2002-J-2

- amide
- alkene
  \( C_8H_8 \)
  104.14
  104.14 g
  3841

2002-J-3

- [Chemical structure image]
  \( n \)
  HCl

- [Chemical structure image]
  \( n \)
  CH\(_3\)OH

- [Chemical structure image]
  \(+\)
  CH\(_3\)CH\(_2\)OH
**2002-J-4**

- **Si** $1s^2 \ 2s^2 \ 2p^6 \ 3s^2 \ 3p^2$ or [Ne] $3s^2 \ 3p^2$
- **F**$^-$ $1s^2 \ 2s^2 \ 2p^6$ or [Ne]
- **B** $1s^2 \ 2s^2 \ 2p^1$ or [He] $2s^2 \ 2p^1$
- **Mg$^+$** $1s^2 \ 2s^2 \ 2p^6 \ 3s^1$ or [Ne] $3s^1$

- ![Chemical Structures](attachment:chemical_structures.png)

**2002-J-5**

- $1 \text{ w.r.t. } S_2O_8^{2-}; \ 1 \text{ w.r.t. } \Gamma$
- $2$
- $6.14 \times 10^{-3} \text{ L}^3 \text{ mol}^{-3} \text{ s}^{-1}$
- $7.68 \times 10^{-6} \text{ mol L}^{-1} \text{ s}^{-1}$
- \[ \text{PbO}_2 \]

\[
\text{Pb(s)} + \text{SO}_4^{2-}(\text{aq}) \rightarrow \text{PbSO}_4(\text{s}) + 2\text{e}^-
\]

- A fuel cell does a combustion reaction in a controlled electrochemical way. Typically, the oxidant is \( \text{O}_2 \) and the fuel is \( \text{H}_2 \). Fuel cells do not get recharged, but will maintain a constant cell potential so long as the pressures of the fuels are kept constant.

Iron can be protected from corrosion by connecting it to a metal with a lower standard reduction potential (eg Zn or Mg). The more reactive metal acts as the anode in any electrochemical reaction and will be oxidised in preference to the iron.