CERTIFICATE OF ANALYSIS

Product Description	CALCIUM PANTOTHENATE USP GRADE N-[(2R)-2,4-DIHYDROXY-3,3-DIMETHYL-1-OXOBUTYL]-β-ALANINE, CALCIUM SALT; D-PANTOTHENIC ACID, CALCIUM SALT; VITAMIN B_5, CALCIUM SALT
Product Number	C186
Lot Number	07C18603
Storage Temperature	2-6˚ C
Molecular Weight	476.54
Formula	$C_{18}H_{32}O_{10}N_2Ca$
CAS Number	137-08-6

Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 10 mg/mL	Passes
pH	Under Development	8.5
Physical Appearance Color* Texture	 PM-1 to PM-4 Fine to Crystalline Powder	 PM-4 White Fine Powder
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

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

Biological Testing:

Test Concentration: 10 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	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.

***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: July 2019

Gary Seckinger, Ph.D.

*Phyto*Technology 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

ISO 9001 REGISTERED FIRM

*Phyto*Technology Laboratories®
Dedicated to Growth

Created on 4 May 2007
Revised on 7 July 2016 JN