CHART - 3 Rebi	sion (Equations - chapter 6 - water
REACTIONS OF WATER -	in lies the	Solubility (may a been here and a solute in a
WITH METALS	and the second second	The second second and the second s
1. Potassium	2K	+ $2H_2O \rightarrow 2KOH + H_2$ [g]
2. Sodium	2Na	+ $2H_2O \rightarrow 2NaOH + H_2$ [g]
3. Calcium	Ca	+ $2H_2O \rightarrow Ca(OH)_2 + H_2$ [g]
4. Magnesium	Mg	+ $H_2O \rightarrow MgO + H_2$ [g]
5. Aluminium	2A1	+ $3H_2O \rightarrow Al_2O_3 + 3H_2$ [g]
6. Zinc	Zn	+ $H_2O \rightarrow ZnO$ + H_2 [g]
7. Iron	3Fe	+ $4H_2O \rightleftharpoons Fe_3O_4 + 4H_2$ [g]
WITH NON-METALS	leg naméo	Oil Spill
8. Coke	С	$+ H_2O \rightarrow CO + H_2$
e or a new importance in the coderstanding		[steam] [water gas]
9. Chlorine	Cl ₂	+ $H_2O \rightarrow HCl + HClO$
NON-METALLIC OXIDES	ni is the -	Atomic numbers (21 2 H August Dup ber of an size on
10. Sulphur dioxide	SO ₂	+ $H_2O \rightarrow H_2SO_3$
11. Sulphur trioxide	SO3	+ $H_2O \rightarrow H_2SO_4$
12. Carbon dioxide	CO ₂	+ $H_2O \rightarrow H_2CO_3$
13. Nitrogen dioxide	2NO ₂	+ $H_2O \rightarrow HNO_2 + HNO_3$
METALLIC OXIDES		of Triads
14. Potassium oxide	K ₂ O	+ $H_2O \rightarrow 2KOH$
15. Calcium oxide	CaO	+ $H_2O \rightarrow Ca(OH)_2$
TESTS - FOR WATER		A lended of the set of
16. Anhydrous copper sulphate	CuSO ₄	+ $5H_2O \rightarrow CuSO_4.5H_2O$
	[white]	[blue]
17. Cobalt chloride	[blue]	+ $6H_2O \rightarrow CoCl_2.6H_2O$ [pink]
BIOLOGICAL IMPORTANCE	vanic com	Hydrogenation Addition of hydrogen to or
- of dissolved gases in water	e of colda	eg hydrogenation of alls curi
18. Dissolved oxygen - respiration	C _c H ₁₂ O	$_{6} + 6O_{2} \rightarrow 6CO_{2} + 6H_{2}O + energy$
19. Dissolved CO ₂ - photosynthesis		+ $12H_2O \rightarrow C_6H_{12}O_6 + 6H_2O' + 6O_2$
	and the second	+ H_2O + CO_2 \rightarrow $Ca(HCO_3)_2$
WATER AS A - CATALYST	Iverastica	A searce a bodies b f. aire insatmodpheric touiper
21. Synthesis of hydrogen chloride	H ₂	+ $Cl_2 \rightarrow 2HCl$
22. Combustion of phosphorus	4P	+ $5O_2 \rightarrow 2P_2O_5$

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Practise Equations - CHAPTER 6 - WATER [Contd.]								
REACTIONS OF WATER -	LATIONS OF HYDROGEN - CEREDAL ME	PREPAI						
WITH METALS	ONS OF METALS -	REACE						
1. Potassium	$K + H_2O \rightarrow \underline{\qquad} + \underline{\qquad}$	[g]						
2. Sodium	Na + $H_2O \rightarrow ___$ + $____$	[g]						
3. Calcium	$Ca + H_2O \rightarrow \underline{\qquad} + \underline{\qquad}$	[g]						
4. Magnesium	Mg + $H_2O \rightarrow ___+___$	[g]						
5. Aluminium	A1 + $H_2O \rightarrow _$ +	[g]						
6. Zinc	$Zn + H_2O \rightarrow ___ + ___$	[g]						
7. Iron	$Fe + H_2O \rightleftharpoons +$	[g]						
WITH NON-METALS	UTE ACIDS	WITH DB						
8. Coke	C + $H_2O \rightarrow - + +$	8. Magnu						
AnglaOdis + 3H2 (glanning a	[steam] [water gas]	10.Zinc						
9. Chlorine	$Cl_2 + H_2O \rightarrow ___ + ___$	11.Iron						
NON-METALLIC OXIDES	KALL [conc. sobs.]							
10.Sulphur dioxide	$SO_2 + H_2O \rightarrow $							
11. Sulphur trioxide	$SO_3 + H_2O \rightarrow $							
12. Carbon dioxide	$CO_2 + H_2O \rightarrow ___$							
13. Nitrogen dioxide	$NO_2 + H_2O \rightarrow __+ __$							
METALLIC OXIDES	Domisiv vi							
14. Potassium oxide	$K_2O + H_2O \rightarrow $							
15. Calcium oxide	$CaO + H_2O \rightarrow $	Industria Transfer						
TESTS - FOR WATER	The second se							
16. Anhydrous copper sulphate	$CuSO_4 + 5H_2O \rightarrow $							
18. Remain Contenantori X L	[white] [blue]							
17. Cobalt chloride	$\begin{array}{c c} CoCl_2 + 6H_2O \rightarrow \underline{\qquad} \\ \hline \\ $							

TESTS AND USES	
BIOLOGICAL IMPORTANCE	CONVERSION OF IN DROGEN TO
- of dissolved gases in water	19.Water / 211, Vater C.
18. Dissolved oxygen - respiration	$C_6H_{12}O_6 + O_2 \rightarrow \underline{\qquad} + \underline{\qquad} + energy$
19. Dissolved CO ₂ - photosynthesis	$CO_2 + H_2O \rightarrow \underline{\qquad} + \underline{\qquad} + \underline{\qquad}$
20. Dissolved CO ₂ - formation of shells	$CaCO_3 + H_2O + CO_2 \rightarrow $
WATER AS A - CATALYST	23.Zinc oxide
21. Synthesis of hydrogen chloride	$H_2 + Cl_2 \rightarrow \underline{\qquad}$
22. Combustion of phosphorus	$P + O_2 \rightarrow \underline{\qquad}$

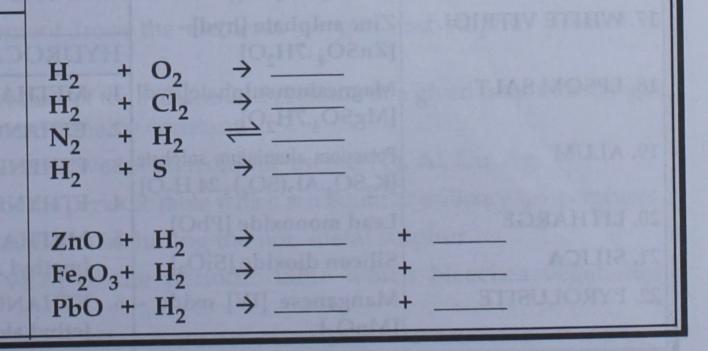
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Revision Equations - CHAPTER 9 - Study of First Element - HYDROGEN								
PREPARATIONS OF HYDROGEN – General Methods								
REACTIONS OF METALS -							TALS	IN HITWI
WITH COLD WATER	7.71							I. Poinse
1. Potassium	2K	+ 2H ₂ O	\rightarrow	2KOH	+	H ₂	[g]	aibo2 C
2. Sodium	2Na	the second s		2NaOH		H ₂	[g]	
3. Calcium	Ca	+ 2H ₂ O	\rightarrow	Ca(OH) ₂	+	H ₂	[g]	o. carcu
WITH BOILING WATER OR STEAM	Parts .							4. Magne
4. Magnesium	Mg	+ H ₂ O				and the second second	[g]	5. Alumi
5. Aluminium	2A1	the second se		Al ₂ O ₃		3H ₂		6. Zinc
6. Zinc	Zn	$+ H_2O$	and the second			H ₂		7. Iron
7. Iron	3Fe	+ 4H ₂ O	-	re ₃ O ₄	T	4H ₂	[g]	NA INTERAL
WITH DILUTE ACIDS	Ma	+ 21101	~	MaCl	+	ч	[a]	an marke
8. Magnesium 9. Aluminium	Mg 2Al			$MgCl_2$ $Al_2(SO_4)_3$		And in the local data and the second second		8. Coice
10.Zinc	00,000 1	the second s	-	ZnCl ₂		and the second		
11.Iron	and the second se	· · · · · · · · · · · · · · · · · · ·		FeCl ₂		and the second se		9. Chlor
WITH ALKALI [conc. soln.]				4.		2001	.01	W.WOW
12.Zinc	Zn	+ 2NaOH	[→	Na ₂ ZnO ₂	+	H ₂	[g]	dalus or
10 Sulphur dioxide	Zn			K ₂ ZnO ₂		and the second second		ndme or t
13. Lead	Pb	+ 2NaOH	[→	Na ₂ PbO ₂	+	H ₂	[g]	ngine'ii
14. Aluminium	and the second			2H ₂ O			the second s	the second se
13 Manager diverse +	2A1	+ 2KOH	+	2H ₂ O	\rightarrow	2KA	10 ₂	+ 3H ₂ [g]
Laboratory Method					-	IDES	C OX	METALL
15. Zinc – With dil. HCl	Zn	+ 2HCl	\rightarrow	ZnCl ₂	+	H ₂	[g]	14. Potass
Industrial Method - Bosch process	2.H.	+ 042		100000				15. Calcie
16. Production of water gas – [CO + H ₂]	C	+ H ₂ O		$\stackrel{1000^{\circ}\text{C}}{\longrightarrow} [\text{CC}]$)	+ H	H ₂] -	Δ
17. Reduction of steam to H ₂ by CO	and the second sec	+ H ₂ + H ₂ er gas]	0	$\xrightarrow{450^{\circ}\text{C}}_{\text{Fe}_2\text{O}_3} \text{CO}_2$	12.13	+ 2	H ₂ +	Δ
18. Removal of unreacted	the second s			$\rightarrow K_2C$	~ ~		and the second s	177 Colol
$CO_2 \& CO$ from the above mixture	CuC	1 + CO + 2	2H ₂	$0 \rightarrow CuC$		CO·2H	2 ⁰	LEUD-LL
TESTS AND USES			•					
CONVERSION OF HYDROGEN TO								SCALORA
19.Water	2H ₂	+ O ₂		2H ₂ O				- 01 0195
20. Hydrogen chloride	and the second se			2HCl				18,01890
21. Ammonia		+ 3H ₂		2NH ₃			lved.	19. Disso
22. Hydrogen sulphide	H ₂	+ S	>	H ₂ S				20. Dissoi
HYDROGEN IN METALLURGY	7.0			7-110				
23. Zinc oxide	A CONTRACTOR OF STREET, STREET	and the second		$Zn + H_2O$ 2Fe + 3H ₂ O				MAL BYAL
24. Iron [III] oxide 25. Lead oxide	and the second second	$H_3 + 3H_2 + H_2$		$Pb + H_2O$				21.Synth
25. Leau Oxide	100	2		10.120		04.30	molecu	1.22 Campb

Practise Equations - CHAPTER 9 - Study of First Element - HYDROGEN										
PREPARATIONS OF HYDROGEN - General Methods										
REACTIONS OF METALS -	120100		Terration i s	1.2.	100					
WITH COLD WATER										
1. Potassium	K	+	H ₂ O	>	10105	+	_	[g	<u></u> g]	
2. Sodium	Na	+	H ₂ O	\rightarrow	inute 30	+	-	[8		
3. Calcium	Ca	+	H ₂ O	>	Scary dr	+	_	[8	<u>g]</u>	
WITH BOILING WATER OR STEAM								R	ADRIA	5. V
4. Magnesium	Mg		4	\rightarrow		. +	-	-	g]	
5. Aluminium	Al		H ₂ O				· _		g]	1/1/
6. Zinc	Zn	+	H ₂ O	>	31 8311		977	and the stand will be	gl	A.E.
7. Iron	Fe	+	H ₂ O ₹	211	alt [Na	+ Acid	ATE	[8	g]	te s
WITH DILUTE ACIDS			NO ON PS			Maying		WOT D.	EACH	13. 81
8. Magnesium	-		HC1			- +	-	Converse and	g]	
9. Aluminium	Al		H ₂ SO ₄		MO) al		_		g] al	
10.Zinc	Zn		HCl		- Celleria	and a	_		g] al	
11.Iron	Fe	+	HCl	7				L	g]	
WITH ALKALI [conc. soln.]			NOIL					ſ	al	
12.Zinc	Zn		NaOH				+ _	-	g] g]	
18. A Bound White Millie preserve	Zn		KOH						g] g]	
13. Lead	Pb		NaOH NaOH						.61 +	_ [g]
14. Aluminium	Al Al		KOH		and the second se				ASHIN	= [g]
21. An amphymeticanide other that	AI	т	KOII	-	1120	Deck				101
Laboratory Method	the pe		inter site	100				SOBAL		
15. Zinc – With dil. HCl	Zn	+	HCl	+	-	-	+ _	T SOLE D	lgj	
Industrial Method - Bosch process	72 day		-[m (n)	SI S	1000%	Sound				
16. Production of water gas	C		+ H ₂ O		1000°C →	[]		+	_] -	Δ
a second brack the second brack		-		0	450°C			+	+	۸
17. Reduction of steam to H ₂ by CO	a loss that a second second		$H_2 + H$ gas]	20	$\xrightarrow{450^{\circ}\text{C}}_{\text{Fe}_2\text{O}_3}$					IN TH
I I I I I I I I I I I I I I I I I I I			L'and l'and		<i>→</i>			+	1111	
18. Removal of unreacted CO ₂ & CO from the above mixture			+ CO ₂ + CO +			+		manon	V MARS	
	Cu		0		120	Carlon I				

TESTS AND USES

CONVERSION OF HYDROGEN TO 19.Water 20. Hydrogen chloride 21. Ammonia 22. Hydrogen sulphide HYDROGEN IN METALLURGY 23. Zinc oxide 24. Iron [III] oxide 25. Lead oxide



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