Answer on Question #61206-Physics-Mechanics | Relativity

4. You make the following measurements of an object: 42 kg and 22 m3. What would the object's density be? Show your work for credit and include final units.

Solution

The density of object is

$$\rho = \frac{m}{V} = \frac{42\ \text{kg}}{22\ \text{m}^3} = 1.9 \frac{\text{kg}}{\text{m}^3}.$$

5. Explain why a chlorinated swimming pool water would be a homogenous mixture?

Answer

A chlorinated swimming pool would be a homogenous mixture because chlorine and water diffuse through each other and cannot be separated out as distinct materials. They homogenously mix and appear as one and cannot be divided into their pure forms.

6. Both slicing a tomato and a chemical change such as burning toast cannot be reversed. However, why is slicing a tomato still considered only a physical change?

Answer

A tomato doesn't change chemically. It's still exactly the same molecules.

Burning toast oxidizes the molecules and changes them.