

# Pastone

(Pancreatic casein peptone for bacteriology)

356-4955

## DEFINITION

Pastone is a peptone of consistent quality and high nutrient value.

It is obtained by controlled pancreatic digestion of high-quality edible casein.

It is an excellent source of nitrogen for most culture media:

**Pastone** is a neutralized peptone, more degraded than Pastose. It contains a balanced blend of oligopeptides and free amino-acids. It is used for the preparation of culture media for fastidious bacteria in medical and nutritional bacteriology.

It is suitable for the preparation of media used in industry.

## PRESENTATION

### Pastone

500 g

code 356-4955

## AVERAGE PHYSICAL CHARACTERISTICS

Appearance	Creamy white powder
Density	0.4 to 0.6
Odor	Weak, non-putrid
Residual humidity	Under 6%

10% solution in distilled water before and after sterilization for 15 minutes at 121°C:

Total solubility

Clear

Pale yellow

Final pH (25°C) = 7.2 ± 0.5

## AVERAGE CHEMICAL CHARACTERISTICS

Sulfated ash	< 15 %
Total nitrogen (Kjeldahl), N	10 < N < 15 %
Aminated nitrogen (Sørensen), N'	3 < N' < 5 %
N'/N ratio	0.20 < N'/N < 0.50

Precipitation by:

Heat	None
Nitric acid	Slight
Acetic acid	Slight
Trichloacetic acid	Slight
Primary proteoses	Negative
Primary proteoses	Weakly positive
Secondary proteoses	Positive
Tryptophan	Positive
Nitrites	None
Phosphates:	P 1.5 < P < 5 %
Chlorides (in NaCl):	Cl 5 < Cl < 10 %
Iron:	< 100 p.p.m.
Copper:	< 30 p.p.m.

## AVERAGE AMINO-ACID CONTENT (in grams% of proteins)

Aspartic acid	4.5 ± 0.5
Threonine	4 ± 1
Serine	4 ± 0.5
Glutamic acid	17.5 ± 2.5
Proline	8 ± 3
Glycocol	1.75 ± 0.25
Alanine	2 ± 0.5
Cystine	1.2 ± 1
Valine	5 ± 1
Methionine	2 ± 0.5
Isoleucine	4 ± 1
Leucine	7.5 ± 1.5
Tyrosine	2.5 ± 1.5
Phenylalanine	2.5 ± 1.5
Lysine	5 ± 2
Histidine	6.5 ± 4
Arginine	4 ± 2
Tryptophan	1.5 ± 0.5

## BACTERIOLOGICAL CHARACTERISTICS

Each batch of Pastone is verified according to the standards of the US Pharmacopoeia (USP XXI) and to a strict protocol in our control laboratories.

## USP XXI Test

Fermentable sugars	None
Indole	None
Production of indole	Positive
Production of acetoine	Positive
Production of H <sub>2</sub> S	Positive

## Bacteriological monitoring

Pastone is also subjected to the following routine bacteriological controls:

- Enumeration of revitalized facultative aerobe and aero-anaerobe bacteria.
- Enumeration of mesophilic and thermophilic sulfite-reducing *Clostridium*.
- Enumeration of mesophilic and thermophilic *Bacillus* spores.
- Enumeration of yeasts and molds.
- Enumeration of faecal *streptococci*.
- Enumeration of coliform bacteria and detection of *E. coli*.
- Detection of pathogenic and toxinogenic bacteria (*staphylococci*, *Cl. perfringens*, *Salmonella*).
- Detection of thermotolerant bacteria after sterilization of a 10% solution in an autoclave for 15 minutes at 121°C.

## Nutrient value test

- a) Each batch of Pastone is first subjected to various culture tests recommended by the US Pharmacopeia (USP XXI):
- on nutrient agar, the following bacteria should develop well: *Escherichia coli*, *Enterobacter*, *Salmonella typhi*, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* and *aureus*, *Brucella abortus* (in atmosphere with 10% CO<sub>2</sub>)
  - on nutrient agar with the addition of 5% blood, the following bacteria should grow, presenting a characteristic appearance and hemolysis: *Pneumococci* *Streptococci* in Lancefield groups A and B.
  - on nutrient agar with cooked blood and in atmosphere with 10% CO<sub>2</sub>, gonococci and meningococci should develop satisfactorily.

b) Other liquid and solid culture media are reconstituted with Pastone as the only peptone, and compared with media containing reference peptones. These media are inoculated with very weak inoculums of strains freshly isolated in our various control laboratories, and recognised as being difficult culture. Use of the recording biophotometer makes it easy to obtain growth curves, useful for purposes of comparison.

Once the media have successfully passed the laboratory control tests, they are used for a certain time for comparison against a control medium

## STORAGE

- Dehydrated: +15°C - 25°C, in carefully-sealed bottles in a cool, dry place.
- Expiration date and batch number are shown on the package.

## UTILISATION

Pastone is usually used at the rate of **10-20 g per liter**, depending on the media.

It is readily soluble and remains perfectly clear in solution after 15 minutes sterilization in an autoclave at 121 °C.

It is not necessary to precipitate the alkalinoferrous phosphates

The pH of a 1% solution in distilled water is 7.2 ± 0.5; that of media prepared with Pastone is thus close to neutrality.

## QUALITY CONTROL OF MANUFACTURER

Every product manufactured and marketed by Bio-Rad is subject to a quality-assurance procedure at all stages, from the reception of raw materials to the marketing of the end-product.

Each batch of finished product undergoes quality control and is marketed only if it satisfies the acceptability criteria.

Documentation relative to the production and control of each batch is kept on file.

## PERFORMANCES / QUALITY CONTROL OF THE TEST

The growth performances of the media are verified with the following strains:

STRAINS	OD* at 480 nm after 24h culture at 37°C
<i>Staphylococcus aureus</i> ATCC 25923	Reasonable growth
<i>Staphylococcus aureus</i> ATCC 6538P	Reasonable growth
<i>Staphylococcus epidermidis</i> ATCC 12228	Reasonable growth
<i>Enterococcus faecalis</i> ATCC 19433	Reasonable growth
<i>Salmonella typhimurium</i> ATCC 14028	Reasonable growth
<i>Listeria monocytogenes</i>	Reasonable growth
<i>Escherichia coli</i> ATCC 25922	Reasonable growth

\*OD: optic density

## KEY WORDS

Pastone / Quality peptone / Source of nitrogen / Pancreatic casein digest / Medium.