

# RHS-10 Refractometer Datasheet



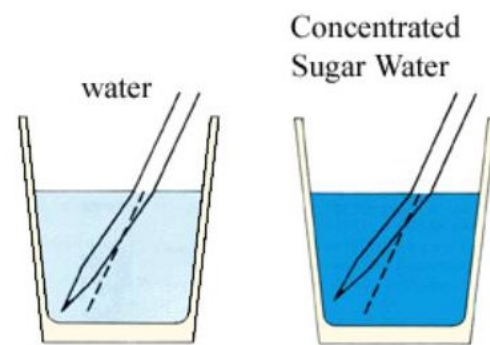
YHEQUIPMENT CO., LIMITED

## Refractometer

Refractometers are precision optical instruments designed to measure the concentration or mixture ratio of water soluble. Easy to use, just place a few drops of juice on the prism glass and hold up to the light. And ATC refractometers automatically compensate temperature changes so the user can just drop a few drops of a juice and read. The Hand Held Refractometers provide with a direct reading of the Scales, and have been professionally designed for testing of concentration of many kinds of solution listed as following: Juices, Beverages, Honey, Salt water, Brine, Cleaning fluid, battery fluid, Antifreeze and Industrial fluids etc.

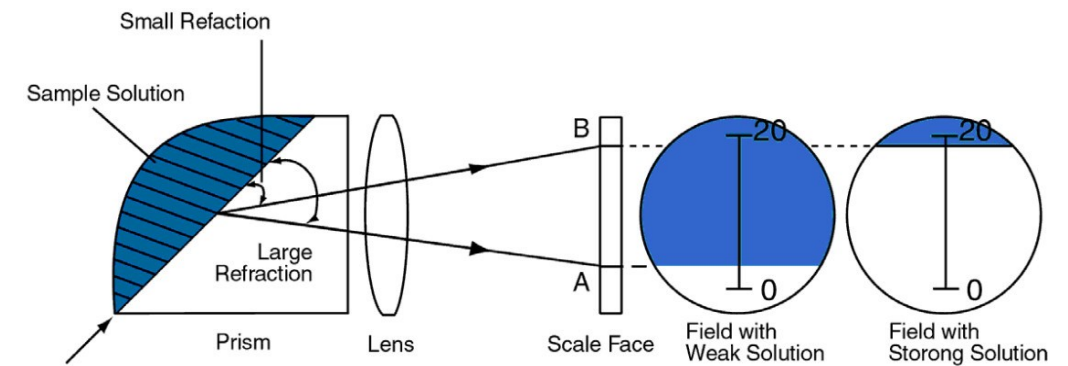
## The Theory Of Refraction

If you place a pencil in a cup of water, the tip will appear bent. If you then put concentrated sugar water in a cup and try the same experiment, the tip of the pencil should appear even more bent. This is an example of the phenomenon of light refraction. Refractometers are measuring instruments in which this phenomenon of light refraction is put to a practical use. Refractometers are based on the principle that as the density of a substance increases (e.g. when sugar is dissolved in water), its refractive index rises proportionately.

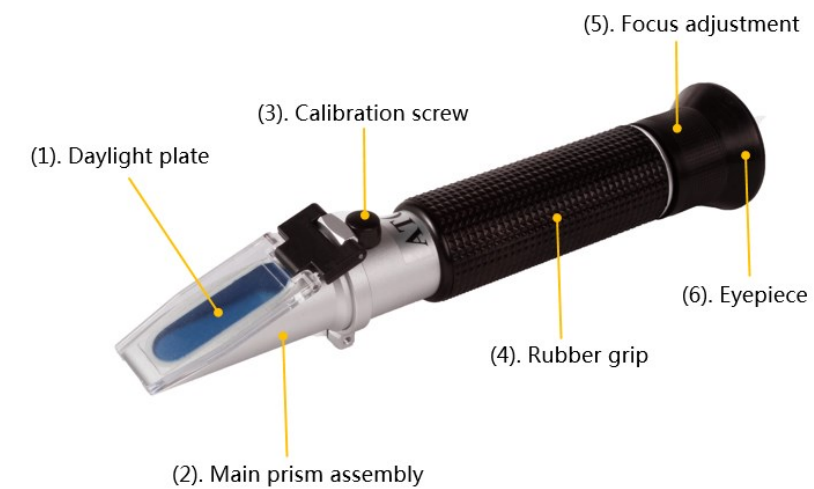


## Principles Of Refractometer

1. Refractometers utilise a prism which possesses a much a greater refractive index than the sample solution to be measured. Measurements are made possible using the refractive phenomena which arise at the interface of the prism and the sample solution.
2. In the case of a weak sample solution, the difference between the refractive index of the solution and that of the prism is great, therefore the angle of refraction is large (see A on the diagram below).
3. In the case of a strong sample solution, the difference between the refractive index of the prism is smaller and therefore the angle of refraction is smaller (see B on the diagram below).



## Refractometer Parts Diagram



## RHS-10 Abstract

RHS-10 ATC salinity refractometer is designed for testing the concentration of salt water and brine and used for quality control in research and clinical laboratories and marine industry. Its scale provides a direct reading of the specific gravity and concentration (part per thousand) of salt in water. One scale checks the NaCl levels with the range of 0-100 ppt (with 1 ppt scale divisions) and the other scale gauges Specific Gravity with a range of 1.000 to 1.070 ( $\pm 0.001$  accuracy). Both enables the direct determination of salinity in water that contains dissolved salt and little or no other dissolved solids. It is suitable for a marine saltwater tank.

## RHS-10 Feature

1. High quality pure aluminum body construction
2. Uses ambient light only which means battery or power source is not required



YHEQUIPMENT CO., LIMITED  
Website: [www.yhequipment.com](http://www.yhequipment.com)  
Address: NO.180 Banxuegang big road, Longgang Area, Shenzhen City, China

Tel: +86-18520813958  
E-mail: [sales@yhequipment.com](mailto:sales@yhequipment.com)




YHEQUIPMENT CO., LIMITED  
Website: [www.yhequipment.com](http://www.yhequipment.com)  
Address: NO.180 Banxuegang big road, Longgang Area, Shenzhen City, China

Tel: +86-18520813958  
E-mail: [sales@yhequipment.com](mailto:sales@yhequipment.com)

3. Easy to focus and calibrate
4. Cushioned with soft & comfortable non-slip rubber
5. With ATC function (ATC Compensation)
6. Durable and built to last long

## RHS-10 Specification

<b>Model</b>	<b>RHS-10 ATC Refractometer</b>
<b>Measurement ranges</b>	Salinity: 0-10% (0-100ppt) Specific Gravity: 1.000-1.070sg
<b>Accuracy</b>	Salinity: 0.1%(1ppt) Specific Gravity: 0.001sg
<b>Resolution</b>	Salinity: ±0.1%(1ppt) Specific Gravity: ±0.001sg
<b>Scale view</b>	
<b>ATC</b>	Yes
<b>ATC temp.</b>	0-30°C
<b>Material</b>	Pure aluminum
<b>Refractometer dimensions</b>	195x32x32mm/7.7x1.3x1.3in
<b>Refractometer net weight</b>	148g/5.2oz
<b>Package size</b>	205x8x5.5cm / 8 * 3.5 * 2.3in
<b>Package weight</b>	303g/10.7oz

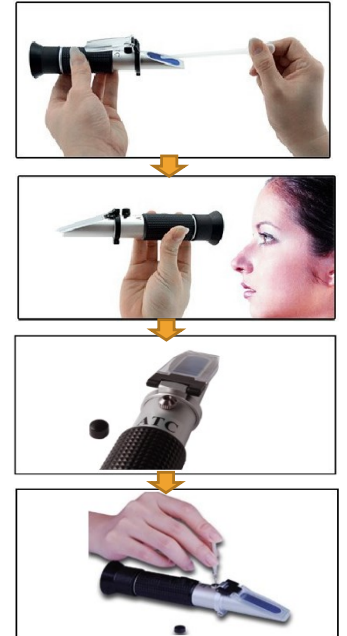
## Refractometer Package List

- 1x ATC refractometer
- 1x pipettes
- 1x a Mini-screw driver
- 1x protective carrying case
- 1x manual
- 1x clean cloth



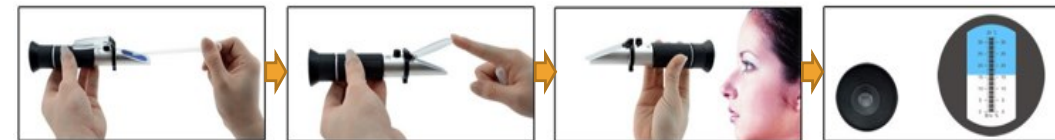
## Calbration Procedure

1. Begin the calibration of your refractometer by lifting up the daylight plate and placing 2-3 drops of distilled water on top of the prism assembly. Close the daylight plate so the water spreads across the entire surface of the prism without any air bubbles or dry spots.
2. Hold the refractometer in the direction of a natural light source and look into the eyepiece. You will see a circular field with graduations down the center. You may have to focus the eyepiece to clearly see the graduations.
3. Remove cap from adjustment screw, adjust the line between blue(top) and white(bottom) until the dividing line is even with the zero line at the bottom of the scale.
4. Replace protective cap on adjustment screw.



## Usage Instructions

1. Open daylight plate, clean the instrument using a soft, damp cloth.
2. Place 2-3 drops of sample water on the main prism.
3. Hold daylight plate in the direction of a light source.
4. Turn the focus adjustment.
5. Take the reading where the boundary line of blue and white cross the graduated scale.



## Warning&Maintenance

1. Accurate measurement depends on careful calibration. The prism and sample must be at the same temperature for accurate results.
2. Do not expose the instrument to damp working conditions, and do not immerse the instrument in water. If the instrument becomes foggy, water has entered the body. Call a qualified service technician or contact your dealer.
3. Do not measure abrasive or corrosive chemicals with this instrument.
4. Clean the instrument between each measurement using a soft, damp cloth. Failure to clean the prism on a regular basis will lead to inaccurate results and damage to the prism's coating.
5. This is an optical instrument. It requires careful handling and storage. Failure to do so can result in damage to the optical components and its basic structure. With care, this instrument will provide years of reliable service.