R.B.C. Diluting Fluid (Grower's)

**Intended Use**
R.B.C. Diluting Fluid (Grower's) is used as diluting fluid for blood specimen to count the red blood cells under high powder by hemocytometry.

**Composition**

**Ingredients**
- Sodium sulphate: 12.50 gm
- Glacial acetic acid: 33.30 gm
- Distilled water: 100.0 ml

**Formula adjusted, standardized to suit performance parameters**

**Directions**
1) Prepare a 1:200 dilution of blood, using a RBC pipette.
2) Draw well-mixed blood to the 0.5 mark.
3) Wipe the outside of the pipette, clean with a piece of dry gauge without touching the opening of the capillary and immerse in the freshly filtered diluting fluid.
4) Immediately draw diluting fluid to the 101 mark past the bulb.
5) Rotate the pipette for 3 minutes immediately before filling the haemocytometer.
6) Expel, first 4 - 6 drops from the pipette and fill one side of counting chamber.
7) Allow the cells to settle for a few minutes.

**Principle And Interpretation**
RBC diluting fluid is isotonic with blood, hence hemolysis does not take place. Normal Saline also can be used. But it causes slight creation of red blood cells and allows rouleaux formation. The blood specimen is diluted 1:200 with the RBC diluting fluid and cells are counted under high power (40 x objective) by using a counting chamber. The number of cells in undiluted blood are calculated and reported as the number of Red cells per cu mm (MI) of whole blood.

**Warning and Precautions**
In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

**Performance and Evaluation**
Performace of the product is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

**Quality Control**

**Appearance**
Colourless solution.

**Clarity**
Clear with no insoluble particles.

**Results**
Under high power magnification, count the cells in the centre and in the four corner squares of the central ruled area

**Calculation**

Red blood cells/mm$^3$ in the original blood = Cell counted X dilution factor/Volume counted in mm$^3$

= Cell counted X 200 /0.02mm$^3$
= Cell counted X $10^4$
Storage and Shelf Life
Store between 10-30°C in tightly closed container and away from bright light. Use before expiry date on label. On opening, product should be properly stored in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

Disposal
User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference
1. Text book of Medical Laboratory Technology; Praful B.Godkar