

CERTIFICATE OF ANALYSIS

Product Description MANGANESE CHLORIDE, TETRAHYDRATE
USP GRADE
Product Number M5561
Lot Number 09A5561001
Storage Temperature Room Temperature
Molecular Weight 197.91
Formula $MnCl_2 \cdot 4H_2O$
CAS Number 13446-34-9

Physicochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 50 mg/mL	Passes
pH	Under Development	4.87
Physical Appearance Color* Texture	2008-70 to 2011-70 Crystalline Powder	2009-70 Light Pink Crystalline Powder
Solution Appearance Clarity Color	Clear Colorless	Clear Colorless
Average Time to Dissolve	Within 1 min	Passes
Insolubles	None	Passes
Purity	Minimum 98.0%	99.7%
Loss on Drying	36.0% - 38.5%	36.3%
USP Required Assays	Passes	Passes

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

Biological Testing:

Test Concentration: 200.0 mg/mL

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	African Violet	Passes
	Syngonium	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, LLC 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: January 2017



Gary Seckinger, Ph.D.



PhytoTechnology
Laboratories, LLC
Dedicated to Growth

PhytoTechnology Laboratories, LLC

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