CERTIFICATE OF ANALYSIS

Product Description	L-CYSTINE
Product Number	C248
Lot Number	02F24803
Storage Temperature	Room Temperature
Molecular Weight	240.3
Formula	$C_6H_{12}N_2O_4S_2$
CAS Number	56-89-3

Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in 1N KOH @ 10 mg/mL	Passes
Physical Appearance Color* Texture	 RM-1 to RM-3 or RM-31 Fine to Coarse Powder	 RM-31 White Fine Powder
Solution Appearance Clarity Color	 Clear Colorless	 Clear Colorless
Average Time to Dissolve	Within 1 min	Passes
Insolubles	None	Passes
Purity	Minimum 99%	99%
FTIR	Conforms to Structure	Passes
Water Content	For Information Only	0.08%

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

Biological Testing:

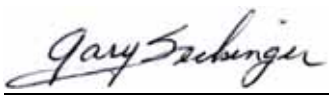
Test Concentration: 50 mg/L

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	Lily	Passes
	Echinacea	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: May 2018



Gary Seckinger, Ph.D.

P*hyto*Technology Laboratories®
Dedicated to Growth

***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

Created on 14 December 2005
Revised on 7 June 2013 DS