

Question #83772

What is the difference between the carbon-oxygen bond in your model of methanol and the one in carbon dioxide

Answer:

Both of these bonds are covalent, but there is the one significant difference between them: the carbon-oxygen bond in carbon dioxide is nonpolar, while the same bond for methanol is polar. First one is not polar because of the geometry of molecule: it is linear, so all of carbon-oxygen bonds are equal (both oxygen atoms pull the electron density over itself with equal force). Another difference is in that there are 2 bonds (double bond) oxygen-carbon per one oxygen atom in carbon dioxide, while in methanol there is only one (single) bond between them.

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