19. How much of a 20% w/v solution would be required to produce 250 ml of a 0.5% w/v solution?

a. 2.5 ml
b. 6.25 ml
c. 25 ml
d. 62.5 ml
e. 125 ml

20. How much of a 4% w/v solution would be required to prepare 150 ml of a 1% w/v solution?

a. 2.6 ml
b. 3.75 ml
c. 26 ml
d. 37 ml
e. 37.5 ml

21. How much of a 25% w/v solution would be required to prepare 250 ml of a 0.5% w/v solution?

a. 0.5 ml
b. 1 ml
c. 2.5 ml
d. 5 ml
e. 10 ml

22. Calculate the amount of stock solution that would be required to make the following solutions.

a. Half a litre of a 1% v/v solution using a 15% v/v solution
b. 250 ml of a 1% v/v solution using a 40% v/v solution
c. 500 ml of a 1% v/v solution using a 10% solution
d. 1 litre of a 0.5% v/v solution using a 15% solution
e. 1 litre of a 0.05% solution using a 4% solution

Parts calculations

The concentration of solutions may also be expressed in terms of 'parts'. By this we mean 'parts' of solute in 'parts' of product. This is interpreted as parts by weight (grams) of a solid in parts by volume (millilitres) of the final solution or in parts by volume (millilitres) of a liquid in parts by volume (millilitres) of the final solution. Solubility of ingredients is often expressed in this way.

Example 2.8

Sodium Bicarbonate BP is soluble in 11 parts of water. This means that 1 g of Sodium Bicarbonate BP will dissolve in 11 ml of water. Therefore if you had a formula that required 4 g of Sodium Bicarbonate BP you would need a minimum of 4 × 11 = 44 ml of water in which to dissolve the 4 g of Sodium Bicarbonate BP.