

From OSHA 1910.1001 appendix B

Sampling Pump Flow Rate Corrections

This correction is used if a difference greater than 5% in ambient temperature and/or pressure is noted between calibration and sampling sites and the pump does not compensate for the differences.

$$Q_{\text{act}} = Q_{\text{cal}} \times \sqrt{\left(\frac{P_{\text{cal}}}{P_{\text{act}}}\right) \times \left(\frac{T_{\text{act}}}{T_{\text{cal}}}\right)}$$

Where:

Q(act) = actual flow rate

Q(cal) = calibrated flow rate (if a rotameter was used, the rotameter value)

P(cal) = uncorrected air pressure at calibration

P(act) = uncorrected air pressure at sampling site

T(act) = temperature at sampling site (K)

T(cal) = temperature at calibration (K)