

CERTIFICATE OF ANALYSIS

Product Description MURASHIGE & SKOOG BASAL MEDIUM W/ VITAMINS
Product Number M519
Lot Number 15C0519119
Storage Temperature 2-6 °C

Physiochemical Specifications:

| TEST | SPECIFICATION | RESULTS |
|--------------------------------|---|--------------------|
| Solubility | Soluble in Water | Passes |
| pH (4.43 g/L) | 3.5 – 4.5 | 4.1 |
| Physical Appearance Color* | 2022-70 to 2026-70, PM-1 to PM-4, or PM-19 | PM-19 Off-White |
| Texture | Fine Powder | Fine Powder |
| Solution Appearance Clarity | Clear | Clear |
| Color | Colorless to Slight Yellow Tint | Slight Yellow Tint |
| Average Time to Dissolve | For Information Only (Approx. 3 min) | 5 min |
| Insolubles | None | Passes |
| Moisture | For Information Only | 1.61% |

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

Biological Testing:

| 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 | Cape Primrose | Passes |
| | Hosta | Passes |

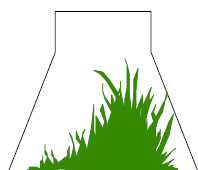
The material described in this certificate was manufactured in the United States of America and is synthetic. No animal- or plant-derived components were used in the manufacture of this product.

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Recommended Shelf Life Date: March 2018



Gary Seckinger, Ph.D.



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