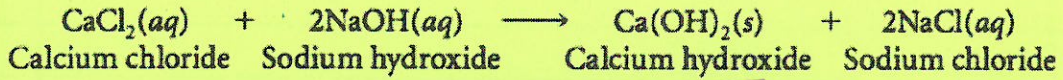


L92 - Mole Tunnel - ACTIVITY

Part 1: Root Canal

Calcium hydroxide is sometimes used in dentistry to temporarily fill the space left by a root canal. The equation for the formation of calcium hydroxide is this:



Calculate the molar mass of each substance and use it to calculate the mass of each substance.

Please complete all parts

☺

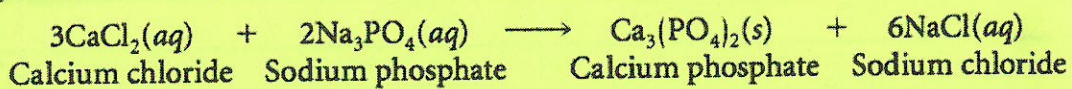
Molar mass	Product	
	$\text{Ca}(\text{OH})_2$	$\text{NaCl}$

Imagine that a dentist uses different amounts of the reactants. Figure out the products.

Reaction	Quantity	$\text{CaCl}_2(aq)$	$\text{NaOH}(aq)$	$\text{Ca}(\text{OH})_2(s)$	$\text{NaCl}(aq)$
1	moles				2.00 mol
	grams				117.0 g
2	moles			0.500 mol	
	grams	55.5 g		37.0 g	58.5 g
3	moles		0.200 mol	0.100 mol	
	grams				
4	moles				
	grams			10.0 g	

Part 2: Human Bones

The chemical equation for the reaction that forms calcium phosphate, the main ingredient in bones, is this:



Calculate the molar mass of each substance and fill in the table.

	Reactant		Product	
	$\text{CaCl}_2$	$\text{Na}_3\text{PO}_4$	$\text{Ca}_3(\text{PO}_4)_2$	$\text{NaCl}$
Molar mass				

Imagine that this reaction is repeated three times in the laboratory using different amounts of reactants. Complete the table.

Reaction	Quantity	$\text{CaCl}_2(aq)$	$\text{Na}_3\text{PO}_4(aq)$	$\text{Ca}_3(\text{PO}_4)_2(s)$	$\text{NaCl}(aq)$
1	moles	3.00 mol	2.00 mol	1.00 mol	6.00 mol
	grams	333 g	328 g	310 g	351 g
2	moles			2.00 mol	
	grams	666 g		620 g	702 g
3	moles				
	grams			9.92 g	