

Answer on the Question #64103, Chemistry / Inorganic chemistry

I was studying about boron family and I found that in this group only Al react water to form hydroide but not B, Ga or In.

Can anyone tell my why it is the case?

Answer:

All the elements from the Boron family are p-elements. Boron located between the Beryllium and Carbon and it is non-metal. Unlike Boron all elements from 13 Group has metal character and reacts with water and forms hydroxides and oxides. Boron is acid-forming element.

All this properties can be explained by the ionization energy:

Element	B	Al	Ga	In	Tl
Ionization energy / eV	71.35	53.20	57.20	52.69	56.31

Boron have highest ionization energy that is why this element can't react with water like other elements from it's family.