

# CERTIFICATE OF ANALYSIS

Product Description L-GLUTAMIC ACID  
(S)-2-AMINOPENTANEDIOIC ACID  
Product Number G399  
Lot Number AAR0399003  
Storage Temperature Room Temperature  
Molecular Weight 147.13  
Formula  $C_5H_9NO_4$   
CAS Number 56-86-0

## Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 10 mg/mL	Passes
pH	Under Development	3.0
Physical Appearance Color* Texture	PM-1 to PM-4 Crystalline Powder	PM-4 White Crystalline Powder
Solution Appearance Clarity Color	Clear Colorless	Clear Colorless
Average Time to Dissolve	Within 15 min	Passes
Insolubles	None	Passes
FTIR	Conforms to Structure	Passes
Purity	Minimum 98.0%	99.38%

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

## Biological Testing:

Test Concentration: 100 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
	Hosta	Passes

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

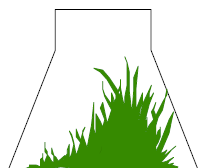
**PhytoTechnology Laboratories® provides the above information intended to be used only as a guide to the appropriate handling of this material by a properly trained person. PhytoTechnology Laboratories® shall not be held liable for any damage resulting from handling or from contact with the above product. 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.**

Date of Release: 1-August-2018

Recommended Shelf Life Date: August 2026



David S. Hart  
Technical Director



PhytoTechnology  
Laboratories®  
Dedicated to Growth

### **PhytoTechnology 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>

