

Fisher Scientific UK Ltd. Bishop Meadow Road Loughborough, LE11 5RG, United Kingdom

## **CERTIFICATE OF ANALYSIS**

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number. QMS42099

Catalogue Number Lot Number Description CAS Number Quality Test/Release Date Expiry Phrase Country of Origin A456 2524396 Methanol LC-MS For LC-MC analysis 67-56-1 27/Jan/2025 Expires:5 years from analysis date Trinidad and Tobago

APPEARANCEMisb b*CLEAR, COLORLESSCLEAR, COLORCLESS LIQUIDASSAY%>99.90.00COLOR84PHA<10.00EVAPORATION RESIDUEPM<10None DetectedIDENTIFCATIONMust b*ASSASSIONIC IMPURITY ALUMINUM (A)ppb<10<20IONIC IMPURITY CADMIUM (Cd)ppb<10<20IONIC IMPURITY CACHUM (Ba)ppb<10<20IONIC IMPURITY NANGANESTppb<10<20IONIC IMPURITY NANGANESTppb<10<20IONIC IMPURITY NICKEL (NI)ppb<10<20IONIC IMPURITY SOLUM (NA)ppb<10<20IONIC IMPURITY SOLUM (NA)ppb<10<20I	Result Name	Units	Specifications	Test Value
COLOR   APHA   <= 10      EVAPORATION RESIDUE   ppm   <= 1	APPEARANCE		,	CLEAR, COLORLESS LIQUID
EVAPORATION RESIDUE   ppm   <= 1   None Detected     IDENTIFICATION   Must be 'PASS'   PASS     IONIC IMPURITY - ALUMINUM (A)   ppb   <= 10	ASSAY	%	>= 99.9	100.00
IDENTIFICATIONMust be 'PASS'PASSIONIC IMPURITY - ALUMINUM (AI)ppb $< = 10$ $< 5$ IONIC IMPURITY - ALUMINUM (AI)ppb $< = 10$ $< 2$ IONIC IMPURITY - BARIUM (Ba)ppb $< = 10$ $< 2$ IONIC IMPURITY - CALCIUM (Cd)ppb $< = 10$ $< 2$ IONIC IMPURITY - CHROMIUM (Cd)ppb $< = 10$ $< 2$ IONIC IMPURITY - COBALT (Co)ppb $< = 10$ $< 2$ IONIC IMPURITY - COBALT (Co)ppb $< = 10$ $< 2$ IONIC IMPURITY - COBALT (Co)ppb $< = 10$ $< 5$ IONIC IMPURITY - IRON (Fe)ppb $< = 10$ $< 5$ IONIC IMPURITY - IRON (Fe)ppb $< = 10$ $< 5$ IONIC IMPURITY - HANGANESE (Mn)ppb $< = 10$ $< 2$ IONIC IMPURITY - MANGANESE (Mn)ppb $< = 10$ $< 2$ IONIC IMPURITY - MANGANESE (Mn)ppb $< = 10$ $< 2$ IONIC IMPURITY - NICKEL (NI)ppb $< = 10$ $< 2$ IONIC IMPURITY - SULVER (Ag)ppb $< = 10$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 10$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 10$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 50$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 50$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 10$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 10$ $< 5$ IONIC IMPURITY - SULVER (Ag)ppb $< = 50$ $< 5$ <td>COLOR</td> <td>APHA</td> <td>&lt;= 10</td> <td>&lt;5</td>	COLOR	APHA	<= 10	<5
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	EVAPORATION RESIDUE	ppm	<= 1	None Detected
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	IDENTIFICATION		Must be 'PASS'	PASS
IONIC IMPURITY - CADMIUM (Cd) ppb <= 10	IONIC IMPURITY - ALUMINUM (AI)	ppb	<= 10	<5
IONIC IMPURITY - CALCIUM (Ca) ppb <= 20	IONIC IMPURITY - BARIUM (Ba)	ppb	<= 10	<2
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - CADMIUM (Cd)	ppb	<= 10	<2
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - CALCIUM (Ca)	ppb	<= 20	<10
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - CHROMIUM (Cr)	ppb	<= 10	<2
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - COBALT (Co)	ppb	<= 10	<2
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - COPPER (Cu)	ppb	<= 10	<5
IONIC IMPURITY - MAGNESUM (Mg) pb <= 10	IONIC IMPURITY - IRON (Fe)	ppb	<= 10	<5
IONIC IMPURITY - MANGANESE (M)pb<= 10<2IONIC IMPURITY - NICKEL (Ni)ppb<= 10	IONIC IMPURITY - LEAD (Pb)	ppb	<= 10	<5
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	IONIC IMPURITY - MAGNESIUM (Mg)	ppb	<= 10	<5
IONIC IMPURITY - POTASSIUM (K)ppb<= 10<10IONIC IMPURITY - SILVER (Ag)ppb<= 10	IONIC IMPURITY - MANGANESE (Mn)	ppb	<= 10	<2
IONIC IMPURITY - SILVER (Ag) $\mu b$ $<= 10$ $< 2$ IONIC IMPURITY - SODIUM (Na) $ppb$ $<= 50$ $< 50$ IONIC IMPURITY - TIN (Sn) $ppb$ $<= 10$ $< 5$ IONIC IMPURITY - ZINC (Zn) $ppb$ $<= 10$ $< 5$ LC GRADIENT TEST WITH PDA (200-400 NM) $mAU$ $<= 2$ None DetectedLCMS SUITABILITY - NEG. MODE (AS $ppb$ $<= 50$ $< 50$ CHLORAMPHENICOL) $ppb$ $<= 100$ $< 100$ DOTICAL ABS AT 210 NMABS. UNITS $<= 0.5$ $0.188$ OPTICAL ABS AT 214 NMABS. UNITS $<= 0.2$ $0.062$ OPTICAL ABS AT 220 NMABS. UNITS $<= 0.11$ $0.029$ OPTICAL ABS AT 254 NMABS. UNITS $<= 0.005$ $0.005$ OPTICAL ABS AT 260 NMABS. UNITS $<= 0.005$ $0.005$ OPTICAL ABS AT 280 NMABS. UNITS $<= 0.0003$ $0.0001$ TITRATABLE ACID $mEq/g$ $<= 0.0002$ $0.0002$	IONIC IMPURITY - NICKEL (Ni)	ppb	<= 10	<2
IONIC IMPURITY - SODIUM (Na)ppb<= 50<50IONIC IMPURITY - TIN (Sn)ppb<= 10	IONIC IMPURITY - POTASSIUM (K)	ppb	<= 10	<10
IONIC IMPURITY - TIN (Sn)ppb<= 10<5IONIC IMPURITY - ZINC (Zn)ppb<= 10	IONIC IMPURITY - SILVER (Ag)	ppb	<= 10	<2
IONIC IMPURITY - ZINC (Zn)ppb<= 10<5LC GRADIENT TEST WITH PDA (200-400 NM)mAU<= 2	IONIC IMPURITY - SODIUM (Na)	ppb	<= 50	<50
LC GRADIENT TEST WITH PDA (200-400 NM)mAU<= 2None DetectedLCMS SUITABILITY - NEG. MODE (ASppb<= 50	IONIC IMPURITY - TIN (Sn)	ppb	<= 10	<5
LCMS SUITABILITY - NEG. MODE (AS CHLORAMPHENICOL)ppb<= 50<50LCMS SUITABILITY - POS. MODE (AS PROPAZINE)ppb<= 100	IONIC IMPURITY - ZINC (Zn)	ppb	<= 10	<5
CHLORAMPHENICOL) ppb <= 50	LC GRADIENT TEST WITH PDA (200-400 NM)	mAU	<= 2	None Detected
CHLORAMPHENICOL)ChromeLCMS SUITABILITY - POS. MODE (AS PROPAZINE)ppb<= 100	LCMS SUITABILITY - NEG. MODE (AS	nnh	<= 50	<50
OPTICAL ABS AT 210 NM ABS. UNITS <= 0.5	CHLORAMPHENICOL)	ppp	~ 50	-50
OPTICAL ABS AT 214 NM ABS. UNITS <= 0.4	LCMS SUITABILITY - POS. MODE (AS PROPAZINE)	ppb	<= 100	<100
OPTICAL ABS AT 220 NM ABS. UNITS <= 0.2	OPTICAL ABS AT 210 NM	ABS. UNITS	<= 0.5	0.188
OPTICAL ABS AT 230 NM   ABS. UNITS   <= 0.1   0.029     OPTICAL ABS AT 254 NM   ABS. UNITS   <= 0.01	OPTICAL ABS AT 214 NM	ABS. UNITS	<= 0.4	0.107
OPTICAL ABS AT 254 NM   ABS. UNITS   <= 0.01   0.008     OPTICAL ABS AT 260 NM   ABS. UNITS   <= 0.005	OPTICAL ABS AT 220 NM	ABS. UNITS	<= 0.2	0.062
OPTICAL ABS AT 260 NM   ABS. UNITS   <= 0.005   0.005     OPTICAL ABS AT 280 NM   ABS. UNITS   <= 0.005	OPTICAL ABS AT 230 NM	ABS. UNITS	<= 0.1	0.029
OPTICAL ABS AT 280 NM   ABS. UNITS   <= 0.005   0.005     TITRATABLE ACID   mEq/g   <= 0.0003	OPTICAL ABS AT 254 NM	ABS. UNITS	<= 0.01	0.008
TITRATABLE ACID   mEq/g   <= 0.0003   0.0001     TITRATABLE BASE   mEq/g   <= 0.0002	OPTICAL ABS AT 260 NM	ABS. UNITS	<= 0.005	0.005
TITRATABLE BASE mEq/g <= 0.0002 0.00002	OPTICAL ABS AT 280 NM	ABS. UNITS	<= 0.005	0.005
	TITRATABLE ACID	mEq/g	<= 0.0003	0.0001
WATER (H2O) % <= 0.02 0.009	TITRATABLE BASE	mEq/g	<= 0.0002	0.00002
	WATER (H2O)	%	<= 0.02	0.009

Additional Information Filtered to 0.1 micron

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.



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Ashok Ganatra Supervisor, QC

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