Enthalpy of Solution Aim: To determine the heat of solution of saft O1 and X when dissolved in water Hypotheris: Salt Of and X dissolve in water liberating heat Lence endothermically but Salt On clissolves more endothermically than salt X Variables: Independent - Time (s) Dependent - Temperature of the solution (CC) Controlled - Maur of the Salt (9) Volume of water (cm3) Apparatus. Measuring cylinder 100ml 250ml Thermometer Spatula Weighing Scale (mass 6g) Salts Grand X Stop watch Procedyrer. a) Using a measuring cylinder, measure 100cm3 of distilled , into a plastic beaker. b) Read and record the initial temperature of the water. c) Add salt O1 and stir continously with the thermometer d) Read and record temperature of the solution every after)

Enthalpy of Solution Investigating the solubility of a salt Aim: To determine the heat of solution of saft Of and X when dissolved in water Hypotheris: Salt Of and X dissolve in water liberating heat Lence endothermically but Salt On cliwolves more endothermically than salt X Variables: Independent - Time (s) Dependent - Temperature of the solution (OG) 2.5 0 0 5.6 0 5 5 1 0 1 5 0 0 Controlled. - Man of the Salt (9) Volume of water (cm3) Apparatus. Measuring cylinder 100ml(12) = HA minutes Plastic beaker 250ml (9V1) = FA Thermometer Spatula Weighing Scale (mass 6g) Salts G and X Stop watch Procedures. a) Using a measuring cylinder, measure 100cm3 of distilled water into a plastic beaker. by Read and record the initial temperature of the water. c) Add salt on and stir continously with the thermometer to disso d) Read and record temperative of the solution every after 1/2 minus

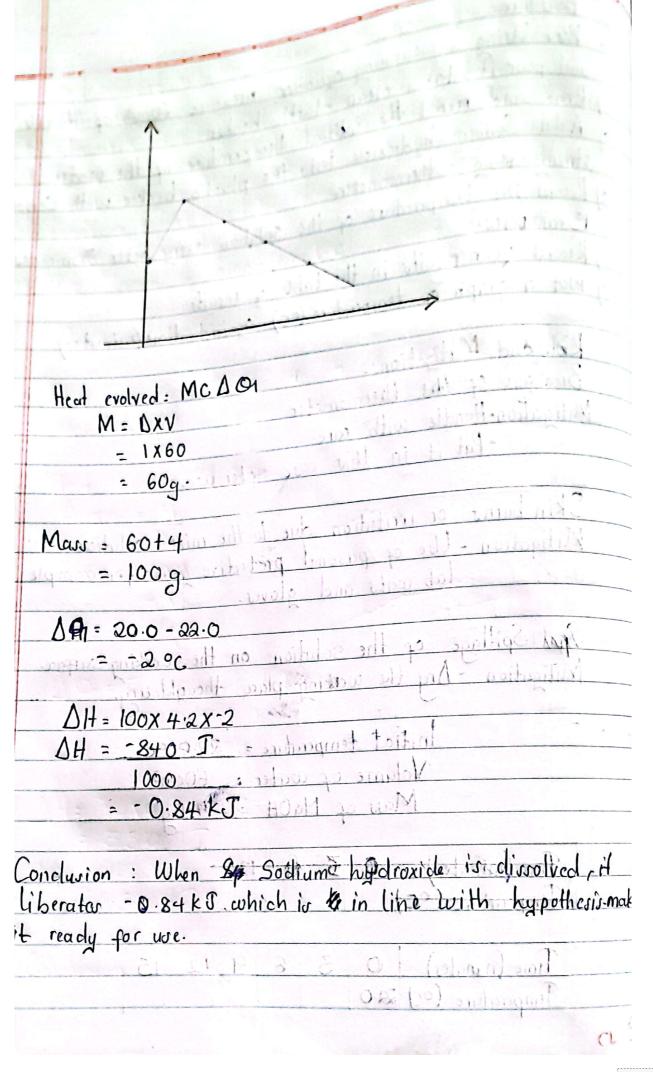
for 5 minutes. Proceed your results in the table below. Proceedure from (a) to (e) using salt x Plot a graph of temperature (c) against time (min)										
Risks and mitigations. Breakage of thermometer										
independent :										
Independent 4 Time (5) as										
Table of results.										
Dependent " Immorphies of the selection (SC)										
Time (min) 0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0										
Temperature Of the Site of the										
F solution Con relative										
(oc) X										
Apparatus.										
endothermic $\Delta H = (-ev) = 001 = 0001$ endothermic $\Delta H = (+ve) = 0000$										
endothermic AH = (twe) Jack reduced silvery										
Then or have the second of the										
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29 plantic beating 11 in the section										
Perof and record the initial transport is										
hold salt for and stir continually with the termina										
and record temperation of the spiritual										

DATE

	10.1
1	Heat evolved = MCDO1
-	
-	Density = M
-	
-	$m = \Delta x V$
	= 100X1
-	= 100g
•	Maer = 100+6
-	= 106 g
	201 1/1 1/1 1/1 01 01 01 01 01 01 01 01 01 01 01 01 01
	10 = Final temp - Initial temp
-	= 15 3H.O = 26.0
	= 8.0 °C no plant ad labora alsi con d
_	
	At MCD O1
1	100x4.2x8.ii ii 2000.ii 2000.i
	AH = 3561.6 J. dox
	Salt x
	DH=MCDO1 (MIN) - + 1 DO1= 36.0 - 26.0
	= 10.0°C
	(= 4452 I sat as surtainguist - fastoring d
-	Con Hoot to doll - billion
-	From the results, Salt X is seen to have dissolved in water
	from the results; sait & 13 ster to have arosolved in source
	endothermically thus not matching/agreeing with the hypot
	The factor in the same of the
	Meaning Odinder Boint
	Missile Laker (2000)
-	
-	The History
	the state of the s
	나는 사람들은 사람들이 되었다. 그는 사람들은 사람들이 가장 하는 것이 없는 것이 없었다.

11th October, 2024 During the manufacture of soap, Sodium hydroxide soln is on of the regularments for making soap. Workers noticed a change in temp of the container that was being used to disvolve so hydroxide into soln. The worker do not understand the chance of the temp change of the container and still could not coten determine when the Social hydroxide would fully to You are provided with distilled water and 4g of Mal Carry out asscientify investigate when the dissolved sodium hydroxide would be ready for we Aim: An experiment to invertigate when the disvolved sodiu hydroxide would be ready for use. Hypotheris: Sodium hydroxidedissolves in water liberating heat thus discolver exothermically. Variables: Independent - Time (min) Dependent - Temperature of the Solution (°C) Controlled - Mass of Hall Volume of water Apparatus wed Measuring cylinder rooml Plastic beaker 250mL Thermometer Mass of salt 49 Stop watch.

Procedures.									
11. " measure culinder Measure borm of distilled writer									
and pour it into a clean plastic beaker									
ned pour it into a clean plantic beaker of the water.) Read and record the intitial temperature of the water.									
. A ala codium nyclionice									
stirring using a thermometer. stirring using a thermometer.									
stirring using a thermometer. Record the temperature of the solution every after 3 minutes for									
e) Record your results in the table of results.									
e) Record your results in the table of sainst time (minutes) f) Plot a graph of temperature (OC) against time (minutes)									
f) rio a grapa									
River and Mitigations.									
Breakage of the thermometer									
Mitigation-Handle with care.									
- Put it in this case after we.									
- Put 11 1110 c-100 sq									
SI. I as is it to due to the mixed solution.									
Skin burns or irritation due to the mixed solution.									
Mitigation - Use of personal protective gears for example									
lab coats and gloves.									
Sport Spillage of the solution on the working surface									
Mitigation - Dry the working place thoughloury.									
$\sum_{i=1}^{n} X_i (1 - X_i) (i) = \prod_{i=1}^{n} X_i (1 - X_i) (i$									
nitial temperature = . 22.000									
Volume of water = 60cm3									
Man of MaOH = 4:00									
O ,									
Time (minutes) 8 3 6 12									
Temperature (°C)									
o tropporature Copy									
Time (minuter) 0 3 6 9 12 15									
Temperature (00) 20.0									



Enthalpy of displaament. Cusou (a) + Mgo) - Mgsot (2) + Cuo)
Is the enthalpy change that occurs when I mole of a metal action displaced from its solution by a more reactive metal.
Aim: To investigate the heart of displacement of a reaction between Copper (II) sulphate and Magnerium metal
Hypothesis: The reaction between Copper (II) sulphate and Magnesium
abdutto reas
Variables: Independent - Time of the reaction (minertes)
Dependent - Temperature of the solution
- Mars of Copper (II) sulphate (g)
ALLE THE PROPERTY OF THE PARTY
Apparatus. Plastic beaker 250 ml 0-25-0-88
Spatula
Copper (11) sulpate solution O.S. & C. I.XOI = H.A.
Magnerium meta
Measuring cylinder 3 3 3 1 10001
Procedure
Using a measuring oylinder, measure 70 cm² of distilled wate

	and add it into the	bea	ker	conta	ining	6	d of	Copp	er fils	
	and add it into in			للبنية		-10-0			(I)	
	b) Stie with contribut u	ntil H	ie H	se se	olid	outb	ves.	-		
No. de la constante de la cons	E) 60 or mountium or	retal	we	e a	doled	inte	the	rolo	tion o	1
	stired using a ther	momo	ter.	102-	فسلطا	ilani, .	والمراجعة والمسارك	غلاوة	4	09
	W Read and and recor	d the	tem	peral	ure	of t	ne s	olutio	on for	10
A100-11	for every 2 minutes	مر الد	Seal a	ثنيت	-11	. In		1		,00
	Sulphate. b) Stir with spatula with Spatula with Spatula wing a their stirred wing a their district and record for every. 2 minutes. b) Plot a graph of te	mperati	ire ((2c)	aga	int	Tim	elmi	nutes)	
and in	Table of results.	4477	w	pho	1100	J. M.			Add.	
	10 (, ,)		T.,		0	110	10	14	16	
	Time (minutes) 0 Temperature (°G) 26	2	14	300	240	26:0	40.0	uza	77	
	1 Temperature (°C) 126	0/880	30.0	290	370	200	70.0	1	4410	
	(solution market)		+	30011	- 1.	1 (2011)	4 - 344	1		
	Head evolved = MC	,DO		-	1	1 .1		Ā		
	Dengity Me	++-	Luta	ridia.		10.515	Day	4		
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	= 70x min	RUDDIE	13	TOO!	1 -					_
	(= 70g ()	13dd 5-	7	0001						
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	DO = Final temp	- Init	ial t	emp		62.2		المالة	11	1
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	= 12.0) 0 C						- 10	polish	3
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	∆H= 70x4.2x	12.0			usiko	62.3	100	2 111	1990	
	= <u>3,528</u>]					10	trut	co) i	wines	1
	1000			1	6	ub	arlin	Dai	unit.	1
	DH = 3.528 KJ							U		
	Conclusion								1. (J
							-		id in in	1
	Former of distilled		27/41	Wall	170	Pill	111/11	100 1	121	1