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

SAFe S = 1.67 ± 0.10 nmol/kg

SAFe D2 = 1.03 ± 0.09 nmol/kg

SAFe D1 = 0.62 ± 0.03 nmol/kg

These are considered to be the consensus values for the SAFe Reference Samples as of May 2013. These concentrations are low relative to what is observed in the Atlantic Ocean, but are appropriate for the Pacific.

The SAFe D1 value is lower than the SAFe D2 reference sample (the D1 sample was aliquoted from an unacidified tank and then subsequently acidified in the 0.5 L bottles, while the D2 tank was acidified and mixed prior to aliquoting into the 0.5 L bottles).

Labs participating in the analysis of the SAFe 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 an EDTA-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 were improving the sensitivity by extraction and overcoming interferences from fluoride and iron at the same time.

Jay Cullen/Tim Giesbrecht (Univ. of Victoria, Canada):
Flow injection using the method of Brown and Bruland (2008).

Clare Johnson (Scottish Marine Institute, Scotland):

The lumogallion method of 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).