Product Specification

cdhfinechemical.com

# GRAM'S CRYSTAL VIOLET

| PRODUCT CODE | 840090 |
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## Intended Use

Gram's crystal violet is used as staining solution for Gram's staining and monochrome staining of microbes.

## 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 | Purple coloured solution. |
| 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.**

**DANGER :**

**Hazard statements**: May cause respiratory irritation. Maycause drowsiness and dizziness Flammable liquid and vapour. Causes skin irritation. May damage the unborn child. Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention**: Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well ventilated area. Wear protective gloves/clothing Keep away from heat/sparks/open flame - No smoking. Keep container tightly closed. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only non-sparking .Response: Wear eye/face protection. If skin irritation occurs, seek medical advice/attention. If exposed or concerned: Get medical attention advice. If skin irritation or rash occurs, seek medical advice/attention. If eye irritation persists, get medical Immediately/ advice.If skin irritation occurs, seek medical advice/attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/ physician. advice/ attention.If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.

IMDG Code :3.3/III
UN No. :1993
IATA :3

Dispose of contents and container in accordance with relevant legislation.

**Hazard Pictogram(s) :**

GHS02 GHS07 GHS08

Replace date 16-Dec-2023