

## TM 2036 – CHLORELLA AGAR

### INTENDED USE

For the isolation and maintenance of *Chlorella* species.

### PRODUCT SUMMARY AND EXPLANATION

*Chlorella* is a genus of single-celled green algae, belonging to the phylum Chlorophyta. *Chlorella* contains the green photosynthetic pigments chlorophyll-a and chlorophyll b in its chloroplast. It depends on photosynthesis for growth and multiplies rapidly, requiring only carbon dioxide, water, sunlight, and a small amount of minerals. *Chlorella* has been researched as a potential source of food and energy, because its efficiency of photosynthesis can reach 8%, which is comparable with other highly efficient crops such as sugarcane. *Chlorella* media were originally formulated by Shrift and further modified for cultivation and maintenance of *Chlorella* species.

All algae utilize inorganic phosphates and sulphates. There is a fairly high requirement of molybdate as a trace metal in nitrogen fixation. Algae require calcium, magnesium, potassium and probably sodium. Most algae grow poorly on agar and it is best to let them become established in liquid culture before adapting them to the more rigorous conditions of an agar slant.

*Chlorella* being photosynthetic green algae, should be cultivated in the presence of light. Bright diffuse light; fluorescent light and sunlight are satisfactory sources of light for the growth of *Chlorella*. The inoculated tubes/flasks should be incubated in the presence of light at 25-27°C for a week to permit good growth and pigmentation. *Chlorella* cultures can be maintained at room temperature for 2-3 months without subculturing.

### COMPOSITION

Ingredients	Gms / Ltr
Copper sulphate	0.0000078
Sodium molybdate	0.00005
Zinc sulphate	0.00022
Boric acid	0.00028
Manganese sulphate	0.0014
Ferrous sulphate	0.0015
Potassium citrate	0.032
Potassium sulphate	0.217
Magnesium sulphate	2.400
Potassium dihydrogen phosphate	2.450
Potassium nitrate	2.500
Dextrose (Glucose)	10.000
Agar	17.000

### PRINCIPLE

The medium contains phosphates and sulphates which helps in growth of algae. The medium provides high requirement of molybdate as a trace metal in nitrogen fixation. For the growth of algae the medium provides calcium, magnesium, potassium and probably sodium.

### INSTRUCTION FOR USE



- Dissolve 34.6 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.

#### QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : White to cream homogeneous free flowing powder.  
**Appearance of prepared medium** : Amber coloured, clear to slightly opalescent gel forms in Petri plates.  
**pH (at 25°C)** : 4.5±0.2

#### INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Chlorella vulgaris</i>	9765	50-100	Good-luxuriant	>=50%	25-27°C	7 Days
<i>Euglena gracilis</i>	12716	50-100	Good-luxuriant	>=50%	25-27°C	7 Days

#### PACKAGING:

In pack size of 500 gm bottles.

#### STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

#### DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

#### REFERENCES

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
3. Norris J. R. & Ribbons D. W., (Ed.), 1963, Methods in Microbiology, Volume 3B, Academic press, London, pg. 269.
4. Shrift, 1954, Am. J. Botany, 41:223-230.
5. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.
6. Zelitch I., Photosynthesis, Photorespiration and Plant Productivity, Academic Press, 1971, p.275.



 GMP Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**  
**Revision: 08 Nov., 2019**