

Evaluation method of air temperature for 100% free cooling for not standard working condition (SBSF series)

Method to evaluate air temperature for 100% free cooling in case of:

- different Leaving Water Temperature;
- different design Ambient Air Temperature;
- different refrigerated fluid (Ethylene Glycol or Propylene Glycol);
- pay attention: always $\Delta T = EWT - LWT = 5^{\circ}\text{C}$.

Free Cooling Capacity = Nominal Cooling Capacity x CD

$$T_{100\%FC} = LWT - [CD \times CG \times (7 - T_{100\%FC,ref})]$$

Where:

- LWT, is the leaving water temperature in [$^{\circ}\text{C}$];
- CD, is the Corrective Factor for Duty (from '*Corrective Factors for Duty – SBS/SBSF*');
- CG, is the Corrective Factor for Glycol (Tables 1 and 2). CG = 1 for water without glycol;
- $T_{100\%FC,ref}$, is the Air Temperature for 100% free cooling with 100% water 12/7, (from Hitema datasheets).

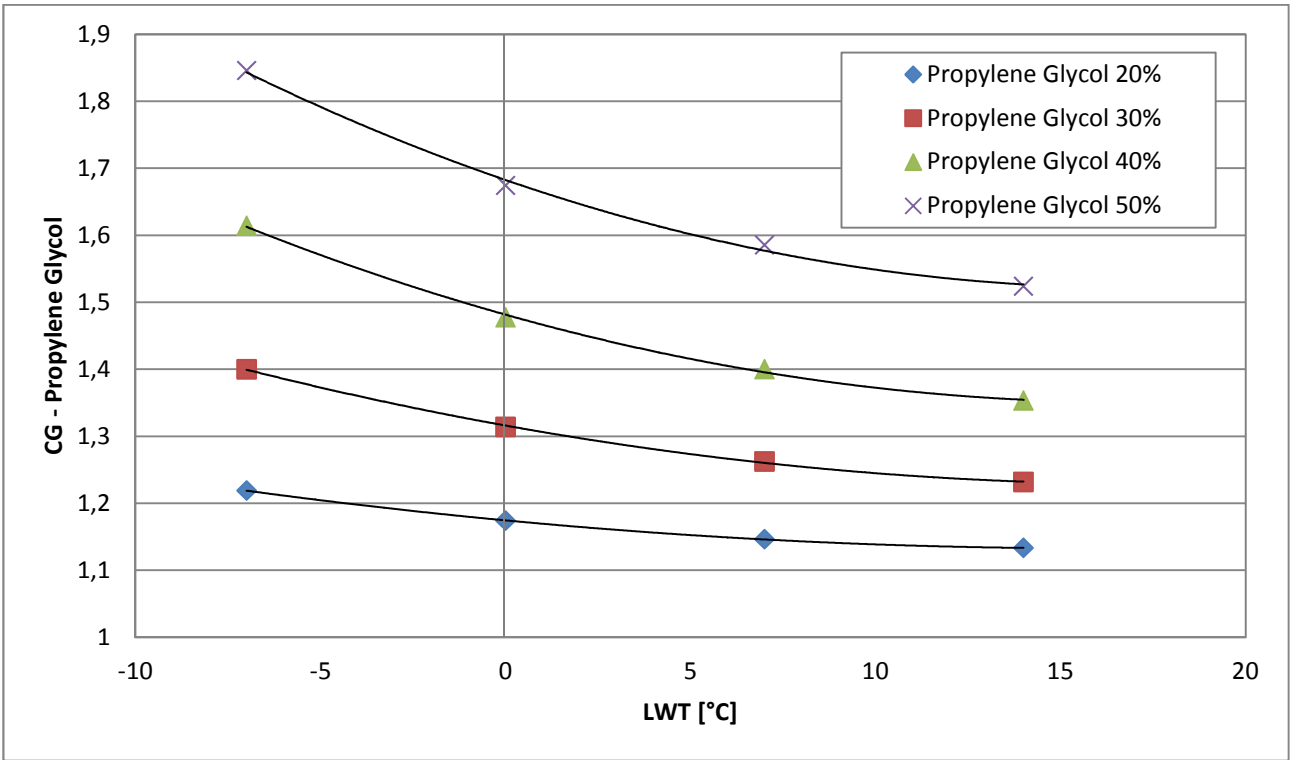


Table 1 – Corrective factor CG for Propylene glycol

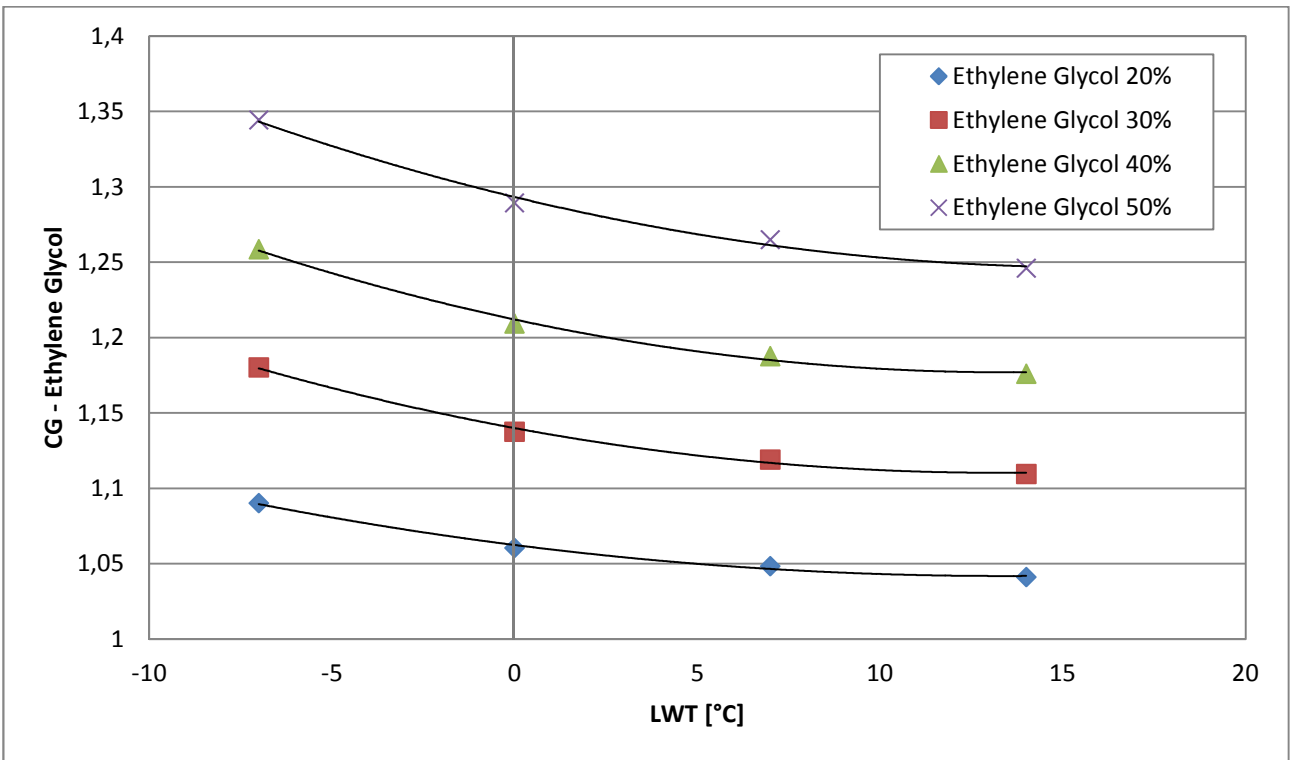


Table 2 – Corrective factor CG for Ethylene glycol