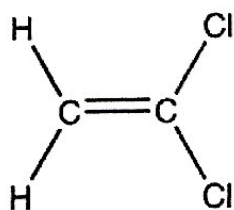


Isomers

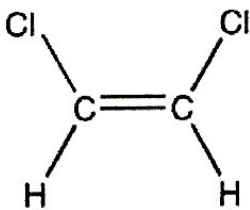
Isomers: molecules with the Same molecular formula but different spatial arrangement of atoms

- Same # of atoms of each element
- Different arrangement of their atoms in space

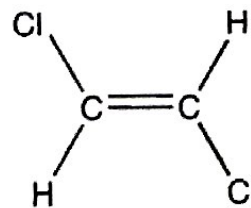
Isomer Example: $C_2H_2Cl_2$ (dichloroethene) Isomers



1,1-dichloroethene



cis-1,2-dichloroethene



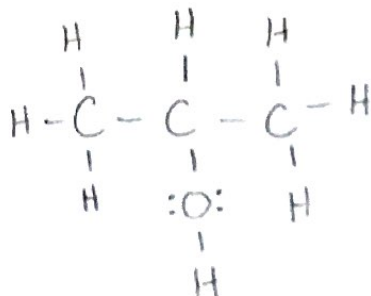
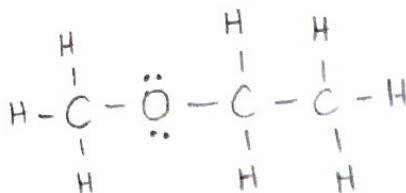
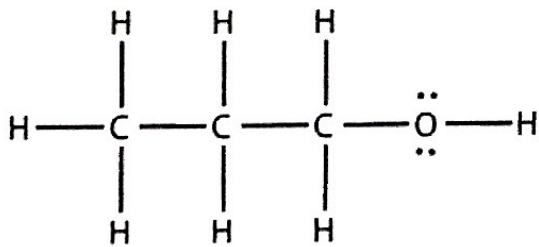
trans-1,2-dichloroethene

IMPORTANT: Resonance Structures are NOT isomers!

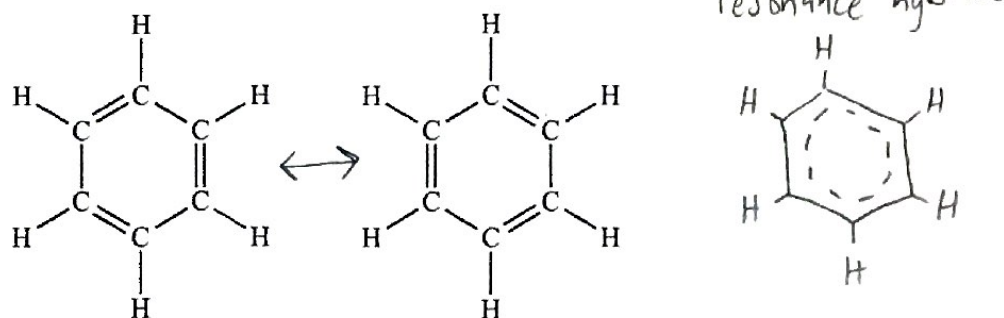
- The actual structure of a molecule with resonance is 1 hybrid amalgamation of that molecule.
- Isomers are MULTIPLE, DIFFERENT structures that can have different properties.

Let's Practice!

1. There are only 3 different isomers of C_3H_8O . One of them is shown below: can you draw the other two?

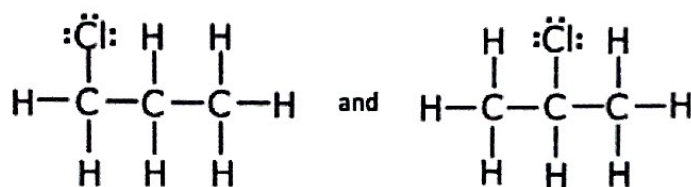


2. Are the two structures shown below isomers of each other or resonance structures? Justify your answer.



Resonance structures!
Atoms are in exactly the same place, only bond placement is different.

3. Are the two structures shown below isomers of each other or resonance structures? Justify your answer.



Isomers!

The chlorine has moved from a terminal carbon to the middle carbon.

4. Which of the following structures is a structural isomer to the molecule shown below?

