Born-Haber Cycle for: NaCl

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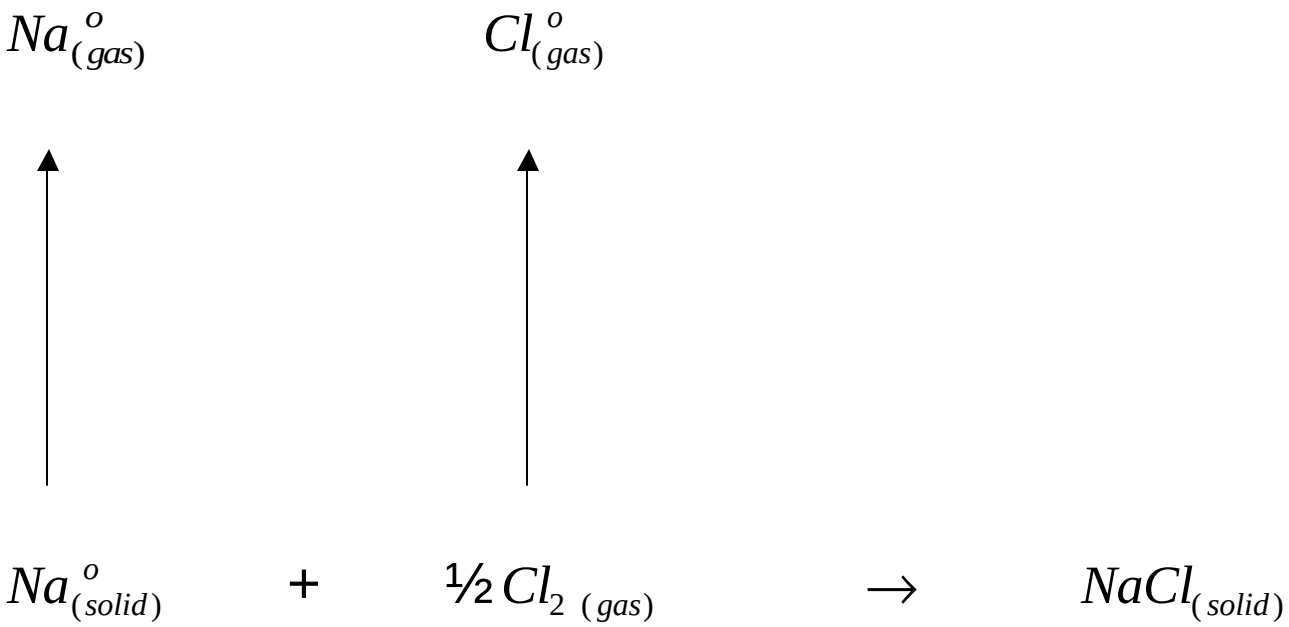
$$Na^{o}_{(solid)} \quad + \quad \tfrac{1}{2}Cl_{2\ (gas)} \quad \rightarrow \quad NaCl_{(solid)}$$

Born-Haber Cycle for: NaCl

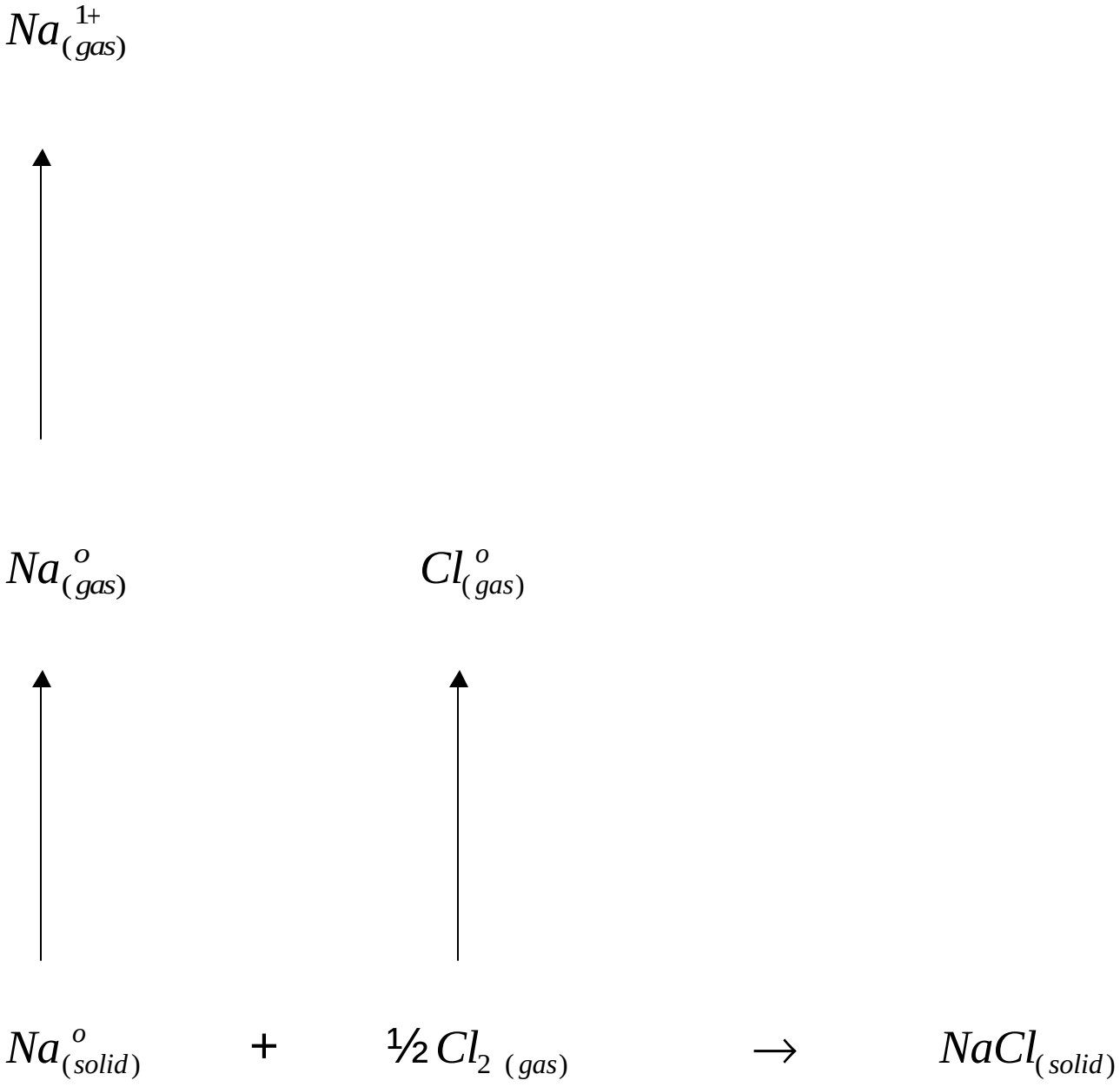
$Na^{o}_{(gas)}$

$Na^{o}_{(solid)} \quad + \quad ½\,Cl_{2\ (gas)} \quad \rightarrow \quad NaCl_{(solid)}$

Born-Haber Cycle for: NaCl



Born-Haber Cycle for: NaCl



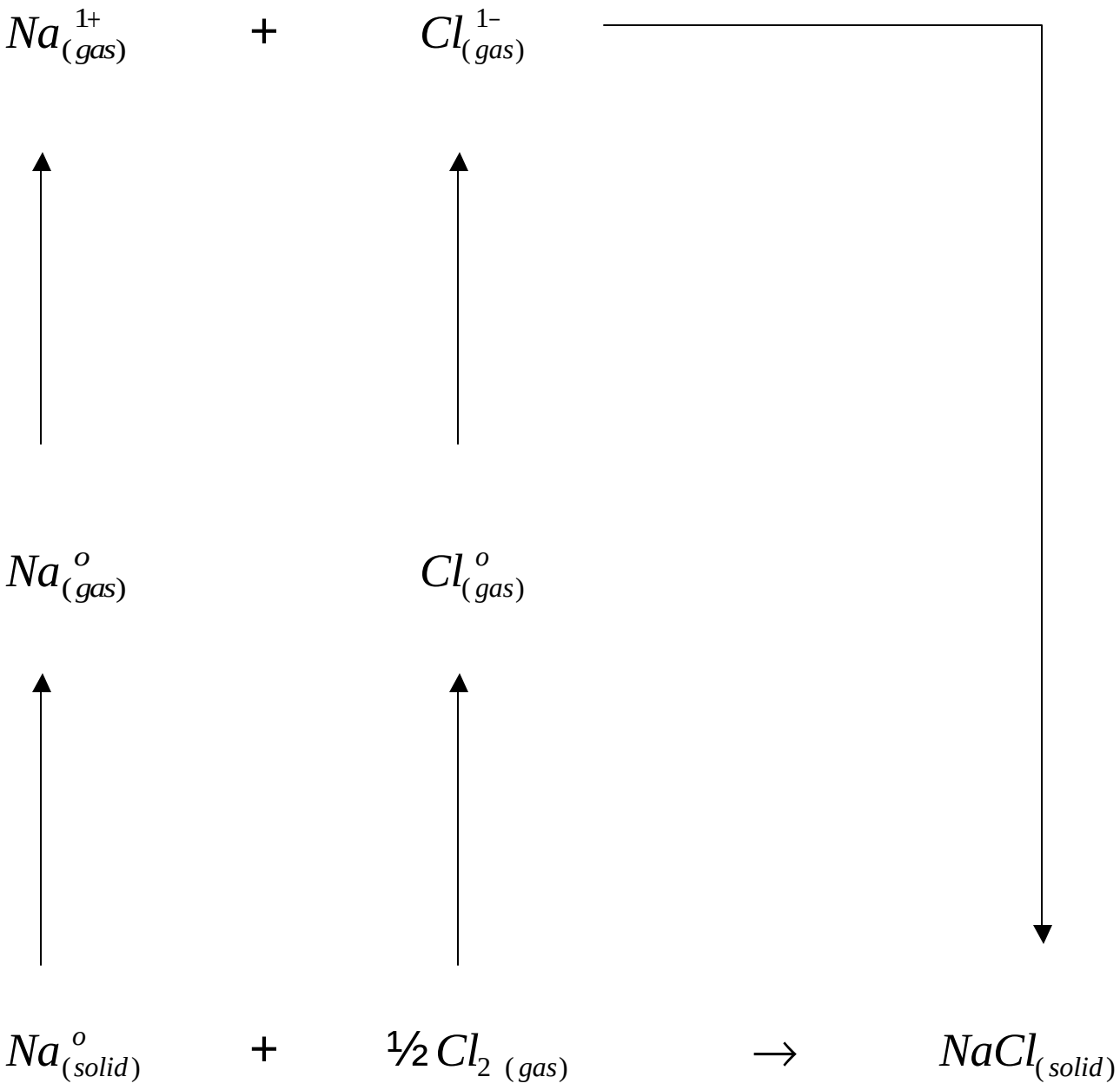
Born-Haber Cycle for: NaCl

$Na^{1+}_{(gas)}$ $Cl^{1-}_{(gas)}$

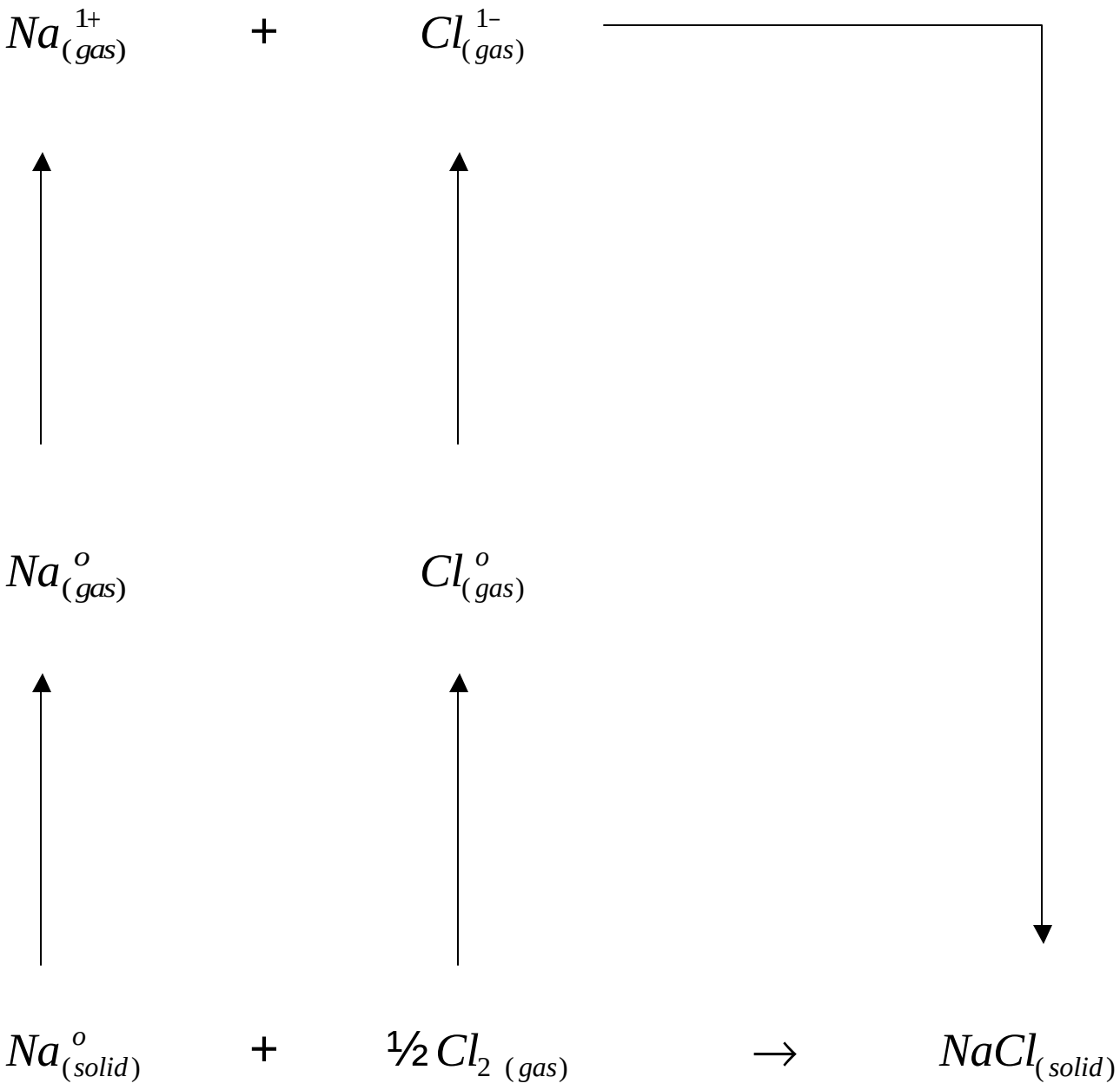
$Na^{o}_{(gas)}$ $Cl^{o}_{(gas)}$

$Na^{o}_{(solid)} + \frac{1}{2} Cl_{2\ (gas)} \rightarrow NaCl_{(solid)}$

Born-Haber Cycle for: NaCl

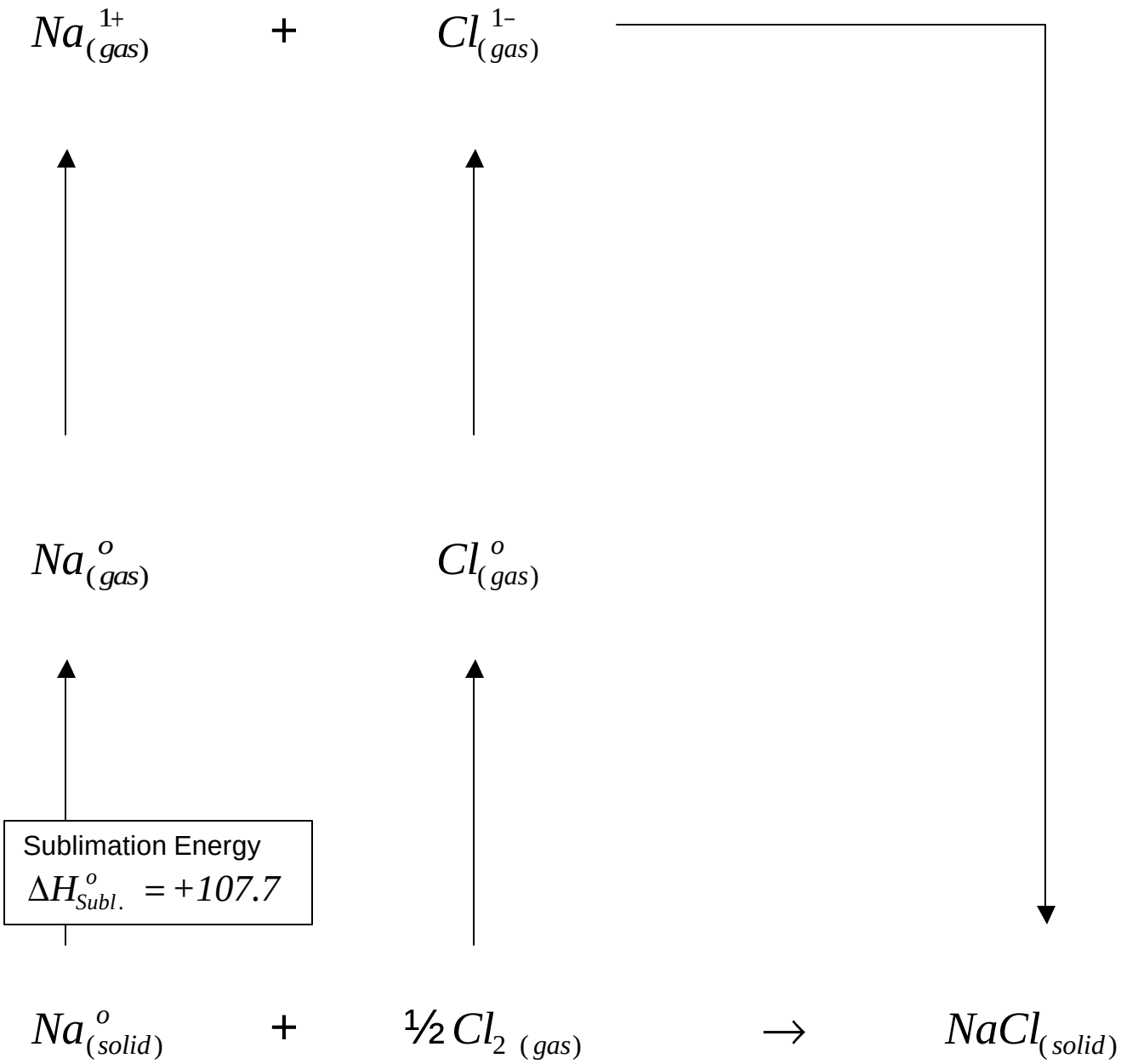


Born-Haber Cycle for: NaCl



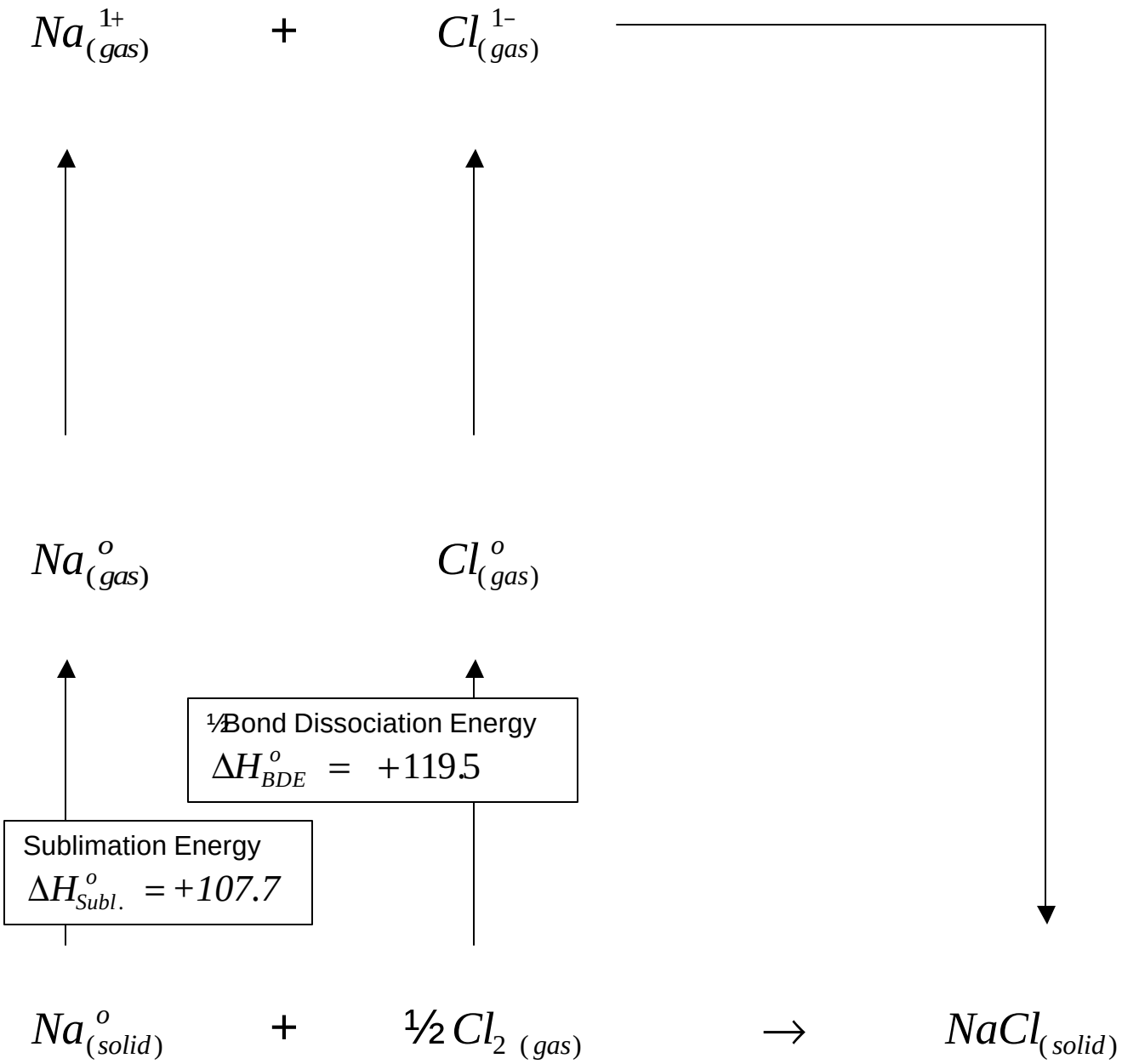
$$Enthalpy\ \ of\ \ Formation,\ \ \Delta H_f^o\ =\ -411.2\ kJ/mole$$

Born-Haber Cycle for: NaCl



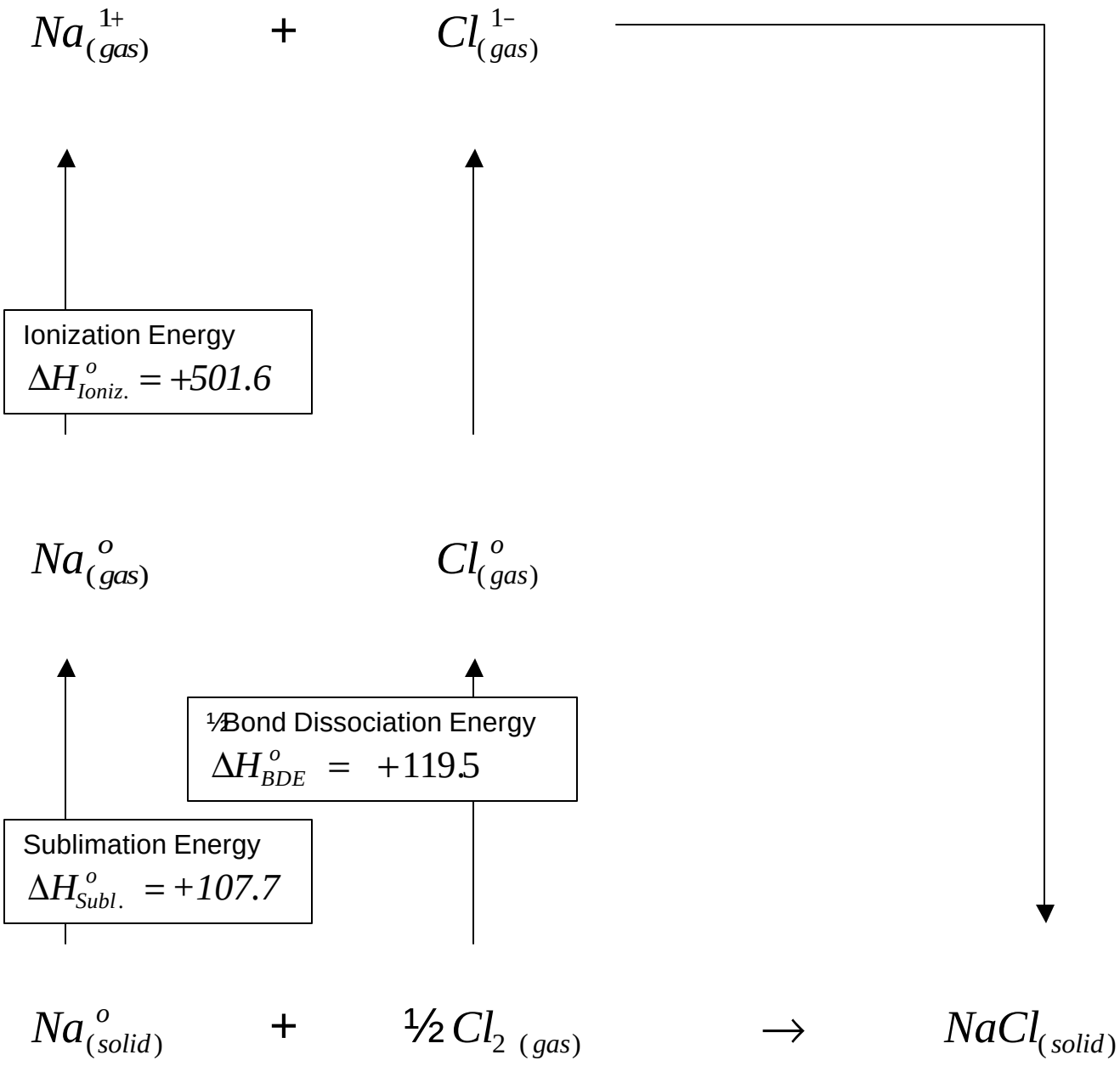
$$Enthalpy\ of\ Formation,\ \Delta H^{o}_{f} = -411.2\ kJ/mole$$

Born-Haber Cycle for: NaCl



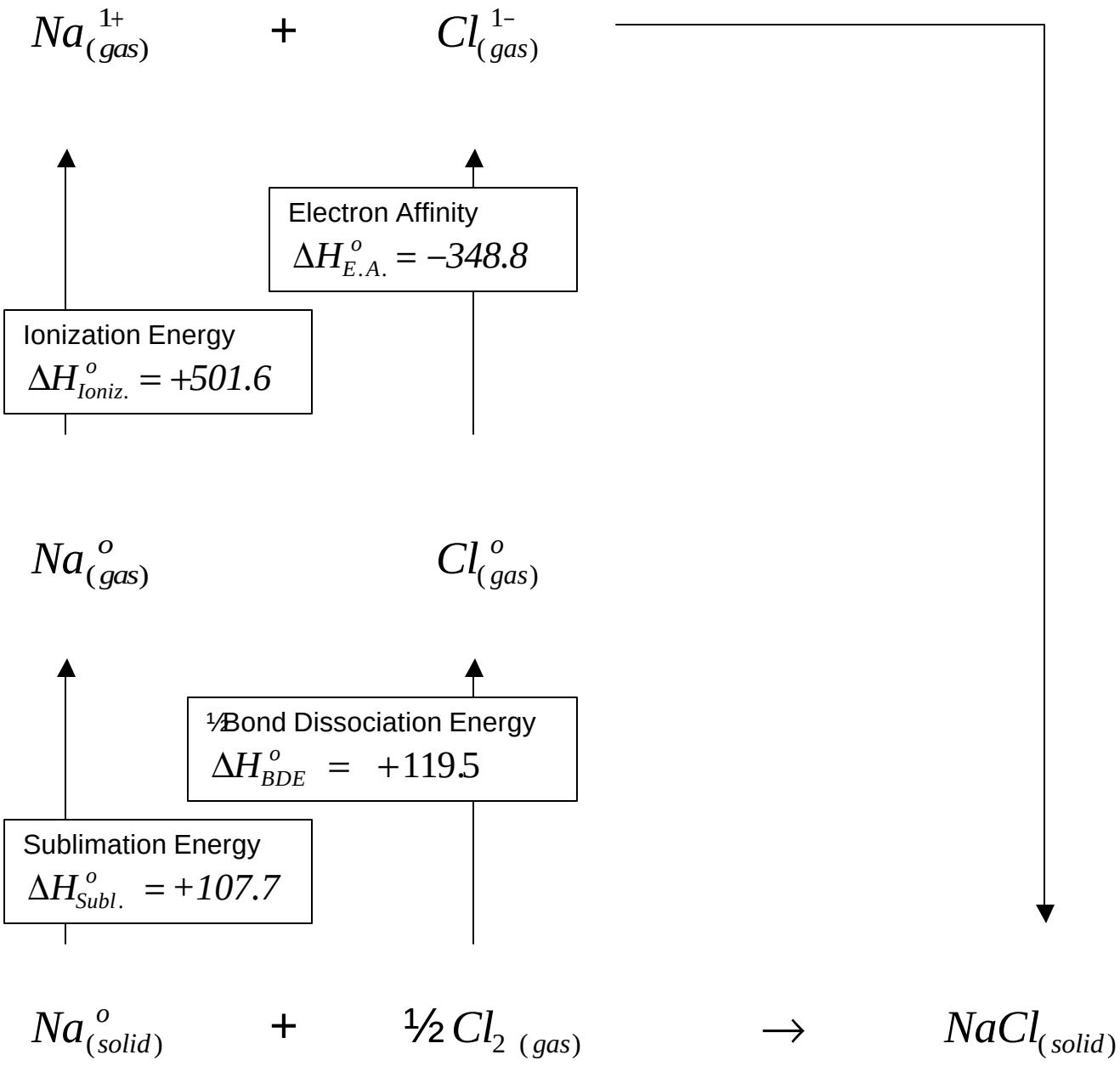
$$Enthalpy\ of\ Formation,\ \Delta H^{o}_{f} = -411.2\ kJ/mole$$

Born-Haber Cycle for: NaCl



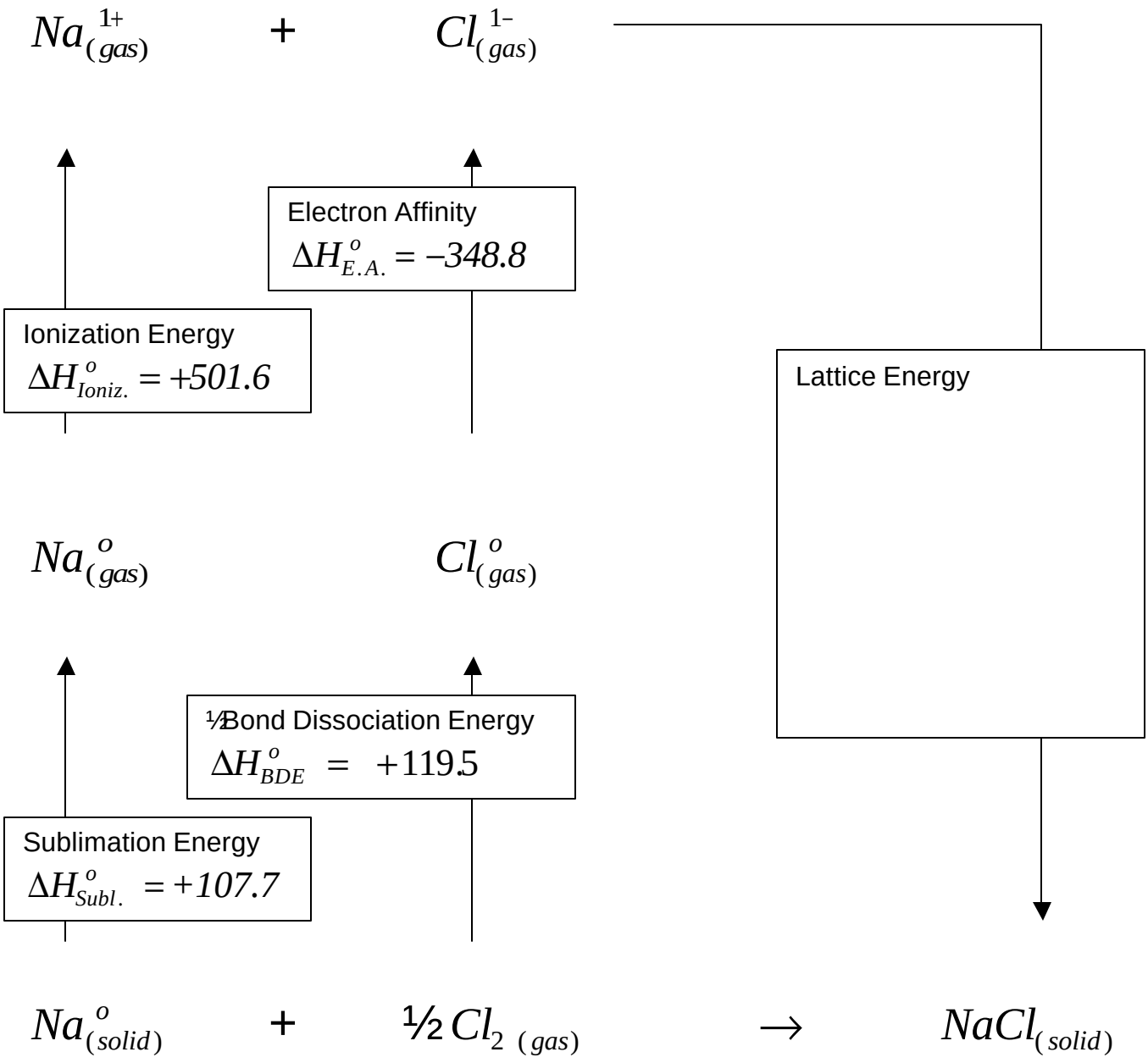
$$Enthalpy\ of\ Formation,\ \Delta H^o_f = -411.2\ kJ/mole$$

Born-Haber Cycle for: NaCl



$$Enthalpy\ of\ Formation,\ \Delta H^o_f = -411.2\ kJ/mole$$

Born-Haber Cycle for: NaCl

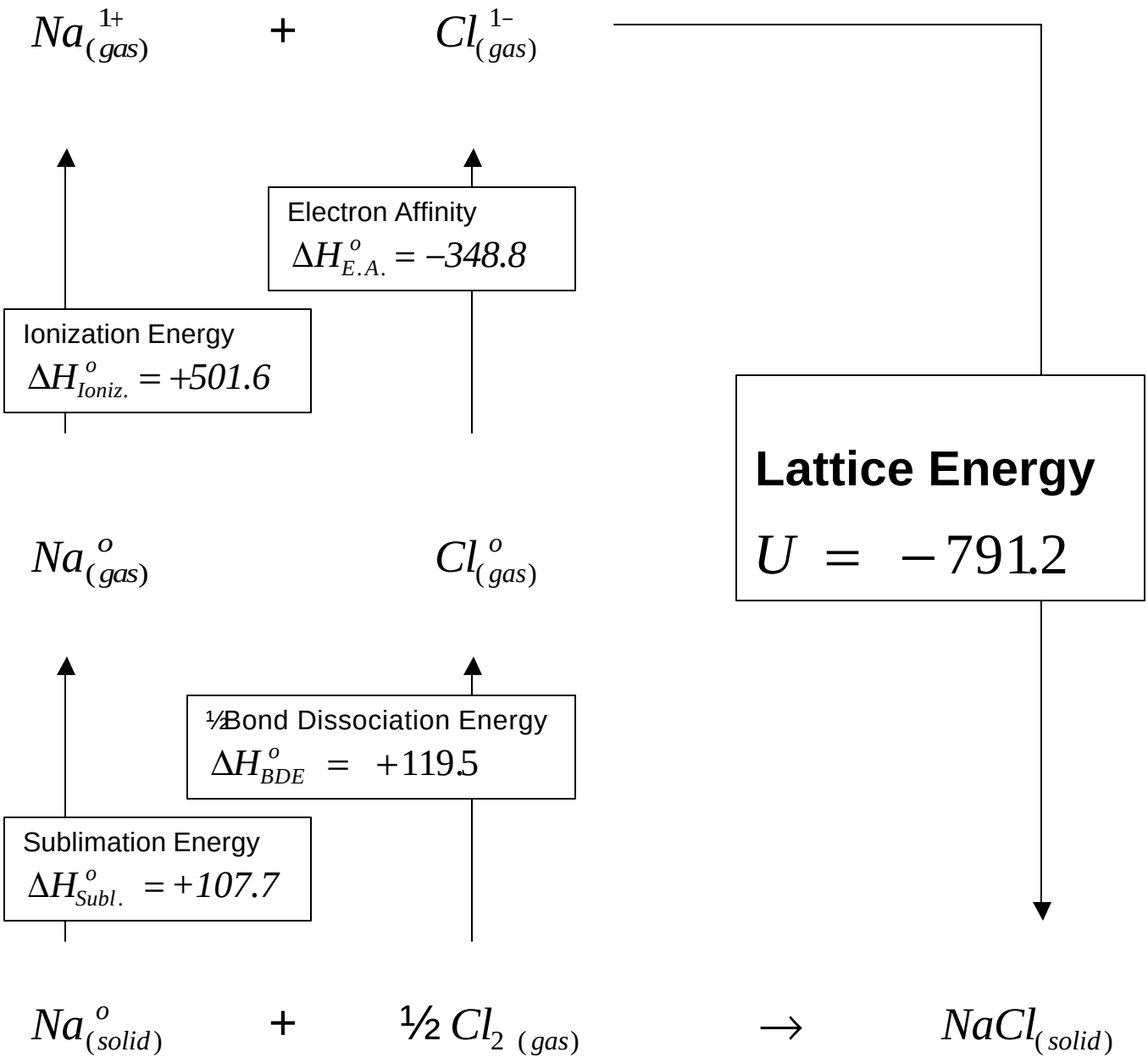


$$Enthalpy\ of\ Formation,\ \Delta H^o_f = -411.2\ kJ/mole$$

$$\Delta H^o_f = Subl. + (1/2)BDE + IE + EA + U$$

$$-411.2 = +107.7 + 119.5 + 501.6 + (-348.8) + U$$

Born-Haber Cycle for: NaCl



$$Enthalpy\ of\ Formation,\ \Delta H^o_f = -411.2\ kJ/mole$$

$$\Delta H^o_f = Subl. + (1/2)BDE + IE + EA + U$$

$$-411.2 = +107.7 + 119.5 + 501.6 + (-348.8) + U$$