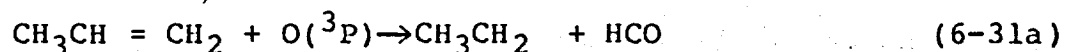


although most of the potential paths have been delineated.

The reaction of olefins with atomic oxygen plays a minor role in olefin consumption and radical and product formation.

Again, for propylene the reaction is:



The mechanism of photooxidation of aromatic species in the atmosphere is perhaps the area of greatest uncertainty in atmospheric hydrocarbon chemistry. The principal reaction of aromatics is with the hydroxyl radical.<sup>14,15</sup> For aromatic-OH reactions, the initial step can be either addition to or abstraction from the aromatic ring.<sup>103</sup> The free radical addition products may then react, most likely with either O<sub>2</sub> or NO<sub>2</sub>, leading to the cresols or nitrotoluenes, respectively. The abstraction route probably leads to benzaldehyde. The mechanism of aromatic-hydroxyl radical reactions is yet to be clarified.

Aldehydes, both aliphatic and aromatic, occur as primary and secondary pollutants and are direct precursors of free radicals in the atmosphere.<sup>16</sup> Consequently, aldehyde chemistry represents an important subject area in atmospheric chemistry. Although aldehydes are the main oxygenated hydrocarbons generally considered with respect to their role in atmospheric chemistry, other classes of oxygenated hydrocarbons, such as ketones, esters, ethers and alcohols, are present and participate to a somewhat lesser extent. Major secondary sources of