• Cálculo da densidade

$$\bar{\rho} = \frac{4\bar{m}}{\pi \bar{D}^2 \bar{H}} = \frac{4 \cdot 11,85}{\pi \cdot 13,96^2 \cdot 15,45} = \frac{47,4}{17448,37644} = 2,716585131 \cdot 10^{-3} \ g/mm^3$$

• cálculo da incerteza da densidade

$$\sigma_\rho = \bar{\rho} \sqrt{\left(\frac{\sigma_m}{\bar{m}}\right)^2 + \left(\frac{\sigma_D}{\bar{D}}\right)^2 + \left(\frac{\sigma_H}{\bar{H}}\right)^2}$$

$$\sigma_\rho = 2,716585131 \cdot 10^{-3} \sqrt{\left(\frac{0,01}{11,85}\right)^2 + \left(\frac{0,032158383}{13,96}\right)^2 + \left(\frac{0,006237243}{15,45}\right)^2}$$

$$\sigma_\rho = 2,716585131 \cdot 10^{-3} \sqrt{7,121365878 \cdot 10^{-7} + 1,877703865 \cdot 10^{-5} + 1,570993153 \cdot 10^{-5}}$$

$$\sigma_\rho = 2,716585131 \cdot 10^{-3} \cdot 5,932883512 \cdot 10^{-3}$$

$$\sigma_\rho = 1,611718313 \cdot 10^{-5}$$

• Erro relativo

$$E\% = \frac{|x_m - x_v|}{x_v} \cdot 100 = \frac{|2,716585131 \cdot 10^{-3} - 2,7 \cdot 10^{-3}|}{2,7 \cdot 10^{-3}} \cdot 100$$

$$E\% = 0,614264111$$

• Incerteza experimental relativa

$$\sigma\% = \frac{\sigma_\rho}{\bar{\rho}} \cdot 100 = \frac{1,611718313 \cdot 10^{-5}}{2,7 \cdot 10^{-3}} \cdot 100$$

$$\sigma\% = 0,596932708$$

0,596