Polarity Practice Worksheet

For each of the following pairs of compounds, determine which is most polar based on their Lewis structures.

1) methyl chloride ($CHCl_3$) or methyl bromide ($CHBr_3$)

2) water or hydrogen sulfide (H_2S)

3) hydrochloric acid (HCl) or hydroiodic acid (HI)

4) bromoacetylene (C_2HBr) or chloroacetylene (C_2HCl)

5) methanol (CH_3OH) or diethyl ether [$(CH_3)_2O$]

6) acetone [$(CH_3)_2CO$] or propanol (C_3H_8O)

Polarity Practice Worksheet - Solutions

For each of the following pairs of compounds, determine which is most polar based on their Lewis structures.

1) **methyl chloride ($CHCl_3$)** or methyl bromide ($CHBr_3$)

Since chlorine is more electronegative than bromine, the molecule has a higher polarity.

2) **water** or hydrogen sulfide (H_2S)

Since oxygen is more electronegative than sulfur, the moelcule has a higher polarity.

3) **hydrochloric acid (HCl)** or hydroiodic acid (HI)

Chorine is more electronegative than iodine, making HCl more polar.

4) bromoacetylene (C_2HBr) or **chloroacetylene (C_2HCl)**

Chlorine is more electronegative than bromine, making chloroacetylene more polar.

5) **methanol (CH_3OH)** or diethyl ether [$(CH_3)_2O$]

Since diethyl ether has the oxygen at the middle of the molecule rather than on the end, it is far less polar than methanol.

6) **acetone [$(CH_3)_2CO$]** or propanol (C_3H_8O)

A quick look at the Lewis structures of this molecule should convince you that acetone is far more polar, as the molecule appears more unbalanced.

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