

Name: _____

Period: _____

Phase Changes PS #46

(1) Solve using the equation $\Delta H = H_{fus} m$

$$\Delta H = m \times H_{fus}$$

Substance	Heat (J)	Mass	Heat of Fusion (J/g)
Water	33,400 J	100 g	334
* Aluminum	99.25	0.25g	397
→ Ethanol	54,500 J	0.50 kg 500g	109
→ Methane	2344 J	40 g	58.6
* Mercury	57	5g	11.4

$$m = \frac{\Delta H}{H_{fus}}$$

(2) Solve using the equation $\Delta H = H_{vap} m$

Substance	Heat (J)	Mass	Heat of Vapourization (J/g)
Ethanol	1,172 J	2.0 g	586
Acetic Acid	98.75	0.25g	395
Sulfur	8400	6g	1400
Water	451.2	0.2g	2256
Gold	678,800 J	0.40 kg	1697

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Heating and Cooling

Solve using the equation $\Delta H = mc\Delta T$

Substance	ΔH = Heat (J)	m = Mass	c = Specific Heat Capacity (J/g°C)	Initial Temp (°C)	Final Temp (°C)	$\Delta T = T_f - T_i$ = Temperature Change (°C)
Water	8360	50 g	4.18	10	50	40
Iron	135			15	45	30
Lead		4.0 g		100	150	
	126		0.840	60	65	
Ethanol		0.8 kg		40	60	
Silver	192			100	180	
		0.040 kg	0.390	20	30	
Cobalt	143.1	20 g		3	18	

↑
on the eqn.
sheet