

## Casein, Acid Hydrolysate (i23037)

Casein, Acid Hydrolysate is used in preparing microbiological culture media.

Industry: Ingredients for culture media / Fermentation

### Principles & Uses

Acid Hydrolysate of Casein -also known as Casein Hydrolysate (Acid), Casein Peptone, Acid Hydrolysate, or Casamino Acids- is produced through hydrochloric acid hydrolysis, then neutralized with sodium hydrate and purified to remove excess sodium chloride. This product is highly water-soluble and contains low vitamin levels with the absence of aromatic amino acids. This process thoroughly cleaves all peptide bonds, resulting in the complete breakdown of protein into amino acids. However, it also destroys certain amino acids, racemizes others, and completely eliminates vitamins. Acid Hydrolysate of Casein is particularly useful in culture media designed for investigating antibiotic resistance in microorganisms and for microbiological assays of tryptophan and vitamins.

Due to its vitamin-free nature, it's used for determining vitamin content via microbiological methods while maintaining good solubility and clarity upon dissolution. On the other hand, Casein hydrolysate is produced by digesting casein with hydrochloric acid, a process that retains some vitamins and growth-promoting substances. However, this method destroys tryptophan and leads to elevated inorganic salt levels due to acid neutralization. Casein hydrolysate is well-suited for large-scale cultivation of various bacteria and toxins, favoring high biomass yield, especially in industrial fermentations for specific yeasts and fastidious *bacilli*.

### Composition

Acid hydrolyzed casein

### Quality Control

Dehydrated Appearance: Off white to light yellow, homogenous, free flowing powder, having Characteristic odor but not putrescent.

Solubility: Freely soluble in distilled/purified water, insoluble in alcohol and ether.

Solution Appearance (1X): Yellow and clear.

Total aerobic microbial count (cfu/gm): By plate method when incubated at 30-35°C for not less than 3 days.

Bacterial Count: <= 2000 CFU/gram.

pH of 2% solution at 25 °C: 6.50- 8.0

### Test for pathogens

<i>E. coli</i>	Negative in 10 gr
<i>Salmonella spp.</i>	Negative in 10 gr
<i>Pseudomonas aeruginosa</i>	Negative in 10 gr
<i>Staphylococcus aureus</i>	Negative in 10 gr
<i>C. albicans</i>	Negative in 10 gr
<i>Clostridia</i>	Negative in 10 gr

### Cultural Response

Cultural response observed after an incubation at 35-37°C for 18-24 hours by preparing Tryptone Broth using Casein Peptone as an ingredient.

Organism (ATCC*)	Recovery
<i>Escherichia coli</i> (25922)	Good to excellent
<i>Bacillus subtilis</i> (6633)	Luxuriant
<i>Saccharomyces cerevisiae</i> (9080)	Luxuriant

### Storage

Keep the container at 15-30 °C.