

CERTIFICATE OF ANALYSIS

Product Description L-GLUTAMINE
(S)-2,5-DIAMINO-5-OXOPENTANOIC ACID
Product Number G229
Lot Number HKG0229026
Storage Temperature Room Temperature
Molecular Weight 146.14
Formula C₅H₁₀N₂O₃
CAS Number 56-85-9

Physiochemical Specifications:

| TEST | SPECIFICATION | RESULTS |
|--|---|-----------------------------|
| Solubility | Soluble in Water @ 10 mg/mL | Passes |
| pH | Under Development | 4.5 |
| Physical Appearance Color* Texture | PM-1 to PM-4 Fine to Coarse Powder, may form clumps | PM-1 White Coarse Powder |
| Solution Appearance Clarity Color | Clear Colorless | Clear Colorless |
| Insolubles | None to Few | Passes- Few |
| FTIR | Conforms to Structure | Passes |
| Purity | Minimum 98.5% | 99.70% |

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

Biological Testing:

Test Concentration: 100.0 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 | Parrot Feather | Passes |
| | Xanthi Tobacco Callus | Passes |

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

PhytoTech Labs Inc. provides the above information intended to be used only as a guide to the appropriate handling of this material by a properly trained person. PhytoTech Labs Inc. 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: 18-May-2026

Recommended Shelf-Life Date: May 2034

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