

293KJ	1 mole C_2H_5OH	46 g C_2H_5OH
	1235KJ	1 mole C_2H_5OH


④

$$\Delta H_{rxn} = n \sum \text{prod} - n \sum \text{react}$$

$$= [2(KCl) + Mg(s)] - [2(K) + MgCl_2]$$

$$= [2(-435.9) + 0] - [2(0) + -641.6]$$

⑤ ~~0.385~~ g, ~~75g~~, ~~150J~~



g	°C	150J
0.38		75g
c		m

5.26 DT

Assembly

25°C ^{T_i} start
+ 5.26 DT

30.2°C _{T_f}

① n PEL Size

$\frac{s/p/d/f}{0/1/2/3}$	l	Azimuthal / Sublevel	Shape
(-l to +l)	m	Magnetic / Orbital	Orientation in space
$\pm \frac{1}{2}$	s	Spin	Spin

l max n-1

$$\textcircled{7} \quad \frac{2.25 \text{ J}}{\text{g} \cdot ^\circ\text{C}} \quad , \quad \frac{100 \text{ g}}{\text{mole}}$$

$$\frac{\text{J}}{\text{mole} \cdot ^\circ\text{C}}$$

$$\frac{2.25 \text{ J}}{\text{g} \cdot ^\circ\text{C}} \quad | \quad \frac{100 \text{ g}}{\text{mole}}$$

$$\textcircled{9} \quad c = f \lambda$$

$$\frac{3 \times 10^8 \text{ m}}{\text{Sec}} = f \left(280 \times 10^{-9} \text{ m} \right)$$

Angstrom

$$f = 1.07 \times 10^{15} \text{ sec}^{-1}$$

⑩ 451 nm $E = \text{--- J}$

$E = hf$

$c = f\lambda$

$f = \frac{c}{\lambda}$

$E = \frac{hc}{\lambda} = \frac{(6.63 \times 10^{-34})(3 \times 10^8)}{451 \times 10^{-9} \text{ m}}$

$4.9 / \times 10^{-19} \text{ J}$

$J = \frac{\text{kg} \cdot \text{m}^2}{\text{sec}^2}$

⑫ $E = R_H \left(\frac{1}{n_i^2} - \frac{1}{n_f^2} \right)$

$= 2.18 \times 10^{-18} \left(\frac{1}{5^2} - \frac{1}{2^2} \right)$

$E = -4.578 \times 10^{-19} \text{ J}$

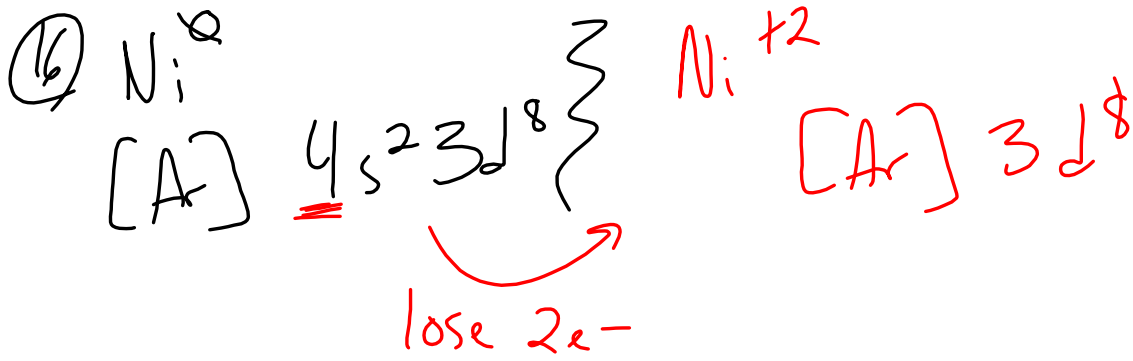
434×10^{-9}

$E = hf, c = f\lambda$

$\frac{E}{h} = \frac{hc}{\lambda}$

$\lambda = \frac{hc}{E} = \frac{(6.63 \times 10^{-34})(3 \times 10^8)}{4.578 \times 10^{-19}}$

$\lambda = 4.34 \times 10^{-7} \text{ m}, 434 \text{ nm}$



EC2

$$\lambda = \frac{h}{mv} = \frac{6.63 \times 10^{-34}}{(145 \times 10^{-3} \text{ Kg})(30)}$$

$K = 10^3$

145g

(Ecl) Water = Cr (108°C)

$mC\Delta T = mC\Delta T \leftarrow \oplus$

(50g)(4.18)($T_f - 20$) = (100g)(0.448)(100 - T_f)

$209(T_f - 20) = 44.8(100 - T_f)$

$209T_f - 4180 = 4480 - 44.8T_f$

$+44.8T_f \quad +4180 \quad +4480 \quad +44.8T_f$

$253.8T_f = 8660$

$T_f = 34.91^\circ$

- ① NaCl
- ② SiO₂
- ③ NH₄Cl