

Abbreviations, symbols and conventions

Abbreviations

BCW	Boom Clay pore Water
EDX	Energy Dispersive X-ray
EG/BS	Extension Gallery / Bottom Shaft piezometer
EXAFS	Extended X-ray Absorption Fine Structure spectroscopy
HA	Humic Acids
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
MWCO	Molecular Weight Cut Off
NEA-TDB	Nuclear Energy Agency Thermodynamic DataBase
PEC	Proton Exchange Capacity
SBCW	Synthetic Boom Clay pore Water
SEM	Scanning Electron Microscopy
SHE	Standard Hydrogen Electrode
TOC	Total Organic Carbon
TIC	Total Inorganic Carbon
URL	Underground Research Laboratory
XANES	X-ray Absorption Near Edge Spectroscopy
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

Symbols and units

[]	Concentration in mol·l ⁻¹
β^{exp}	Conditional complexation constant
μm	Micrometer 1 μm = 10 ⁻⁶ m
Å	Ångström 1 Å = 10 ⁻¹⁰ m
atm	1 atmosphere = 760 Torr = 1.01325 bar = 1.01325×10 ⁵ Pa
E _h	Redox potential, referred to the standard hydrogen electrode
I	Ionic strength
K _d	Distribution coefficient
M	Molarity (mol·l ⁻¹)
pCO ₂	Partial pressure of CO ₂
ppb	Part per billion
ppm	Part per million
R _a	Distribution ratio normalised to the surface area of the solid phase
R _d	Distribution ratio
S _A	Surface area
U(IV)	Uranium 4+
U(VI)	Uranium 6+
wt. %	Weight percent

Convention

In the literature, the hydrated and poorly crystallised U(IV) oxide is defined either as U(IV) hydrous oxide - UO₂·xH₂O – or as U(IV) amorphous oxide - UO₂(am). Both terms are considered as synonyms.