



# Product Specification

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## GRAM'S IODINE SOLUTION IODINE CONTENT 0.33%

**PRODUCT CODE** 840200

### Intended Use

Grams's Iodine is used as mordant in Gram's staining method.

### Principle And Interpretation

The Gram stain is a differential staining technique most widely applied in all microbiology disciplines laboratories. It is one of the most important criteria in any identification scheme for all types of bacterial isolates. Different mechanisms have been proposed to explain the gram reaction. There are many physiological differences between gram-positive and gram negative cell walls Ever since Christian Gram has discovered Gram staining, this process has been extensively investigated and redefined In practice, a thin smear of bacterial cells is stained with crystal violet, then treated with an iodine containing mordant to increase the binding of primary stain A decolourizing solution of alcohol or acetone is used to remove the crystal violet from cells which bind it weakly and then the counterstain (like safranin) is used to provide a colour contrast in those cells that are decolourized. Gram-positive bacteria have a thick mesh-like cell wall made of peptidoglycan (50–90% of cell envelope), and as a result are stained purple by crystal violet, whereas gram-negative bacteria have a thinner layer (10% of cell envelope), so do not retain the purple stain and are counter-stained pink by safranin. In a properly stained smear by gram staining procedure, the gram-positive bacteria appear blue to purple and gram negative cells appear pink to red.

PARAMETER	LIMIT
Description	Brownish orange coloured clear solution.
Solubility	Miscible with alcohol and water.
Wt. per ml at 20°C	About 1.015 g
Suitability for microscopy	To pass the test.

### Directions

1. Prepare a thin smear on clear, dry glass slide.
2. Allow it to air dry and fix by gentle heat.
3. Flood with Gram's Crystal Violet for 1 minute. (If over staining results in improper decolourization of known gram-negative organisms, use less crystal violet).
4. Wash with tap water.
5. Flood the smear with Gram's Iodine. Allow it to remain for 1 minute.
6. Decolourize with Gram's Decolourizer until the blue dye no longer flows from the smear. (Acetone may be used as a decolourizing agent with caution, since this solvent very rapidly decolourized the smear).
7. Wash with tap water.
8. Counter stain with 0.5% w/v Safranin for 20 seconds and rinses off with water.
9. Wash with tap water.
10. Allow the slide to air dry or blot dry between sheets of clean bibulous paper and examine under oil immersion objective.

### Results

Gram-positive microorganisms : violet

Gram-negative microorganisms : pinkish red

### Note(s) : Assay (if applicable) method mentioned.

#### WARNING

**Hazard statements:** May cause allergic skin reaction Toxic to aquatic life.

#### Precautionary statements

**Prevention:** Avoid breathing dust/fume/gas/m ist/vapours/spray. Contaminated clothing should not be allowed out of the workplace.

**Response:** If skin irritation or rash occurs, seek medical advice/attention. Wash contaminated clothing before reuse.

**Specific treatment:** refer to Label or MSDS. IF ON SKIN: Gently wash with plenty of soap and water.

IMDG Code :  
UN No. :  
IATA :



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**Disposal:** : - Dispose of contents and container in accordance with relevant legislation.

Hazard pictogram(s) :



GHS07

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