

# CERTIFICATE OF ANALYSIS

Product Description PUTRESCINE DIHYDROCHLORIDE  
1,4-BUTANEDIAMINE DIHYDROCHLORIDE  
Product Number P733  
Lot Number HHY0733009  
Storage Temperature Room Temperature  
Molecular Weight 161.1  
Formula  $C_4H_{12}N_2 \cdot 2HCl$   
CAS Number 333-93-7

## **Physiochemical Specifications:**

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 10 mg/mL	Passes
pH	Under Development	4.2
Physical Appearance Color* Texture	PM-1 to PM-4 Fine to Coarse Powder, may have some larger clumps	PM-1 White  Coarse Powder
Solution Appearance Clarity Color	Clear Colorless	Clear Colorless
Average Time to Dissolve	For Information Only (Approx. 5 min)	Passes
Insolubles	None	Passes- None
FTIR	Conforms to Structure	Passes
Purity	Minimum 98.0%	>99%

\* 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	Ajuga	Passes
	Begonia	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: 27 April 2021

Recommended Shelf Life Date: April 2029



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