Question #79770, Chemistry / General Chemistry |

What is the mass of H2SO4 in an 89.5 cm3 sample of concentrated sulfuric acid that has a density of 1.84 g/cm3 and consists of 98.3% H2SO4?

Answer:

V=89.5 cm^3

ρ=1,84 g/cm^3

Formula 1: ρ=m/V, therefore m=ρ x V

Formula 2:

$$Mass\ Percent = \frac{grams\ of\ solute}{grams\ of\ solution} \times 100$$ therefore

grams of solute =(Mass Percent x grams of solution) / 100

m=1,84 g/cm^3 x 89.5 cm^3 =164,68 g.

grams of solution = (98.3% x 164.68 g) / 100 = 161,88044 g (H_2SO_4)

Answer: 161,88044 g (H_2SO_4).