb	<= 50	1
IONIC IMPURITY - ZINC (Zn)	ppb	<= 20	<1
LC-MS GRADIENT SUITABILITY	PASS/FAIL	= PASS TEST	PASS TEST
LC-UV GRADIENT SUITABILITY	PASS/FAIL	= PASS TEST	PASS TEST
LCMS SUITABILITY - POS. MODE (AS PROPAZINE)	ppb	<= 50	<50
OPTICAL ABS AT 210 NM AT 0.1%	ABS. UNITS	<= 1.25	1.14
OPTICAL ABS AT 220 NM AT 0.1%	ABS. UNITS	<= 0.85	0.77
OPTICAL ABS AT 230 NM AT 0.1%	ABS. UNITS	<= 0.55	0.31
OPTICAL ABS AT 254 NM AT 0.1%	ABS. UNITS	<= 0.01	<0.01
SULFATE (SO4)	ppm	<= 50	<50
SULFITE	ppm	<= 20	<20

Additional Information Metals tested as 0.1 % (wt/wt) solution in 2 % Nitric acid; LC-UV Gradient Suitability and LC-MS is tested at a 0.1 % aqueous solution; Protease is tested as a 0.1 % solution in water.

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.



Ash Frey
Supervisor, Quality Control

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