

CERTIFICATE OF ANALYSIS

Product Description CHOLINE CHLORIDE
Product Number C232
Lot Number 13J0232004
Storage Temperature Room Temperature
Molecular Weight 139.63
Formula $C_5H_{14}ClNO$
CAS Number 67-48-1

Physiochemical Specifications:

TEST	SPECIFICATION	RESULTS
Solubility	Soluble in Water @ 1 mg/mL	Passes
pH	Under Development	6.3
Physical Appearance Color* Texture	RM-1 to RM-3, or RM-31 Crystalline Powder	RM-31 White Crystalline Powder
Solution Appearance Clarity Color	Clear Colorless	Clear Colorless
Average Time to Dissolve	Within 1 min	Passes
Insolubles	None	Passes
FTIR	Conforms to Structure	Passes
Purity	Minimum 98.0%	99.20%

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

Biological Testing:

Test Concentration: 0.5 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
	Achimenes	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, LLC 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.

Recommended Shelf Life Date: September 2021



Gary Seckinger, Ph.D.



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>



Created on 21 October 2013 DS