28. Biogeochemistry of Barium
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Part.Ba.Part.Sr}

Particulate Barium

During the north-south transects along 6° W total suspended matter samples were taken at
every 2 degrees of latitude for particulate Ba-barite determination. The upper 600m of water
column were sampled to document on the mesopelagic accumulation of Ba-barite.

Sampling

Depths were -10, -50, -100, -150, -200, -250, -300, -350, -425, -500 and -600m. Between 10
and 20 l seawater were filtered under pressure on Nuclepore membranes of 0.4 µm porosity. After
filtration filters were rinsed with about 10 ml of Milli-Q type water and dried at 50 °C. They were then
stored in plastic petri dishes at room temperature for further analysis in the home laboratory.

Determination of Barium

Filter samples are transfered to platinum crucibles. After careful combustion of the Nuclepore
substrate and of the organic matter at ~ 400 °C, the remaining particulate matter is fused for 1 hour at
1100 °C with LiBO₂ as the flux. The fused pearl is redissolved in 4% hot nitric acid. This solution is
brought to 10 ml volume. The analysis is carried out by inductively coupled plasma optical emission
spectrometry (ICP-OES). Other elements such as Ca, Sr, Si and Al are analysed simultaneously.