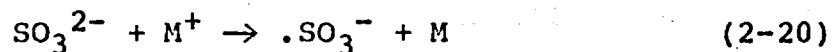


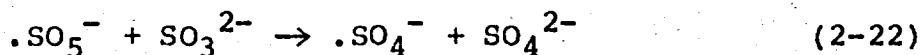
2.3.4.1 S(IV)-O₂ - H₂O System-- The simple S(IV) - O₂ auto-oxidation has been the subject of numerous investigations, most of which are listed in Table 2-5. The mechanism for the auto-oxidation is not firmly established. However, the behavior of the system is best explained as a modification to the scheme of Bäckström (1934), taking into account the recent results of Schmidkunz (1963) and Hayon et al. (1972):

Chain initiation

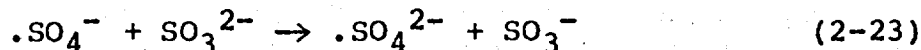


(M⁺ = trace concentration of metal ion or reactive wall)

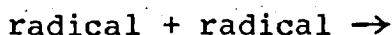
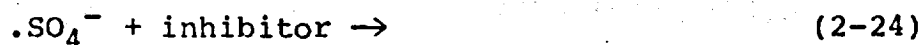
Chain propagation



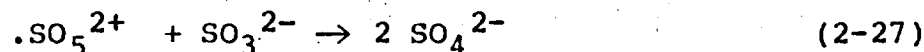
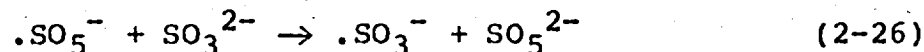
Oxidation



Termination



Brimblecombe and Speeding (1947b) propose an alternative scheme that does not include the $\cdot\text{SO}_4^-$ radical-ion; in their scheme, equation (2-22) is replaced by:



and equation (2-24) is absent.

Hegg and Hobbs (1978) have discussed most of the investigations identified in Table 2-5, and they summarized