Dissolved Aluminum – values in nmol/kg
Consensus values (± 1 std. dev.) for North Atlantic GEOTRACES Reference Samples as of May 2013

GEOTRACES GS = 27.5 ± 0.2 nmol/kg

GEOTRACES GD = 17.7 ± 0.2 nmol/kg

These are considered to be the consensus values for the GEOTRACES Reference Samples as of May 2013.

Labs participating in the analysis of the North Atlantic GEOTRACES reference samples to determine a consensus value for dissolved Al :

Rob Middag/Hein de Baar (NIOZ, Netherlands):
Flow Injection method using an IDA Toyopearl AF-Chelate resin with fluorometric detection based upon the method published by Brown and Bruland (2008) with only one modification in the chemicals - the use of plain MQ for the rinse instead of the buffer described in the Brown and Bruland (2008) paper.

Matt Brown/Ken Bruland (UCSC, U.S.):
Flow Injection method using an IDA Toyopearl AF-Chelate resin with fluorometric detection - Brown and Bruland (2008). The one modification to the published method is to switch from using the homemade resin columns to Global FIA columns.

Yoshiki Sohrin (U. Kyoto, Japan):
Off line concentration using the Nobias PA1 EDTri-A-type chelating resin with subsequent analyses by ICP-MS using the method of Sohrin et al. (2008).

Jingling Ren (Oceans University, China):
Solvent extraction with fluorometric detection – based upon Zhang et al. (2000).
The method used for the measurement of dissolved Al is an improved fluorometric method after extracting the Al-Lumogallion complex into two aliquots of n-hexanol, with a concentration factor of 5. The major differences with the original method of Hydes & Liss (1976) were improving the sensitivity by extraction and overcoming interferences from fluoride and iron at the same time.

Maeve Lohan and (Plymouth Univ. U.K.):
Batch method with lumogallion and fluorometric detection.

Clare Johnson, Richard Abell, Tim Brand (Scottish Assn for Marine Science, Scotland)
Batch method with lumogallion and fluorometric detection (Hydes and Liss, 1976).

References:

1. Brown, M.T. and K.W. Bruland. An improved flow injection analysis method for the determination of dissolved aluminum in seawater. *Limnology & Oceanography: Methods,* **6**: 87-95 (2008).
2. Sohrin, Y., S. Urushihara, S. Nakatsuka, T. Kono, E. Higo, T. Minami, K. Norisuye, and S. Umetani. Multielemental determination of GEOTRACES key trace metals in seawater by ICP-MS after preconcentration using an ethylenediaminetriacetic acid chelating resin. *Analytical Chemistry*, **80**: 6267-6273 (2008).
3. Zhang, J., H. Xu and J.L. Ren. Fluorimetric determination of dissolved aluminum in natural waters after liquid-liquid extraction into n-hexanol. *Analytica Chimica Acta*, **405**: 31-42 (2000).