

Non Sibi High School

Andover's Chem 250: Introductory/Basic Chemistry

Chapter 9, Review Quiz 1 Answers

1

Write the chemical formula for each compound:

- ammonium phosphate
 - butanol
 - aluminum sulfate
 - potassium nitride
- NH_4^+ , $\text{PO}_4^{3-} \rightarrow (\text{NH}_4)_3\text{PO}_4$
 - organic alcohol $\rightarrow \text{C}_4\text{H}_9\text{OH}$
 - Al^{3+} , $\text{SO}_4^{2-} \rightarrow \text{Al}_2(\text{SO}_4)_3$
 - K^+ , $\text{N}^{3-} \rightarrow \text{K}_3\text{N}$

2

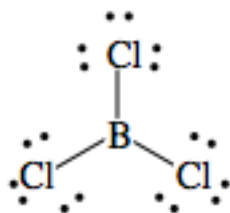
Write the name of each compound:

- $\text{Fe}(\text{OH})_3$
 - P_2O_5
 - $\text{Mg}(\text{HCO}_3)_2$
 - C_6H_{14}
- Fe^{3+} , $\text{OH}^- \rightarrow$ iron(III) hydroxide
 - binary molecular \rightarrow diphosphorus pentoxide
 - Mg^{2+} , $\text{HCO}_3^- \rightarrow$ magnesium bicarbonate (or hydrogen carbonate)
 - organic alkane \rightarrow hexane

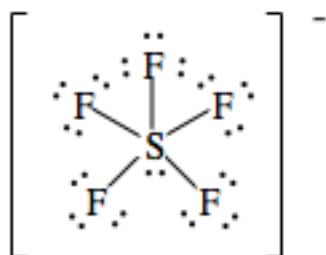
3

Draw Lewis structures for:

- boron trichloride

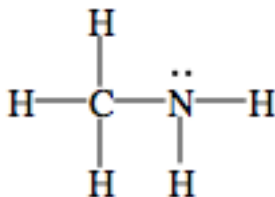
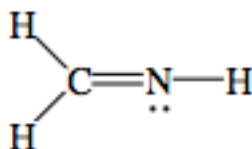


b. SF₅⁻



4

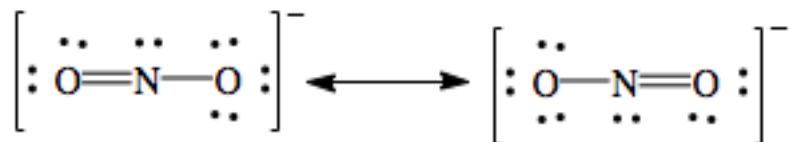
Draw Lewis structures for H₂CNH and CH₃NH₂. Which molecule will have the longer carbon-to-nitrogen bond length?



CH₃NH₂ has a single bond between carbon and nitrogen, whereas CH₂NH has a double bond between carbon and nitrogen. Fewer bonds = longer bond length, so CH₃NH₂ has the longer carbon-to-nitrogen bond length.

5

Draw all the resonance structures for NO_2^-



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