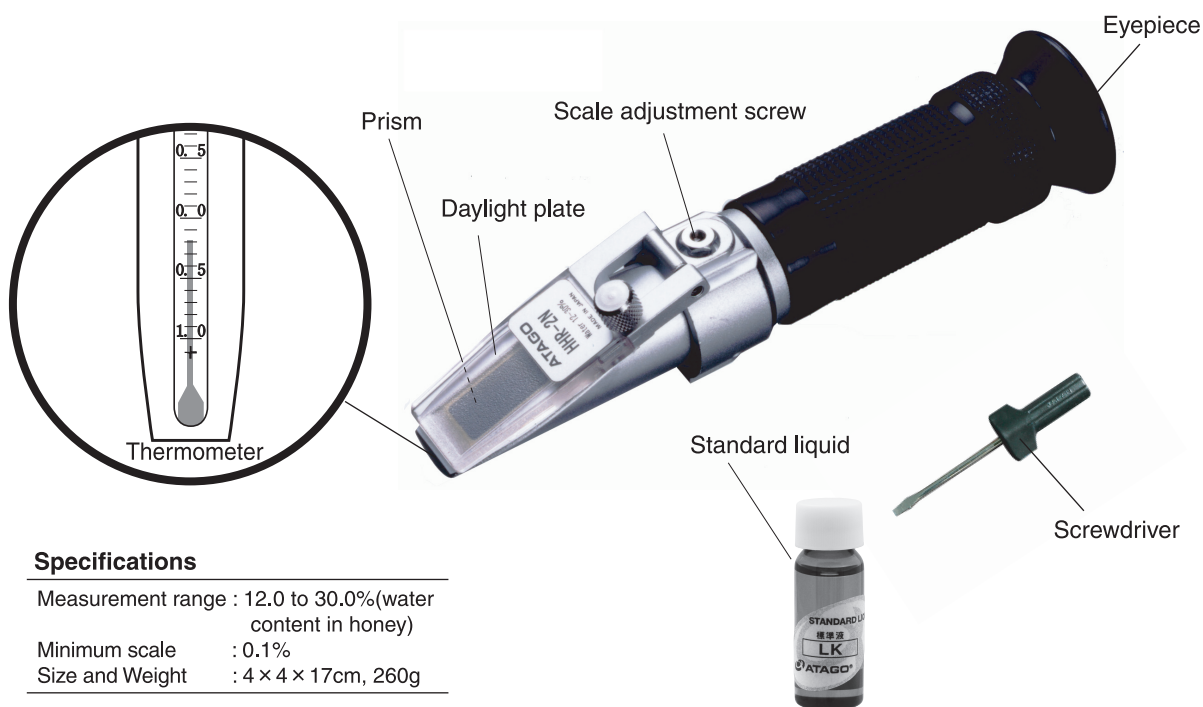


INSTRUCTION MANUAL

HONEY REFRACTOMETER HHR-2N



Specifications

Measurement range	: 12.0 to 30.0%(water content in honey)
Minimum scale	: 0.1%
Size and Weight	: 4 × 4 × 17cm, 260g

ATAGO instruments are rigorously inspected to ensure each unit meets the highest standards of quality assurance.

PRECAUTIONS

(Be sure to read the following before use.)

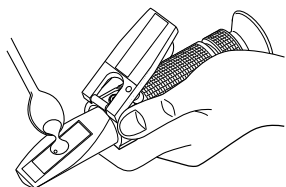
⚠ Caution

- Carefully read the instruction manual of this instrument to ensure proper use and operating methods.
- When handling and carrying this instrument, avoid dropping or subjecting to any strong shock or excessive force.
- If this instrument is used for any application other than its intended purpose, ATAGO will not be held liable for any damage caused by the use of or the measurement(s) obtained by the operator.
- ATAGO is not liable for any loss and damage caused by the measurement and use of this instrument.
- The prism is considered a consumable item and a charge will be incurred for the replacement of this part.

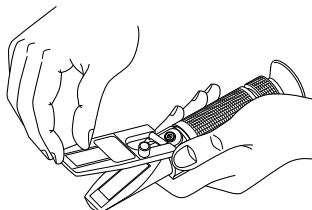
— When the scale cannot be read clearly!? —

If the view of the scale area cannot be read clearly due to dirt, carefully wipe the lens clean with a dry tissue. If moisture has collected inside on the scale area, keep the refractometer in a dry, warm place to dry out the instrument.

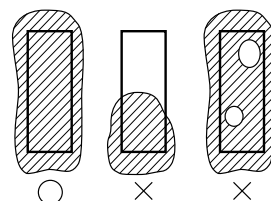
MEASURING METHOD



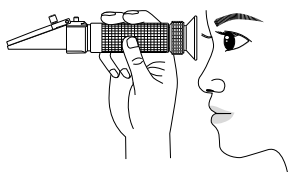
1 Put one or two drops of sample on the prism.



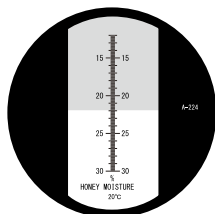
2 Close the daylight plate gently.



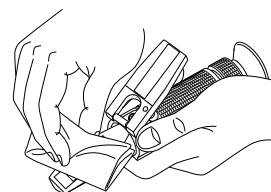
3 Confirm that the sample has spread over the entire prism surface.



4 Turn to the bright direction, and look at the scale through the eyepiece. (To adjust the focus, turn the eyepiece.)



5 Read the position on the scale at which the blue boundary line intercepts.

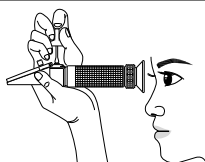


6 Wipe clean the sample from the prism with a tissue paper and water.

CALIBRATION

A Standard Liquid LK is used. Adjustment of the boundary line to the Honey Moisture at the room temperature by rotating the scale adjusting screw with the screw driver.

Don't turn the scale adjustment screw unreasonably. If it is excessively turned, it may cause breakdown of the refractometer.



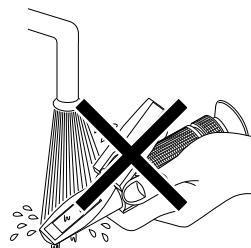
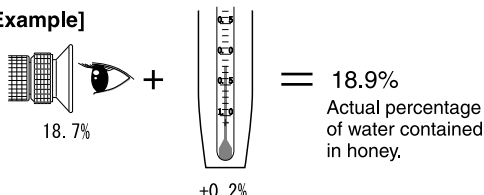
PRECAUTIONS

1. Hold the refractometer between the thumb and four fingers of the left hand and use the right hand for adjusting the eyepiece and manipulating the sample. Do not hold the refractometer by enveloping the entire tube with the palm of the left hand.
2. When the sample is severely turbid or colored, the field of vision darkens and the boundary line may become unclear or completely disappear. In such case, it would be effective to use direct sunlight or bright light from the lighting equipment for a microscope.
3. Since the refractometer is an optical instrument, do not drop it or give a strong shock to it.
4. Since the prism has a relatively soft surface, be careful not to scratch it.
5. After use, clean the prism surface and daylight plate with a soft cloth soaked in water and wipe off the moisture with a dry cloth.
6. If the prism surface is smeared with oil or similar liquids it will repel the sample and obstruct the measurement. Wipe off the oil smear or contaminant with warm water.

TEMPERATURE CORRECTION

Change in temperature will result in different measured values. The scale of this refractometer has been set to indicate a correct value when the refractometer is used at 20°C. Accordingly, when the sample is other than 20°C, the read value should be temperature compensated. As the thermometer attached to the refractometer is provided with a temperature correction scale of plus/minus %, readings can be corrected easily by adding (or subtracting) the indicated correction value on the thermometer.

[Example]



Never splash water on the unit.

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