

Answer on the question #54604 – Chemistry – General chemistry

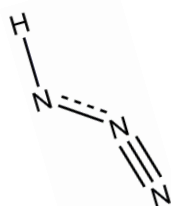
Question:

What is hydrazoic acid? Why are the ionic azides more stable than the covalent azides and hydrazoic acid?

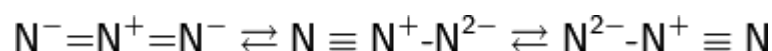
(b) The oxidising power of halogens decreases down the group in the Periodic Table, explain.

Answer:

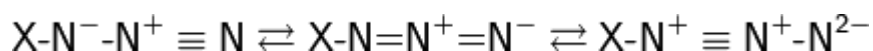
Hydrazoic acid is hydrogen azide, chemical formula HN_3 . It has the following structure:



The difference in stability of ionic and covalent azides is in the structure of the azide anion. Azide anion can take different resonance structures:



These structures are symmetric, and the dipole moment is zero. For the covalent azides there is no such symmetry and the structure is a dipole (the second structure is dominant):



b) the oxidizing power depends on the electronegativity of the atom. It is well-known that the electronegativity is decreasing with the increase of the period.

This effect is connected with the screening of the nucleus by the electron shell, and therefore weaker attraction of outer shell to the nucleus.