

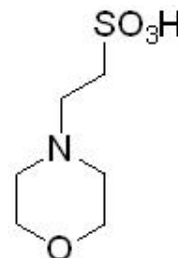
Specification Comparison

MES

Sigma-Aldrich® MES Physical Properties

Synonyms

2-(N-Morpholino)ethanesulfonic acid
 4-Morpholineethanesulfonic acid



| | | | | | |
|--------------------------|--|------------------------|-----------|--------------------|------|
| Molecular Formula | C ₆ H ₁₃ NO ₄ S · xH ₂ O | CAS Number | 4432-31-9 | pKa (at 20) | 6.16 |
| Molecular Weight | 195.24 (anhydrous basis) | Useful pH range | 5.5 - 6.7 | pKa (at 25) | 6.1 |
| | | | | pKa (at 37) | 5.97 |

Sigma-Aldrich MES Specifications Comparison

| | M3671 | M8250 | M5287 | M2933 | 69890 |
|---------------|--|--------------------|---|--|----------------------|
| Grade | low moisture content, ≥99% (titration) | ≥99.5% (titration) | ≥99.5% (titration), pH 2.5 - 4.0 (20 °C, 0.5 M in H ₂ O), SigmaUltra | BPC, plant cell culture tested, ≥99.5% | BioUltra, ≥99.5% (T) |
| Purity | ≥99% | ≥99.5% | ≥99.5% | ≥99.5% | ≥99.5% |

Reagent Testing

| | M3671 | M8250 | M5287 | M2933 | 69890 |
|---|-------|-------|--|-------|--|
| Enhanced Quality Profile Buffers | X | X | X | X | |
| 260NM | | | ≤0.025 | | ≤0.025 |
| 280NM | | | ≤0.020 | | ≤0.020 |
| 290NM | ≤0.05 | ≤0.05 | | ≤0.05 | |
| IR | X | | | X | |
| pH | | | 2.5 - 4.0 (20 °C, 0.5 M in H ₂ O) | | 2.5 - 4.0 (20 °C, 0.5 M in H ₂ O) |
| Karl Fischer | ≤1.0% | ≤9% | report result | ≤9% | |
| Insoluble Matter | | | filter test | | filter test |
| Residue on Ignition | | | ≤0.05% | | ≤0.05% |

| Life Science Testing | | | | | |
|----------------------------|----------|----------|----------|------------|-----------|
| | M3671 | M8250 | M5287 | M2933 | 69890 |
| Synthetic | | X | | | |
| Endotoxin | | | | ≤0.1 eu/mg | |
| SPC | | | | ≤100 cfu/g | |
| Plant cell test | | | | X | |
| RNase | | | | X | |
| DNase | | | | X | |
| Nickase | | | | X | |
| Protease | | | | X | |
| Trace Elemental Impurities | | | | | |
| | M3671 | M8250 | M5287 | M2933 | 69890 |
| Sodium(Na) | | | ≤0.005% | | ≤0.0050% |
| Chloride(Cl) | | | ≤0.005% | | ≤0.0050% |
| Sulfate(SO ₄) | | | | | ≤0.0050% |
| Aluminum(Al) | | | ≤0.0005% | | ≤0.0005% |
| Arsenic(As) | | | ≤0.0001% | | ≤0.00001% |
| Barium(Ba) | | | ≤0.0005% | | ≤0.0005% |
| Bismuth(Bi) | | | ≤0.0005% | | ≤0.0005% |
| Calcium(Ca) | | | ≤0.002% | | ≤0.0020% |
| Cadmium(Cd) | | | ≤0.0005% | | ≤0.0005% |
| Cobalt(Co) | | | ≤0.0005% | | ≤0.0005% |
| Chromium(Cr) | | | ≤0.0005% | | ≤0.0005% |
| Copper(Cu) | | | ≤0.0005% | | ≤0.0005% |
| Iron(Fe) | | | ≤0.0005% | ≤0.0005% | ≤0.0005% |
| Potassium(K) | | | ≤0.005% | | ≤0.0050% |
| Lithium(Li) | | | ≤0.0005% | | ≤0.0005% |
| Magnesium (Mg) | | | ≤0.0005% | | ≤0.0005% |
| Manganese (Mn) | | | ≤0.0005% | | ≤0.0005% |
| Molybdenum (Mo) | | | ≤0.0005% | | ≤0.0005% |
| Nickel(Ni) | | | ≤0.0005% | | ≤0.0005% |
| Lead(Pb) | ≤0.0005% | ≤0.0005% | ≤0.0005% | ≤0.0005% | ≤0.0005% |
| Strontium(Sr) | | | ≤0.0005% | | ≤0.0005% |
| Zinc(Zn) | | | ≤0.0005% | | ≤0.0005% |

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