CERTIFICATE OF ANALYSIS

Product Description Spermidine, Free Base

N-(3-AMINOPROPYL)-1,4-BUTANEDIAMINE

Product Number S837

Lot Number SMR0837015

Storage Temperature $2-8^{\circ}C$ Molecular Weight 145.25Formula $C_7H_{19}N_3$ CAS Number 124-20-9

Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 1.45 mg/mL	Passes
рН	Under Development	10.2
Physical Appearance		
Color	Colorless	Colorless
Texture		
	Solid (Melts at RT)	Solid (Melts at RT)
Solution Appearance		
Clarity	Clear	Clear
Color	Colorless	Colorless
	For Information Only	
Average Time to Dissolve	(Approx. 1 min)	1 min
Insolubles	None	Passes
FTIR	Conforms to Structure	Passes
Purity	Minimum 97.0%	99.40%
Water Content by Karl Fischer	For Information Only	<0.1%

Biological Testing:

Test concentration: 1.45 mg/L

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

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

Phyto Technology 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. Phyto Technology 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.

Date of Release: 1-March-2018

Recommended Shelf Life Date: March 2023

David S. Hart Technical Director



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

