

## Tryptone Glucose Extract (TGE) Agar (NCM0158)

### Intended Use

Tryptone Glucose Extract (TGE) Agar is used for the cultivation and enumeration of microorganisms in dairy and bottled water products. Tryptone Glucose Extract (TGE) Agar is not intended for use in the diagnosis of disease or other conditions in humans.

### Description

In the 1930's, Bower and Hucker developed a medium for detecting bacteria in milk and other dairy products. Prickett used a glucose agar containing tryptone to study thermophilic bacteria in milk. This medium is known as Yeast Dextrose Agar. In 1948, the American Public Health Association (APHA) adopted Tryptone Glucose Extract Agar for use in testing milk and dairy products. Currently, APHA specifies Tryptone Glucose Extract Agar for the heterotrophic plate count procedure in testing bottled water. Tryptone Glucose Extract Agar is also known as Yeast Dextrose Agar.

### Formula / Liter

Beef Extract	3.0 g/L
Enzymatic Digest of Casein	5.0 g/L
Dextrose	1.0 g/L
Agar	15.0 g/L

Final pH: 7.0 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precaution

Refer to SDS

### Preparation

1. Suspend 24 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Cool to 45-50°C.

### Test Procedure

1. Follow the pour plate method as described in Standard Methods or by laboratory policy.
2. Incubate the inoculated medium in a humid atmosphere at 32 ± 1°C for 47 – 49 hours incubation for dairy samples or at 35 ± 0.5°C for at least 72 hours for water samples.

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free flowing, and light beige.

**Prepared Appearance:** Prepared medium is trace to slightly hazy, light beige to medium amber.

**Expected Cultural Response:** Cultural response on TGE Agar incubated aerobically at 32 ± 2°C and examined for growth after 47 – 49 hours.

# Technical Specification Sheet



Microorganism	Approx. Inoculum (CFU)	Recovery
<i>Bacillus subtilis</i> ATCC® 6633	10-100	>70%
<i>Escherichia coli</i> ATCC® 25922	10-100	>70%
<i>Staphylococcus aureus</i> ATCC® 25923	10-100	>70%
<i>Staphylococcus epidermidis</i> ATCC® 12228	10-100	>70%
<i>Streptococcus pneumoniae</i> ATCC® 6305	10-100	>70%
<i>Streptococcus pyogenes</i> ATCC® 19615	10-100	>70%

Test Sample	Expected Results
Unpasteurized (raw) milk	Excellent growth and recovery w/ a t-value <2.70

## **Results**

Count total colonies and record results.

## **Expiration**

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

## **Limitation of the Procedure**

Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.

## **Storage**

Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

## **References**

1. Bowers and Hucker. 1935. Tech. Bull. 228. NY State Agar. Exp. Sta.
2. Prickett. 1928. Tech. Bull. 147. NY State Agar. Exp. Sta.
3. American Public Health Association. 2004. Standard methods for the examination of dairy products, 17<sup>th</sup> ed. American Public Health Association, Washington, D.C.
4. Vanderzant, C., and D. F. Splittstoesser (eds.). Compendium of methods for the microbiological examination of foods, 4<sup>th</sup> ed. American Public Health Association, Washington, D.C.

