

OCR (B) Chemistry A-Level

C13 - Inorganic Chemistry and the Periodic Table

Flashcards

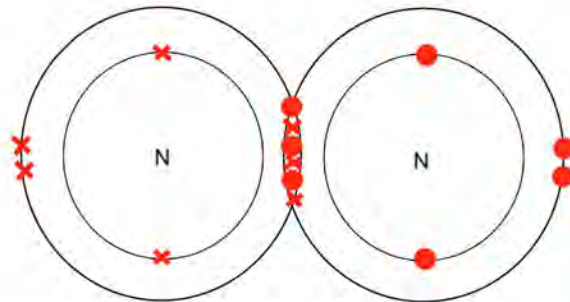


What is the bonding like in nitrogen gas?



What is the bonding like in nitrogen gas?

Nitrogen has a strong triple bond, making it very unreactive.

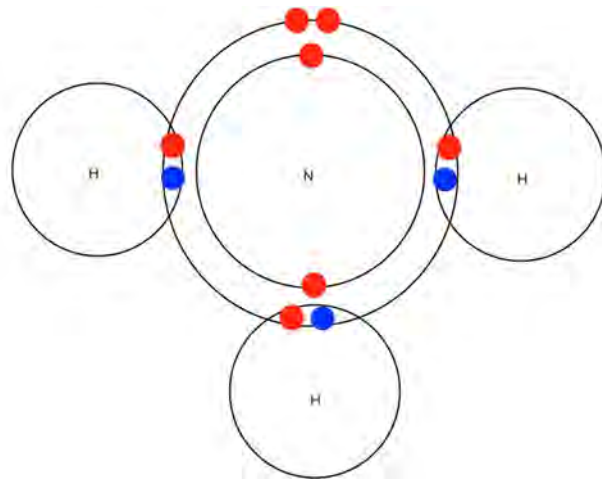


What is the bonding like in ammonia,
 NH_3 ?



What is the bonding like in ammonia, NH_3 ?

There are 3 bonding electron pairs (covalent bonds between nitrogen and hydrogen) and 1 lone electron pair so the bond shape is pyramidal, 107° .

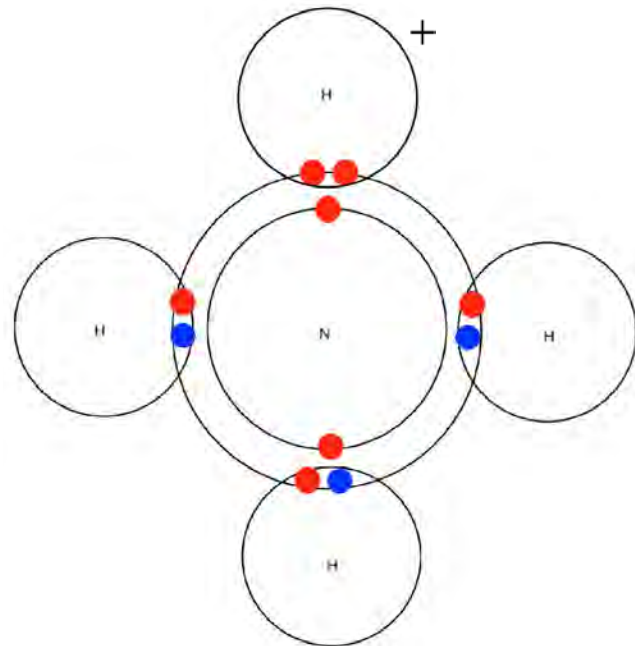


What is the bonding like in ammonium ions?



What is the bonding like in ammonium ions?

- There are 4 bonding pairs and no lone pairs.
- One of the covalent bonds is dative.
- The bond shape is tetrahedral and the bond angle is 109.5° .



What are the names of N_2O , NO and NO_2 ?



What are the names of N_2O , NO and NO_2 ?

- N_2O = Nitrous oxide
- NO = Nitric oxide
- NO_2 = Nitrogen dioxide



How do N_2O , NO and NO_2 appear?



How do N_2O , NO and NO_2 appear?

- N_2O = Colourless gas
- NO = Colourless gas
- NO_2 = Reddish-brown gas



What is the interconversion of the nitrate(V) ion, nitrate(III) ion and the ammonium ion?



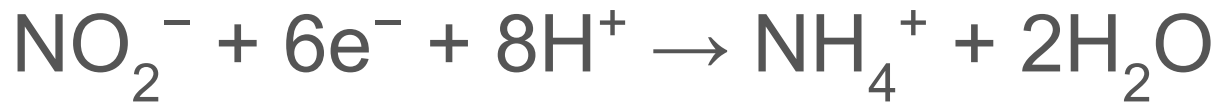
What is the interconversion of the nitrate (V) ion, nitrate (III) ion and the ammonium ion?



How are nitrite ions converted to ammonium ions?



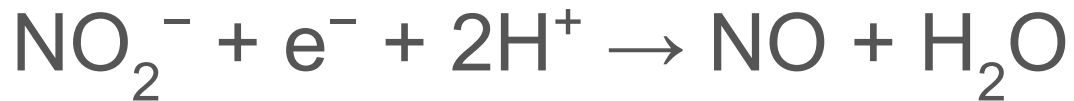
How are nitrite ions converted to ammonium ions?



How are nitrite ions reduced to nitric oxide?



How are nitrite ions reduced to nitric oxide?



How is nitric oxide reduced to nitrous oxide?



How is nitric oxide reduced to nitrous oxide?



How do you test for nitrate (V) ions?



How do you test for nitrate (V) ions?

- Warm the sample with Devarda's alloy and NaOH.
- Test the gas produced with damp red litmus paper.
- If it turns blue this confirms the presence of nitrate (V) ions.



How do you test for ammonium, NH_4^+
ions?



How do you test for ammonium, NH_4^+ ions?

- Warm sample with sodium hydroxide.
- Test the gas released with a damp piece of red litmus paper.
- If it goes blue, this confirms the presence of the ammonium ion.

