

PE-2 Broth (i23283)

To identify and grow mesophilic anaerobic spore-forming microorganisms in samples obtained from food processing facilities.

Industry: Food

Principles & Uses

PE-2 Broth is designed for the detection and cultivation of mesophilic anaerobic spore formers, particularly *Clostridium* spp., commonly found in specimens from food processing facilities. Recommended by APHA, this medium plays a crucial role in identifying these organisms. Peptone and yeast extract are key components, providing amino acids, proteins, and B-complex vitamins necessary for the growth of *Clostridium*. The pH indicator, bromocresol purple, aids in monitoring the medium's acidity.

Clostridia are known for their resilience, thriving in the absence of oxygen and resisting heat. The temperature range of their growth aligns with the conditions typical for storing canned and processed foods, making them significant contributors to the spoilage of low-acid foods in sealed containers.

PE-2 Broth, following the formulation by Folinazzo and Troy, creates an anaerobic environment using untreated Alaska seed peas. Culturing heated samples of sugar, dehydrated vegetables, and spices in this medium allows for the detection of mesophilic anaerobic spore formers. The incubation period of 72 hours to 7 days ensures the identification of even slowly germinating spores. This medium proves essential in maintaining food safety standards by identifying and studying these anaerobic organisms.

Composition (gr/L)

Peptic Digest of Animal Tissue 20 g, Yeast Extract 3 g, Bromocresol Purple 0.04 g,
Final pH at 25°C 6.8 ± 0.2

Preparation from dehydrated Powder

Suspend 23 g in 1 litre distilled water. Dispense 18 - 20 ml aliquots into 18x150mm screw capped test tubes. Add 8 - 10 untreated Alaska seed peas and let the tubes stand for 1 hour to effect hydration. Autoclave at 121°C for 15 minutes.

Quality Control

Dehydrated Appearance: Beige, free-flowing, homogeneous.

Prepared Appearance: Light purple, clear.

Reaction of 2.3% Solution at 25°C: pH 6.8 ± 0.2

Cultural Response

Cultural response was observed after 24 - 48 hours of incubation at 35 ± 2°C.

Organism (ATCC*)	Recovery
<i>Clostridium thermosaccharolyticum</i> (7956)	Good
<i>Clostridium sporogenes</i> (11437)	Good
<i>Clostridium botulinum</i> (25763)	Good

*ATCC is a registered trade mark of the American Type Culture Collection.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.