

Answer on Question #53497 – Chemistry – Inorganic Chemistry

Question:

NF₃ does not have donor properties like NH₃. explain why?

Answer:

Fluorine is the most powerful oxidizing element with electronegativity of 4.0. At the same time electronegativity for hydrogen is much less being of 2.1, while for nitrogen its value is in the middle being of 3.04. Comparing these characteristics it is clear that nitrogen shifts electron density to itself from hydrogen atoms to increase the negative charge as well as donor properties of its lone pair in NH₃. Contrary to hydrogen, fluorine withdraws electron density from nitrogen to provide a positive charge on it in NF₃. This case a lone pair is partially distributed over entire molecule that leads to decrease in its availability providing weak donor properties.

