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Draw the Lewis structure for ethyl alcohol which has a molecular formula of C_2H_6O and a condensed formula of CH_3CH_2OH.

Draw the Lewis structure for acetone which has a molecular formula of C_2H_6O and a condensed formula of CH_3OCH_3.

Draw the Lewis structure for carbon dioxide (CO_2)

Draw the Lewis structure for acetic acid which has a molecular formula of $C_2H_4O_2$ and a condensed formula of CH_3COOH.

Draw 4 different Lewis structures that all have the molecular formula of C_4H_8

Draw the Lewis structure and then the 3-dimensional structure for the PF_5 molecule. Indicate any polar bonds and indicate whether the whole molecule is polar.

Draw the Lewis structure and then the 3-dimensional structure for the methanol (CH_3OH) molecule. Indicate any polar bonds and indicate whether the whole molecule is polar.

Draw the Lewis structure and then the 3-dimensional structure for the acetic acid (CH_3COOH) molecule. Indicate any polar bonds and indicate whether the whole molecule is polar.

Draw the possible resonance structures for the thiocyanate ion (SCN^{-1}) and use formal charges to decide which one is the best representation of the structure.

Use the table of bond dissociation energies to determine the amount of energy released when 100.0 grams of ethyl alcohol (CH_3CH_2OH) is burned. Compare this to the amount of energy released when 100.0g of octane (C_8H_{18}) is burned.

Ethyl alcohol is used as a fuel additive in gasoline (which is pretty much just octane). The density of ethyl alcohol is 0.79 g/cm^3 and the density of octane is 0.70 g/cm^3. Is an ethanol/gasoline mixture a better fuel than just pure gasoline? Explain.