

Year 12 Chemistry

Analytical Techniques

Assignment 1

NAME _____

- Calculate the concentration of 1.15 g of ethanol (C_2H_5OH) in 100 mL
 - in $g L^{-1}$ /1
 - in $mol L^{-1}$ /1
 - in % w/v /1
 - in ppm /1
- A one-litre sample of wine was found to contain 5×10^{-5} moles of sulfur dioxide. Calculate the concentration in ppm in the sample of wine. /2
- 31.0 g of oxalic acid ($H_2C_2O_4 \cdot 2H_2O$) is dissolved in 100 mL of water.
 - Calculate the molar concentration of the solution. /2
 - Calculate the volume of water that needs to be added to the solution to dilute it to a concentration of $0.5 mol L^{-1}$. /2
- Complete the table below:

Species	$mol L^{-1}$	$g L^{-1}$	% w/v	$mg L^{-1}$	ppm	ppb
Na^+	7.0×10^{-3}					
NO_3^-		50.0				
CN^-				7.0×10^{-5}		
Hg^{2+}					2×10^{-3}	

- The National Health and Medical and Medical Research Council of Australia has set the following concentration values as being maximum acceptable levels for drinking water.
 Fluoride ions 1.5 ppm
 Arsenic 7 ppb

 Convert these values to $g L^{-1}$. /2
- Calculate the mass of sodium chloride necessary to make up 500 mL of a 5% w/v solution. /2

TOTAL /14