



## Product Information Sheet

### Y8935 Yeast Mannitol Agar (YMA)

Synonym: YMA; Yeast Extract Mannitol Agar ; YEMA; YEM Agar; YM Agar

#### Properties

Form: Powder  
Appearance: Cream to Tan  
Application: Microbiology, Phytopathology  
Solubility: Water  
Typical Working Concentration: 27.7 g/L  
Storage Temp: 2-6°C  
Other Notes: Suspend 27.7 grams in 1000 mL of distilled water. Sterilize by autoclaving, mix well before pouring. Medium will have white precipitate from calcium carbonate.  
Based on the formulation by Atlas (2004), modified to contain 1 g/L calcium carbonate as suggested by Pereira Duta et al., (2006).

#### Formula (mg/L)

Magnesium Sulfate, Anhydrous	98*
Mannitol	10,000
Potassium Phosphate, Dibasic	500
Agar	15,000

Sodium Chloride	100
Calcium Carbonate	1000
Yeast Extract	1000

\* Original formulation (Atlas, 2004) contains 200 mg/L  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ , we use  $\text{MgSO}_4$ , anhydrous at 98 mg/L for an equivalent molarity of  $\text{MgSO}_4$ . The anhydrous form of magnesium sulfate is used to reduce water content of the formulated powder medium.

#### Application Notes

Used for the cultivation, isolation and enumeration of *Rhizobium* spp. and other symbiotic nitrogen-fixing soil microorganisms.

Adjust to pH 6.8 +/- 0.2 @ 25°C

Yeast extract provides a source of amino acids and vitamin B complex. Mannitol is the carbohydrate source. Magnesium provides cations essential for growth. Sodium chloride provides osmotic balance in the medium while dipotassium phosphate maintains the ionic balance. Calcium carbonate is added at 1.0 g/L (Pereira Duta et al., 2006) as a buffer to prevent the acidification of the medium as well as provide essential cations for the growth of microbes; this may cause the medium to have a milky (opalescent) appearance.

#### References

- Atlas, R. M. (2004). Handbook of microbiological media (Vol. 1). CRC press.
- Pereira Duta, Flávia, Francisca Pessôa de França, and Léa Maria de Almeida Lopes (2006) Optimization of culture conditions for exopolysaccharides production in *Rhizobium* sp. using the response surface method. *Electronic Journal of Biotechnology* 9.4: 0-0.
- Subba Rao, NS (1977) Soil Microorganisms and Plant Growth, 142.