

# CERTIFICATE OF ANALYSIS

Product Description MANGANESE SULFATE, MONOHYDRATE  
Product Number M250  
Lot Number 11K0250007  
Storage Temperature Room Temperature  
Molecular Weight 169.02  
Formula  $MnSO_4 \cdot H_2O$   
CAS Number 10034-96-5

## Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 10 mg/mL	Passes
pH	Under Development	4.70
Physical Appearance		
Color*	2092-70 to 2105-70	2093-70 Light Pink
Texture	Fine Powder, may form clumps	Fine Powder, forms clumps
Solution Appearance		
Clarity	Clear	Clear
Color	Colorless	Colorless
Average Time to Dissolve	Within 3 min	Passes
Insolubles	None	Passes
Purity	Minimum 98%	99.84%

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

## Biological Testing:

Test Concentration: 16.0 mg/L

TEST SPECIFICATION	PLANT CELL LINE	RESULTS
Supports and/or facilitates plant growth and/or shoot proliferation in two or more plant tissue cultured lines with no morphological aberrations to plants	Tobacco callus	Passes
	Boston Fern	Passes

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

**PhytoTechnology Laboratories® provides the above information intended to be used only as a guide to the appropriate handling of this material by a properly trained person. PhytoTechnology Laboratories® 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.**

Recommended Shelf Life Date: October 2019



Gary Seckinger, Ph.D.



PhytoTechnology  
Laboratories®  
Dedicated to Growth

### **PhytoTechnology Laboratories®**

Mailing Address: P.O. Box 12205, Shawnee Mission, KS 66282-2205  
Phone: 1-888-749-8682 (1-913-341-5343 *Outside the USA & Canada*)  
Fax: 1-888-449-8682 (1-913-341-5442 *Outside the USA & Canada*)  
Visit our Web Site at <http://www.phytotechlab.com>



Created on 28 November 2011 PN