Enols and Enolate Group Encyclopedia Article

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The enol **functional group** is -CCOH, with a double bond between the two **carbon** atoms. Compounds containing this group are enols, and their conjugate bases--the -C=COH anion--are enolates. This arrangement is also present in phenols and some of the characteristics of the enols are the same as those of the phenols. The **hydrogen atom** in the **alcohol** group (OH) is acidic in nature and is replaceable by **metals**. It can also be replaced by a carboxylic acid.

The enol form of a **molecule** is often found in equilibrium with the appropriate ketone form. This is tautomerism, where two isomers exist in dynamic equilibrium with each other. This tautomerism is brought about by the reversible move of one hydrogen atom. Most often, the ketone is the much more stable of the two tautomers. **Nucleic acids** also contain heterocyclic structures capable of this tautomerism, and can exist in the enol form, although they are normally found as the ketone form. The enol form can have different characteristics due to the presence of the alcohol group and an extra double bond in the main structure. A phosphorylated enol functional group is found in the compound phosphoenol pyruvate, an important intermediate in the glycolysis biochemical pathway. Phosphoenol pyruvate is made by the catalytic action of the enzyme enolase, and is used in turn to transfer its phosphate group to the nucleotide adenosine diphosphate (ADP), synthesizing the triphosphate- containing nucleotide adenosine triphosphate (ATP).

Enols are the tautomeric isomers of certain **ketones** Enolates are the conjugate bases of enols and are important intermediates in both synthetic and biosynthetic chemistry, where the act as nucleophiles in many different substitution reactions..