SALT REFRACTOMETER

300006

INSTRUCTION MANUAL

SPER
SCIENTIFIC

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INTRODUCTION

Your portable refractometer is a precision, optical instrument which is designed to measure the concentration of salt in aqueous solutions. It utilizes a salinity scale which is accurate and easy to read. Its lightweight and ergonomic design make it convenient for both field and laboratory applications. It is excellent for quality assurance, process control, and scientific research.

The refractometer operates on the principle that, as the concentration or density of a solution increases, its refractive index changes proportionately. The refractive angle measured by your refractometer registers on the scale. The larger the concentration of salt in solution the higher the reading on the scale.

PANEL DESCRIPTION

1. Prism
2. Cover plate
3. Calibration screw
4. Barrel with textured grip
5. Eyepiece with ribbed focus ring

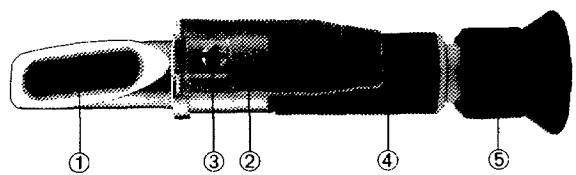

Fig. 1

OPERATING PROCEDURES

1. With cover plate open, carefully clean the prism (1) with soft cotton cloth. Avoid scratching the surfaces.

2. Aim the front end of the refractometer toward a light source and rotate the eyepiece (5) to obtain clearest focus.

3. Adjustment of the null (reference point).
   A - Open the cover plate (2).
   B - Apply a few drops of pure distilled water on to prism platform (1).
   C - Close cover plate (2).
   D - Rotate calibration screw (3) so that the dark and light boundary line coincides exactly with the 0% line on the scale.

4. Carefully dry the prism platform and cover.

5. Place a few drops of the solution on the prism and close the cover plate so solution spreads evenly on the prism.

6. Aim the front end of the refractometer toward the light source and adjust the eyepiece for clearest focus of the boundary line between the light and dark hemispheres.

7. The boundary line of light and dark will indicate the percent salt of test sample as per fig. 2 and 3 below which read 13% and 25% respectively.

8. After use clean prisms with a cloth and remove any surface residue.

9. At 20°C the saturation point of salt is indicated by a line near the top of the scale.

10. The temperature of the null reference liquid should be at the same temperature as the sample solution. For variations in temperature the null point should be adjusted once every 30 minutes.

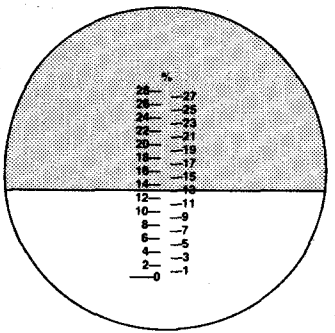

Fig. 2

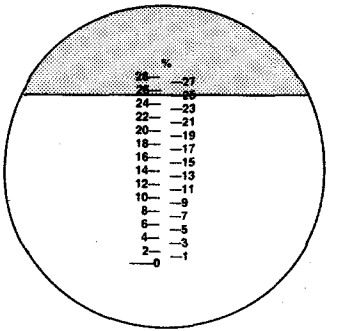

Fig. 3

PRECAUTIONS

1. After use do not dip or run unit under water. Avoid letting water seep into internal section of refractometer.
2. Clean the refractometer carefully after each use with a soft cloth. Do not scratch prism surfaces.
3. Store the unit in a dry, clean and non-corrosive environment.
4. Avoid strong shocks.
5. If reasonable care is applied to your refractometer the reliability, precision and optical performance will not change.

SPECIFICATIONS

MEASURING RANGE (% Salt)	0 - 28%
RESOLUTION	0.2%
ACCURACY	±0.2%
SIZE	6¾ x 1½ inches
WEIGHT	6.5 oz.

STANDARD ACCESSORIES

Carrying case, Transfer pipette, Distilled water, Instruction manual, Registration card

WARRANTY

Sper Scientific warrants this product against defects in materials or workmanship for a period of **five (5) years** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover damage resulting from accident, misuse, or abuse of the product or batteries. In order to obtain warranty service, simply ship the unit postage prepaid to: Sper Scientific, Ltd., 7720 E. Redfield, Suite 7, Scottsdale, Arizona 85260.

Please note: The defective unit must be accompanied by a description of the problem and your return address.

Please be sure to return your warranty registration card within ten (10) days of purchase.