Notes on the function gsw_SA_from_rho_t_exact(rho,t,p)

This function, **gsw_SA_from_rho_t_exact**(rho,t,p) calculates (using a "modified Newton-Raphson" iteration procedure of McDougall and Wotherspoon (2014)) the Absolute Salinity S_A corresponding to the input values of *in situ* density, *in situ* temperature, and pressure. Note that the density input is not density anomaly, that is, it has not had 1000 kg m^{-3} subtracted from it.

This function uses the full TEOS-10 Gibbs function $g(S_A, t, p)$ of IOC *et al.* (2010), being the sum of the IAPWS-09 and IAPWS-08 Gibbs functions.

One use for this function is in the laboratory where a measured value of the *in situ* density ρ of a seawater sample may have been made at the laboratory temperature t and at atmospheric pressure p. The present function will return the Absolute Salinity S_A of this seawater sample.

References

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