



Thermodynamic and kinetic stability

Reaction rates; magnitudes

Typical rates of substitution of water on metal ions

$11 > \log(k \cdot s) > 8$	$8 > \log(k \cdot s) > 4$	$4 > \log(k \cdot s) > 0$	$-3 > \log(k \cdot s) > -6$
$\text{Cs}^+, \text{K}^+, \text{Na}^+, \text{Li}^+$			
$\text{Ba}^{2+}, \text{Ca}^{2+}$	Mg^{2+}	Be^{2+}	
	In^{3+}	$\text{Ga}^{3+}, \text{Al}^{3+}$	
La^{3+}	$\text{Sc}^{3+}, \text{Y}^{3+}$		
$\text{Sm}^{3+}, \text{Ce}^{3+}$	$\text{Lu}^{3+}, \text{Dy}^{3+}$		
$\text{Cr}^{2+}, \text{Cu}^{2+}$	$\text{Mn}^{2+}, \text{Fe}^{2+}, \text{Co}^{2+}$	$\text{Ni}^{2+}, \text{V}^{2+}$	Cr^{3+}
$\text{Hg}^{2+}, \text{Cd}^{2+}$	Zn^{2+}		$\text{Pt}^{2+}, \text{Co}^{3+}, \text{Ir}^{3+}$