Glycol Refractometer

WSS Part Number: 555814

Model Number: Glycol Refractometer RHA 218 ATC

The Glycol Refractometer offers a convenient, fast and accurate way to measure the engine coolant **antifreeze concentration** of **Monoethylene Glycol (MEG**) or propylene glycol (PG).

This easy-to-use optical instrument provides a no-mess, instant result that is impossible to achieve using traditional hydrometer-based methods. Automatic temperature compensation provides immediate, accurate and direct readings without the need to measure temperature or apply a correction factor.

The refractometer scale provides direct readings of freeze points and concentration of **Monoethylene Glycol (MEG)** and propylene glycol (PG)

The case contains a Glycol Refractometer, sampling pipette and instructions.

Feature & Benefits

1. Convenient, fast and accurate measurement
2. Instant results
3. Automatic temperature compensation
   - No need to measure temperature
   - No need for temperature compensation
4. Direct readings of freeze points and concentration (Ethylene Glycol and Propylene Glycol)

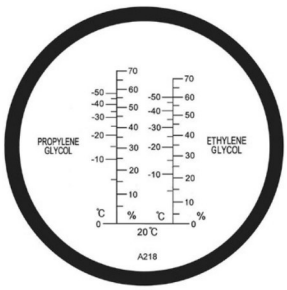

Fig 1 – Monoethylene Glycol and Freeze Point Measurement **Fig 2 – Glycol Refractometer RHA 218 ATC**

Note: Refer to Freeze point protection Table 1 below targeted freeze point protection with Cooltreat ELC

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Glycol Refractometer

Note

Power Requirements: 3 “AAA” Button Cell (1.5V*3) Battery
Life: More than 100 Hours
Light Source: White LED

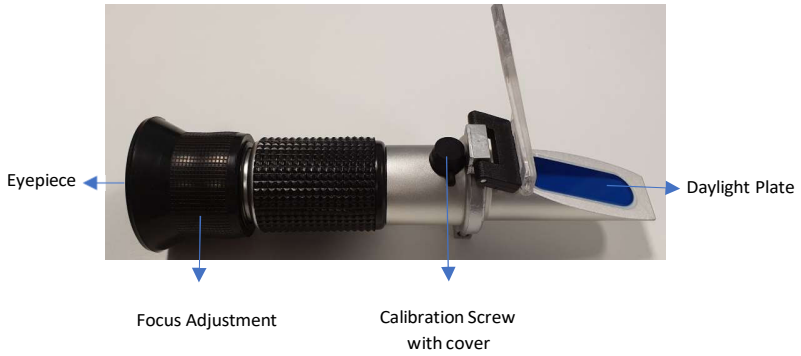

Fig 3 – Glycol Refractometer key components

Calibration and Measurement:

1. Aim the front end of the refractometer in the direction of bright light and adjust the eyepiece until the reticle can be seen clearly.
2. Adjustment of Null/Calibration
   Open the daylight plate and place 2-3 drops of distilled water on the main prism. Close the daylight plate and press it lightly so the water spreads across the entire surface of the prism without air bubbles or dry spots. Allow the sample to remain on the prism for approximately 30 seconds. Then adjust the calibration screw until the light/dark boundary coincides with the null line. Adjustment of refractometer with temperature compensation function should be made under the condition of 20 ^{o}C (68 ^{o}F) environmental temperature. When the working temperature of the room or environment (not the sample) changes, recalibration is recommended to maintain accuracy.
3. The operation procedure is done after calibration, and it is done in essentially the same manner as calibration. Open the daylight plate. Clean the surface of the prism with soft cotton cloth. Drop 2-4 drops of solution to be measured on the main prism. Close the daylight plate and press it lightly, then read the ***ETHYLENE GLYCOL (Monoethylene Glycol, MEG) scale*** **(%)** corresponding scale of **light/dark boundary.** The reading is the value of measured solution for ***ETHYLENE GLYCOL (Monoethylene Glycol, MEG*****).**
4. **Based on the measured *ETHYLENE GLYCOL (Monoethylene Glycol, MEG*) concentration, the freeze point protection can be estimated.**

5. **Reading measurement:**
    - ***Step 1:*** *Refer to ETHYLENE GLYCOL (Monoethylene Glycol, MEG) scale for the measured ETHYLENE GLYCOL (Monoethylene Glycol, MEG) based on the light/dark boundary.*
    - ***Step 2:*** *Read the % Ethylene Glycol (Monoethylene Glycol, MEG) on the scale.*
    - ***Step 3:*** *Based on the % Ethylene Glycol (Monoethylene Glycol, MEG), estimate from table 1 the corresponding freeze point protection estimation.*
    - ***Step 4 (If needed):*** *If any subsequent Cooltreat ELC is dosed into the system, repeat step 1 to step 3 to meet the desired freeze point protection.*
6. After measurement, clean away the solution on the surface of prism and cover plate by moist cotton cloth. After drying, it should be shored perfectly.

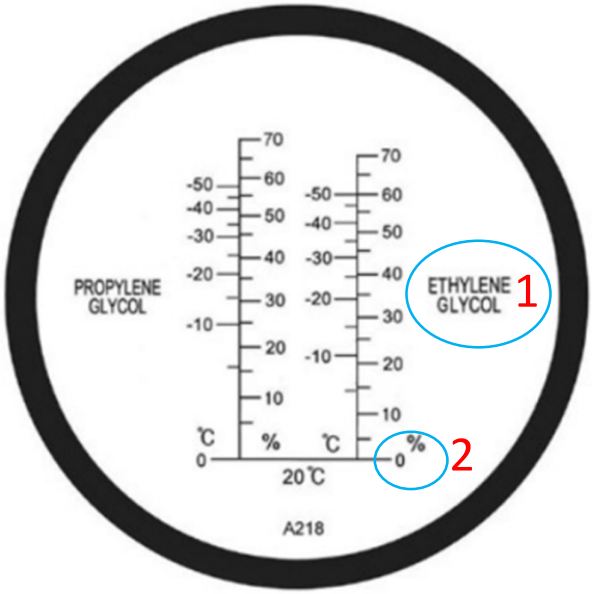

Fig 4 – Refer to Scale 1 Monoethylene Glycol (MEG), Read 2: For % MEG concentration

Table 1: Monoethylene Glycol (MEG) concentration and estimated freeze point protection

Parameter	***UoM***	***Freeze Point Protection Range***				
Monoethylene Glycol (MEG)	*%V*	*33*	*40*	*50*	*60*	68
Water	*%V*	*67*	*60*	*50*	*40*	32
Freeze Point Protection	*Deg C*	*-20*	*-27*	*-40*	*-55*	-69