

Name Selected Answers Period A11

College Prep Chemistry of the Earth

Assignment 6E – Double Molar Conversions with Molar Volume

20 Points

For the following chemical reactions, complete the chart and perform the following conversions

Chemical Equation	$2V_2O_3 + 3Cl_2 \rightarrow 2VCl_3 + 3O_2$						
Molar Ratio	mol V_2O_3	=	mol Cl_2	=	mol VCl_3	=	mol O_2

Convert <u>52.84L Cl_2</u> to <u>mol Cl_2</u>		Convert <u>mol Cl_2</u> to <u>mol VCl_3</u>	
52.84L Cl_2	1 mol Cl_2	mol Cl_2	mol VCl_3
	22.4L Cl_2		mol Cl_2
mol Cl_2	mol Cl_2	mol VCl_3	mol VCl_3

Convert 4.28mol V_2O_3 to mol Cl_2		Convert <u>mol Cl_2</u> to volume Cl_2	
mol Cl_2		volume Cl_2	

Chemical Equation	$3H_2SO_4 + 2Cu(OH)_3 \rightarrow Cu_2(SO_4)_3 + 6HOH$ 22.4L = 1mol		
Molar Ratio	3 mol H_2SO_4	=	2 mol $Cu(OH)_3$ = 1 mol $Cu_2(SO_4)_3$ = 6 mol HOH
Molar Mass	Molar Mass H_2SO_4 = 98.09g/mol	Molar Mass $Cu_2(SO_4)_3$ = 415.31g/mol	

Convert <u>5.28mol H_2SO_4</u> to <u>mol HOH</u>		Convert <u>mol HOH</u> to <u>volume HOH</u>	
5.28 mol H_2SO_4	6 mol HOH*	10.56 mol HOH	22.4 L HOH*
	3 mol H_2SO_4 *		1 mol HOH *
mol HOH	10.56 mol HOH	volume HOH	236.54 L HOH

mol to mol = Molar Ratio*

22.4L = 1mol*