organic species and the free radicals cited above. The reactions of typical hydrocarbon species are now discussed briefly. Throughout the discussion references to more extensive coverages are given.

The most important atmospheric reaction involving alkanes is with the HO radical. For n-butane, for example, the reaction is

 $\begin{array}{rcl} CH_3CH_2CH_2CH_3 \ + \ HO & \longrightarrow CH_3CH_2CH_2CH_2 \ \ + \ H_2O & (6-26a) \\ & and \\ & \longrightarrow CH_3CH_2CHCH_3 \ \ + \ H_2O & (6-26b) \end{array}$ The alkyl radicals will rapidly add O₂ to form the corresponding peroxyalkyl radicals, e.g.

 $CH_3CH_2CH_2CH_2 + O_2 + M \rightarrow CH_3CH_2CH_2O_2 + M$ (6-27) (subsequently the third body M will not be indicated). A reaction of substantially lesser importance is with oxygen atoms,

 $\begin{array}{cccc} CH_{3}CH_{2}CH_{2}CH_{3} + O({}^{3}P) & \stackrel{O_{2}}{\rightarrow} HO & + CH_{3}CH_{2}CH_{2}CH_{2}O_{2} & (6-28a) \\ and & & & \\ O_{2} & & & & \\ O_{2} & & & & \\ O_{3}CH_{2}CH_{2}CHCH_{3} & & (6-28b) \end{array}$

The importance of both the HO and O(^{3}P) reactions with alkanes is the generation of the peroxyalkyl radical RO₂, which plays a substantial role in the conversion of NO to NO₂. Rate constants for alkane reations are summarized by Baulch et al.⁹

The atmospheric chemical reactions involving olefins have been widely studied.4,5,10 The most important reactions

IEEIT

DECIN

Test

LIEST.