

Gradient analyses**Fixed data**

Temperature (°C)	0 – 130	25
Salinity (g L ⁻¹)	0 – 40	545 mmol kg ⁻¹
Pressure (MPa)	0 – 120	26 [#]
pH	0 – 12	7
Total sulfide concentration (mM)	0 – 10	0
Total sulfate concentration (mM)	0 – 30	28

[#]The average depth of mid-ocean ridges is 2600m; we set the pressure at 26 MPa because it corresponds to the hydrostatic pressure at this depth