Coordinate bond

Friday, 9 February 2024 10:17 pm

Coordinate bond - the bond that form where both the shared electrons originate from one atom

Average length of covalent bond

1 covalent bond: 154pm $m \times 10^{-12} = pm$

2 covalent bond : 134pm

3covalent bond : 128 pm

Energy require to break bond

1 : 346 kJ

2 : 614 kJ

3 : 839 kJ

More bond, more strength

More electron shared
∴ greater electrostatic attraction
→ less distance

C≡C do not exist
Because distance covalent bond < 120pm
the nuclei repel.

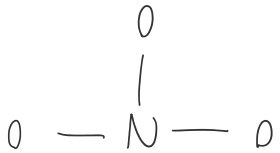
B and Be is the exception of octet rule (incomplete octet)

Step of drawing the coordinate bond with lewis structure
Step 1 = calculate the number of electron at valence shall
Step 2 = put the single bond between the atom
Step 3 = arranged the number of electron around each atom
Step 4 = in order to achieve the full valence shell, sometime the lefted electron from full valence shelled atom have to be shared.(don't forget to add brackets)

eg: NO_3^-

step 1 5+18+1=24 ē

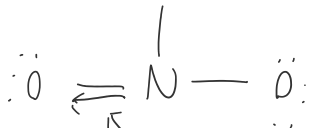
step 2



step 3:

← bond use for indicate coordinate bond.

step 4:



1 ← bond because 1 bond represent 2 electron which means 2 electron is contributed towards oxygen.

(both shared electron is originate by 1 atom)