

# CERTIFICATE OF ANALYSIS

Product Description      MES, MONOHYDRATE  
2-(N-MORPHOLINO)ETHANESULFONIC ACID  
Product Number        M825  
Lot Number              HWA0825093  
Storage Temperature    Room Temperature  
Molecular Weight       213.3 g/mol  
Formula                  C<sub>6</sub>H<sub>13</sub>NO<sub>4</sub>S•H<sub>2</sub>O  
CAS Number             145224-94-8

## Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 100 mg/mL	Passes
pH	Under Development	4.0
Physical Appearance: Color* Texture	PM-1 to PM-4 Fine to Crystalline Powder that may have larger clumps	PM-4 White Crystalline Powder
Solution Appearance: Clarity Color	Clear Colorless	Clear Colorless
Average Time to Dissolve (For Information Only)	Within 5 min	Passes
Insolubles	None	Passes
FTIR	Conforms to Structure	Passes
Purity	Minimum 98.0%	99.80%

\* Product color based upon comparisons between sample and standardized color wheel (Benjamin Moore® Color Preview™).

## Biological Testing:

Test Concentration: 1.0 g/L

TEST SPECIFICATION	PLANT CELL LINE	RESULTS
This product is commonly used as a buffering agent. It is tested with two or more plant cell lines to ensure there are no phytotoxic impurities that would inhibit growth or produce morphological aberrations to the plants.	African Violet	Passes
	Tobacco Callus	Passes

The material described in this certificate is synthetic. No animal- or plant-derived components were used in the manufacture of this product.

**PhytoTech Labs Inc. provides the above information intended to be used only as a guide to the appropriate handling of this material by a properly trained person. PhytoTech Labs Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

Date of Release: 19-June-2020

Recommended Shelf Life Date: June 2028



David S. Hart  
Technical Services Manager

**PhytoTech Labs Inc.**  
14610 W 106<sup>TH</sup> St. Lenexa, KS 66215  
Phone: 1-888-749-8682 or 1-913-341-5343  
Fax: 1-888-449-8682 or 1-913-341-5442  
Phytotechlab.com