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Supplement of

Chemistry and mineralogy of clay minerals in Asian and Saharan dusts and the implications for iron supply to the oceans

G. Y. Jeong and E. P. Achterberg

Correspondence to: G. Y. Jeong (jearth@anu.ac.kr)

Supplementary Table 1. General chemical formulas of minerals in the Asian and Saharan dusts identified by TEM analysis.

Mineral	Chemical formula
Phyllosilicates	
Illite*	$K_{0.8}(Al,Fe,Mg)_2(Si_{3.5}Al_{0.5})O_{10}(OH)_2$
Smectite*	$Ca_{0.1-0.3}(Al,Mg,Fe)_2(Si_{3-4}Al_{0-1})O_{10}(OH)_2 \cdot nH_2O$
Vermiculite*	$Ca_{0.3-0.5}(Mg,Fe,Al)_3(Si_3Al)O_{10}(OH)_2 \cdot nH_2O$
Chlorite*	$(Mg,Fe,Al)_6(Si_3Al)O_{10}(OH)_8$
Kaolinite	$Al_2Si_2O_5(OH)_4$
Muscovite	$KAl_2(Si_3Al)O_{10}(OH)_2$
Biotite*	$K(Fe,Mg,Al)_3(Si_3Al)O_{10}(OH)_2$
Other silicates	
Quartz	SiO_2
Plagioclase*	$(Ca,Na)Al_{1-2}Si_{2-3}O_8$
K-feldspar	$KAlSi_3O_8$
Amphibole*	$Ca_2(Fe,Mg)_5AlSi_7O_{22}(OH)_2$
Epidote	$Ca_2(Al,Fe)_3(SiO_4)_3(OH)$
Palygorskite	$(Mg,Al)_2Si_4O_{10}(OH) \cdot 4H_2O$
Non-silicates	
Calcite	$CaCO_3$
Gypsum	$CaSO_4 \cdot 2H_2O$
Goethite	$FeO(OH)$
Magnetite	$Fe^{2+}Fe^{3+}_2O_4$
Hematite	Fe_2O_3

*Representative chemical formulas. They have a range of compositional variation due to ionic substitution.