

Certificate of Analysis

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Description

Optimize™ reagents are preformulated macromolecular crystallization grade solutions designed specifically for the crystallization of proteins, peptides, and nucleic acids. Each Optimize solution is formulated using high purity salts, polymers, and buffers. Sterile filtered Optimize reagents are formulated at convenient ready to use concentrations.

Optimize reagents remove the guesswork and make the process of reproducing preliminary screening conditions and general optimization faster, easier, and more convenient. When using Optimize reagents the user moves directly from the screen to the optimization with no time wasted searching for and formulating salts, buffers, and viscous polymers. This Certificate of Analysis indicates the quality and performance of the reagent.

Buffer Titration

The following table can be used to determine the appropriate mix of 0.5 M MES monohydrate and 1.0 M NaOH to give the desired pH. The volumes supplied below assume one will have a final buffer concentration of 0.1 M in a final reservoir volume of 1,000 microliters. This buffer will give pH values ± 0.01 at a temperature of 25°C.

Titration Table for 0.5 M MES monohydrate with 1.0 M NaOH

pH	1.0 M NaOH (μ l)	0.5 M MES (μ l)
5.2	12	200
5.3	15	200
5.4	18	200
5.5	22	200
5.6	26	200
5.7	31	200
5.8	35	200
5.9	40	200
6.0	46	200
6.1	51	200
6.2	59	200
6.3	62	200
6.4	67	200
6.5	72	200
6.6	76	200
6.7	81	200
6.8	85	200
6.9	88	200
7.0	91	200
7.1	93	200

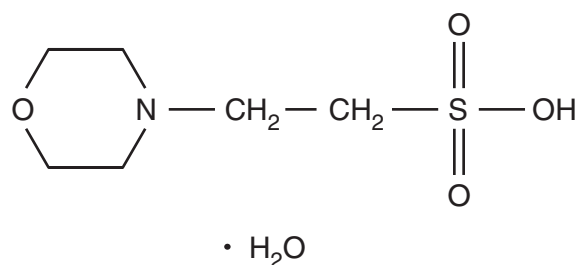
Storage/Stability

Solutions are stable at 2-8°C for months. Autoclaving is not recommended for any sulfonic acid buffer. When MES solutions are autoclaved, they turn yellow (although pH does not change measurably). The identity of the yellow breakdown product is unknown. When MES solutions are stored at room temperature, they can turn yellow within six months.

Technical Support

Inquiries regarding Optimize reagent formulation, interpretation of screen results, optimization strategies and general inquiries regarding crystallization are welcome. Please e-mail, fax, or telephone your request to Hampton Research. Fax and e-mail Technical Support are available 24 hours a day. Telephone technical support is available 8:00 a.m. to 4:30 p.m. USA Pacific Standard Time.

Danielle Pagano
Quality Control



Property Test

Lot (Sample) Results

Product Name	0.5 M MES monohydrate
Synonyms	2-(N-Morpholino)ethanesulfonic acid, 4-Morpholineethanesulfonic acid monohydrate
Product Number	HR2-587
Lot Number	_____
Formula Weight (M _r)	213.25
Formula	C ₆ H ₁₃ NO ₄ S · H ₂ O
CAS Number	[145224-94-8]
EC Number	224-632-3
Beilstein Registry Number	6350956
RTECS	QE3479500
MDL Number	MFCD00149409
PubChem Substance ID	24885996
Purity	≥ 99.0%
Appearance (Starting Material)	Fine Crystals with Lumps
Appearance (Solution)	Clear, Colorless

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<u>Property Test</u>	<u>Lot (Sample) Results</u>
pKa	6.1 at 25°C 6.15 at 20°C
Absorbance	260 nm A _{max} : 0.03 280 nm A _{max} : 0.03
Identification (IR)	Passes Test
Residue on Ignition	0.05% max
pH	_____ at 25°C
pH Range	3.2 - 3.4 at 25°C
Refractive Index	_____ at 20°C
Refractive Index Range	1.34655 - 1.34731 at 20°C
Conductivity	_____ μS/cm at 25°C
Conductivity Range	166.4 - 2440 μS/cm at 25°C
DNase	None Detected
RNase	None Detected
Protease	None Detected
Heavy Metals	2 ppm max
As	≤ 5 ppm max
Cl	≤ 0.005%
Cu	≤ 5 ppm max
Fe	≤ 5 ppm max
Pb	≤ 5 ppm max
SO ₄	≤ 0.005%

Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317 U.S.A.
Tel: (949) 425-1321 • Fax: (949) 425-1611
Technical Support e-mail: tech@hrmail.com
Website: www.hamptonresearch.com