

5. Assumed that Fe(III) mass concentration = 2 ug/m^3 ;
also, the Fe(III) is assumed to be uniformly dissolved
in the liquid water of the aerosol ($[\text{Fe(III)}] = 0.9 \text{ M}$).
Rate calculation used the expression of Neytzell-de
Wilde and Taverner (1958); see Table 2-9.
6. Assumed that C mass concentration = 10 ug/m^3 and behaves
as the soots studied by Chang et al. (1979), whose
expression was used for this calculation (Equation
2-32).
7. Rate calculation was based on Equation 2-35.
8. Rate calculation was based on Equation 2-39.

For this comparison, it has been assumed that the SO_2
concentration is 10 ppb for all of the reactions, and that
the liquid water content of the aerosol is $50 \times 10^{-12} \text{ m}^3/\text{m}^3$.

The gas-phase rates have been calculated based on the
discussion material presented in Section 2.3.3.2. The aqueous-
phase rates have been calculated based on the discussion
material presented in Sections 2.3.4.2-4. Several of the
assumptions made do not have any basis, namely:

1. The ambient mass concentration of 20 ng/m^3 for Mn is
reasonable, but: (a) it is not known if the predominant form
is Mn(II), and (b) it is unlikely that Mn is uniformly
distributed and dissolved.

2. Likewise, the ambient concentration of 2 ug/m^3 for
Fe is reasonable, but: (a) it is not known if Fe(III) is the
predominant form, and (b) it is unlikely that Fe is uniformly
distributed and dissolved.