# Nutrient Gelatin

**Used for tests of microorganisms which liquefy gelatin**

## Formula in grams per liter:

| | | | |
|---|---|---|---|
| Gelatin | 120,00 | Gelatin Peptone | 5,00 |
| Beef Extract | 3,00 | | |

*Final pH: 6,8 ± 0,2 at 25 °C*

## Preparation:

Suspend 128 grams of the medium in one liter of distilled water. Heat gently agitating frequently until completely dissolved. Sterilize at 121° C (15 lbs. sp.) for 15 minutes.

## Uses:

For the detection of proteolytic bacteria. Nutrient Gelatin was one of the first solidifying agents used in the beginning of bacteriology. It is used to investigate the presence of proteolytic microorganisms, especially in the bacteriological analysis of water. For the plate count of organisms in water, this medium is being replaced by solid media with agar.

Nutrient Gelatin was originally used in the standard method for water and wastewater as a direct plate count technique, replacing the dilution method. However, this method required incubation at approximately 20°C, not ideal for most organisms, and the medium is now principally used for the detection of proteolysis as evidenced by the liquefaction of gelatin.

The tubes are inoculated by stabbing with a needle (straight wire) and incubated at 20-23º C for up to 30 days. Refrigerate the test cultures together with an uninoculated Nutrient Gelatin control tube and read the reactions as soon as the control tube has hardened.

This is determined by inverting the tube. A strong positive remains liquid.

If plates of Nutrient Gelatin are utilized, they can be streaked or seeded with aliquots of the sample in a pourplate technique. Check for hydrolysis of gelatin on the streaked plate by adding a drop of saturated ammonium sulfate or 20% sulfasalicylic acid to an isolated colony. Look for a zone of clearing around the colony (Stone reaction) in 10 minutes. The Stone reaction is also used on Staphylococcus Medium Nº 110.

## Microbiological Tests:

| Microorganisms | Growth | Gelatinase |
|---|---|---|
| *Bacillus subtilis ATCC 6633* | Satisfactory | + |
| *Clostridium perfringens ATCC 12924* | Satisfactory | + |
| *Escherichia coli ATCC 25922* | Satisfactory | - |
| *Staphylococcus aureus ATCC 25923* | Satisfactory | + |