Answer on Question #53447 – Chemistry – Inorganic Chemistry

Question:

What will happen if nitrogen is not present in atmosphere?

Answer:

First of all the atmospheric pressure increases, because oxygen has higher molecular weight than nitrogen (32 against 28 g/mol).

For all living organism it would lead to the drastic changes:

1) Animals and humans are not able to breathe, because pure oxygen, being reactive oxidizing agent, would destroy organism from inside;
2) Since nitrogen is involved in variety of biological processes occurring in living organisms, its absence would stop growth, development and reproduction for all representatives of flora and fauna. For instance, DNA, RNA, proteins, enzymes, chlorophyll contain nitrogen atoms and therefore they can't be reproduced without them.

In conclusion, the main source of nitrogen is the atmosphere. Diazotrophs (cyanobacteria, green sulfur bacteria, etc.) containing nirogenases fix N_2 and transform it to the form of NH_4^+, which can be used by plants and other living organism. Thus, any change in a concentration of atmospheric nitrogen might kill all life on the Earth.