



- 0 8** . **3** When the complex ion  $[\text{Cu}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{2+}$  reacts with 1,2-diaminoethane, the ammonia molecules but not the water molecules are replaced.

Write an equation for this reaction.

[1 mark]

---

- 0 8** . **4** Suggest why the enthalpy change for the reaction in Question 8.3 is approximately zero.

[2 marks]

---

---

---

---

---

- 0 8** . **5** Explain why the reaction in Question 8.3 occurs despite having an enthalpy change that is approximately zero.

[2 marks]

---

---

---

---

---

Turn over for the next question