



Product Information Sheet

M404 Murashige & Skoog (MS) Modified Basal Medium w/ Gamborg Vitamins

Properties

| | |
|---------------------------------|--|
| Form: | Powder |
| Appearance: | White to Yellow |
| Application: | Plant Tissue Culture |
| Solubility: | Water |
| Typical Working Concentration: | 4.44 g/L |
| Storage Temp: | 2-6°C |
| Storage Temp of Stock Solution: | Preparation of concentrated solutions is not recommended as insoluble precipitates may form. |
| Other Notes: | Contains the macro- and micronutrients as described by Murashige and Skoog (1962) and vitamins as described by Gamborg, et al. (1968). pH = 3.5 – 4.5 |

Formula (mg/L)

| | |
|--|-------|
| Ammonium Nitrate | 1650 |
| Boric Acid | 6.2 |
| Calcium Chloride, Anhydrous | 332.2 |
| Cobalt Chloride•6H ₂ O | 0.025 |
| Cupric Sulfate•5H ₂ O | 0.025 |
| Na ₂ EDTA•2H ₂ O | 37.26 |
| Ferrous Sulfate | 27.8 |
| Magnesium Sulfate, Anhydrous | 180.7 |
| Manganese Sulfate•H ₂ O | 16.9 |

| | |
|--|------|
| Molybdc Acid (Sodium Salt)•2H ₂ O | 0.25 |
| Potassium Iodide | 0.83 |
| Potassium Nitrate | 1900 |
| Potassium Phosphate Monobasic | 170 |
| Zinc Sulfate•7H ₂ O | 8.6 |
| myo-Inositol | 100 |
| Nicotinic Acid (Free Acid) | 1 |
| Pyridoxine•HCl | 1 |
| Thiamine•HCl | 10 |

Application Notes

Plant species: *Cannabis sativa* L (Feeney & Punja, 2003; Wang et al, 2009).
Tobacco (Murashige and Skoog, 1962)

References

- Feeney M & ZK Punja (2003) Tissue culture and Agrobacterium-mediated transformation of hemp (*Cannabis sativa* L.) *In Vitro Cell. Dev. Biol-Plant* 39, 578–585.
- Gamborg, OL, RA Miller and K Ojima. 1968. Nutrient requirements of suspension cultures of soybean root cells. *Exp. Cell Res.* 50: 151-158.
- Murashige, T and F Skoog. 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. *Physiol. Plant.* 15: 473-497.
- Wang R, L He, B Xia, JF Tong, N Li & F Peng (2009) A micropropagation system for cloning of hemp (*Cannabis sativa* L.) by shoot tip culture. *Pak. J. Bot.*, 41(2): 603-608.

PhytoTechnology Laboratories®

P.O. Box 12205; Shawnee Mission, KS 66282-2205

Phone: 1-888-749-8682 or 913-341-5343; Fax: 1-888-449-8682 or 913-341-5442

Web Site: www.phytotechlab.com

© 2014 PhytoTechnology Laboratories®