CERTIFICATE OF ANALYSIS

Product Description	SPERMIDINE, FREE BASE N-(3-AMINOPROPYL)-1,4-BUTANEDIAMINE
Product Number	S837
Lot Number	15M0837014
Storage Temperature	2-6 ˚C
Molecular Weight	145.25
Formula	$C_7H_{19}N_3$
CAS Number	124-20-9

Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 1.45 mg/mL	Passes
pH	Under Development	11.5
Physical Appearance Color Texture	 Colorless Solid (Melts at RT)	 Colorless Solid (Melts at RT)
Solution Appearance Clarity Color	 Clear Colorless	 Clear Colorless
Average Time to Dissolve	For Information Only (Approx. 1 min)	1 min
Insolubles	None	Passes
FTIR	Conforms to Structure	Passes
Purity	Minimum 97.0%	99.5%
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 more plant tissue cultured lines with no morphological aberrations to plants.	Tobacco Callus	Passes
	Sugar Cane	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.**

Recommended Shelf Life Date: December 2020

Gary Seckinger, Ph.D.

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ISO 9001 REGISTERED FIRM

Created on 19 January 2016 JN