

Notes

In Sect. 1, some previously unpublished details of the substitution method used are described that concern both the substitution densimeter itself and the preparation of the water reference. Although these topics were addressed in the discussion and found to be worthy of mention, they relate to our article on the substitution method³ and are beyond the scope of this article, wherefore they are found here.

In Sect. 2, the data used to develop and validate the density–salinity relation is tabulated. For practicability, an .mht- and an .xlsx-file containing the data are attached to this supplement. Uncertainties are given either as combined uncertainties, u , with corresponding degrees of freedom, or as uncertainties for a probability of 95.45 %, U , in accordance with the JCGM ‘Guide to the Expression of Uncertainty in Measurement’ of 2008.

³ Schmidt, H., Wolf, H., and Hassel, E.: A method to measure the density of seawater accurately to the level of 10^{-6} , *Metrologia*, 53, 770–786, doi:10.1088/0026-1394/53/2/770, 2016.

Previously unpublished details related to ‘A method to measure the density of seawater accurately to the level of 10⁻⁶’

Impact of heavy isotope enrichment on density caused by evaporation

Ultrapure water was used as a density reference in the substitution measurements. To remove the air dissolved in it, it was boiled without refeeding the vapour. Since the frequency of the (heavy) isotopes deuterium, oxygen-17, and oxygen-18 is higher in the liquid than in the vapour, heavy isotopes accumulate in the liquid during evaporation, thereby increasing the water density. By a simple theoretical approach, the impact on the water density is quantified. The results suggest that the water density changes insignificantly in moderate boiling and, additionally, that evaporation at low temperatures causes higher density changes than evaporation at high temperatures.

If a flask contains a very small vapour (v) compared to a liquid phase (l) each consisting of water, and the water contains ¹H and ²H, or D, atoms and ¹⁶O, ¹⁷O, and ¹⁸O atoms, then the frequency of these atoms in the liquid and vapour is different. The frequency of an isotope in the liquid relative to that in the vapour is described by means of the isotopic fractionation factor α , which is for deuterium:

$$\alpha_D = \frac{n_D^l/n_H^l}{n_D^v/n_H^v},$$

where n is the amount-of-substance. For example, n_D^l is the amount-of-substance deuterium in the liquid. The fractionation factor is temperature-dependent⁴.

If a very small amount is repeatedly removed from the vapour at very long intervals, some molecules from the liquid „vaporize“ at (almost) constant temperature. The infinitesimal changes in the H- and D-amount-of-substance in the liquid and vapour are then linked by $dn_D^v = -dn_D^l$ and $dn_H^v = -dn_H^l$. For the ratio D to H of the vapour, it follows that $n_D^v/n_H^v \approx dn_D^l/dn_H^l$. Inserting this formula into above formula, transforming and integrating from the beginning (I) to the end of vaporization (II) results in:

$$\frac{n_D^{II}}{n_D^I} = \alpha_D \sqrt{\frac{n_H^{II}}{n_H^I}},$$

where all amount-of-substances refer to the liquid.

The isotopic composition of deuterium and oxygen-18 in water is given by isotopic abundances relative to VSMOW, δ_D and δ_{18} , see article. The use of the isotopic abundance instead of the amount-of-substance in above formula yields:

$$\frac{\delta_D^{II} + 1}{\delta_D^I + 1} = \left(\frac{n_H^{II}}{n_H^I} \right)^{\frac{1-\alpha_D}{\alpha_D}}.$$

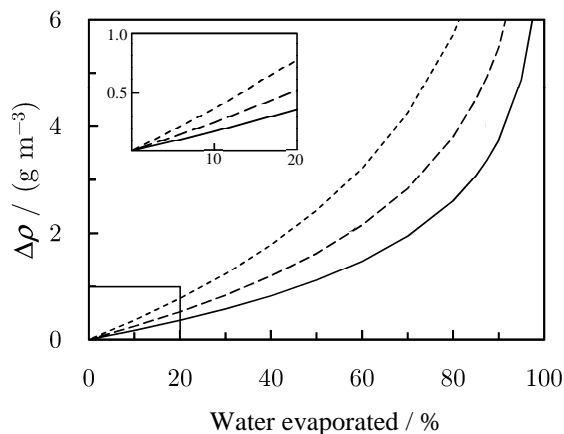
For oxygen the formula is similar.

⁴ Horita, J. and Wesolowski, D. J.: Liquid-vapor fractionation of oxygen and hydrogen isotopes of water from the freezing to the critical temperature, *Geochimica et Cosmochimica Acta*, 58, 16, 3425–37, doi:10.1016/0016-7037(94)90096-5, 1994.

The density change caused by the accumulation of deuterium, oxygen-17 and -18 can be calculated using the formula of Girard and Menaché⁵ that is given in appendix A of the article.

The change in density of water caused by boiling is shown in the figure below. If 10 % of the liquid water vaporize in boiling, then the density increases by a maximum of 0.3 g m^{-3} independent of the temperature, thereby suggesting that, in moderate boiling, heavy isotopes accumulate insignificantly in the liquid in terms of the density uncertainty of 2 g m^{-3} .

Figure. Density increase of water, $\Delta\rho$, due to isotope enrichment during boiling. Calculated curves for vapourization into a pure water vapour phase at 20 °C (---), 60 °C (—) and 100 °C.



Impact of glass dissolution on water density caused by boiling in a borosilicate flask

The ultrapure water used as water reference in the substitution measurements was boiled for degassing in a 1 L-Duran borosilicate glass flask. A test of the hydrolytic resistance of Duran according to ISO 719, in which 2 g glass powder with a grain diameter of 0.4 mm to 0.6 mm is exposed to 50 mL of water at 98 °C, results in a sodium molality of 0.1 nmol kg^{-1} after 1 hour⁶. If this molality is converted from the glass powder surface to the Duran flask surface, then this results in a density increase $\ll 0.1 \text{ g m}^{-3}$. Since ISO 719 test does not take into account the solubility of all glass components, it is sometimes considered insufficient⁷.

A different test of the hydrolytic resistance of 10 mL borosilicate glass ampoules with a composition of 75 % SiO_2 , 11 % B_2O_3 , 7 % Na_2O and 5 % Al_2O_3 at 121 °C yielded silicon molalities up to $6.4 \text{ } \mu\text{mol kg}^{-1}$ after 60 min⁸. If this molality is converted from the surface of the 10 mL glass flask to that the Duran flask, then a molality of $1.4 \text{ } \mu\text{mol kg}^{-1}$ results corresponding to an increase in density of 0.08 g m^{-3} . Other borosilicate glass ampoules containing 70 % SiO_2 , on the other hand, caused an increase in density of only 0.04 g m^{-3} . A linear SiO_2 -amount-of-substance dependence suggests an increase

⁵ Girard, G. and Menaché, M.: Variation de la masse volumique de l'eau en fonction de sa composition isotopique, *Metrologia*, 7, 83–87, doi:10.1088/0026-1394/7/3/001, 1971.

⁶ SCHOTT AG: Technical glasses – Physical and technical properties, Mainz, Germany, 08150.05 kn/sei, http://www.schott.com/d/epackaging/2fbc7180-e37c-4209-9eec-617ad9208e51/1.0/18.11.15_final_schott_technical_glasses_row.pdf, 2014.

⁷ Bach, H. and Krause, D. (Eds.): Analysis of the composition and structure of glass and glass ceramics, Ed. 1, Springer, doi: 10.1007/978-3-662-03746-1, 1999.

⁸ Bohrer, D., Bortoluzzi, F., Nascimento, P. C., Carvalho, L. M. and Ramirez, A. G.: Silicate release from glass for pharmaceutical preparations, *International Journal of Pharmaceutics*, 355, 174–183, doi:10.1016/j.ijpharm.2007.12.025, 2008.

in density of 0.16 g m^{-3} for Duran (with 80 % SiO_2). The glass dissolution increases exponentially with temperature⁹, so that, after conversion to the water boiling temperature of 100°C , a density increase of $< 0.1 \text{ g m}^{-3}$ is yielded for the water that, for degassing, was boiled in the 1 L-Duran flask. This shows that the increase in density can be neglected, but also that the water must not boil much longer in borosilicate flasks, because otherwise its density increases significantly compared to the density uncertainty of 2 g m^{-3} .

Impact of a densimeter zero-drift on the accuracy of a seawater substitution density

Any densimeter tends to drift significantly sooner or later, wherefore regular calibration and appropriate adjustment is necessary to yield consistent results. Vibrating-tube densimeters (VTDs) are quick-adjusted using air and water. The drift of a vibrating tube made of glass can be different for air and water. Therefore, the drift is not completely corrected, if seawater substitution measurements are conducted using a water reference. A theoretical approach is used to quantify the zero-drift impact on the (seawater) substitution density, which is similar to that for air. The results suggest that the deviation in the substitution density is insignificant, if the densimeter is adjusted regularly.

The VTD used in the substitution measurements is a DMA 5000 M that is adjusted by the manufacturer. The standards used for this purpose are multiple reference fluids (including air and water), whereof the density and viscosity are known, respectively. A quick-adjustment is provided to the customer using air and water. We performed a quick-adjustment before any substitution measurement.

For the calculation of air density, the formula given by Spieweck and Bettin¹⁰ for a relative humidity of 50 % is used by the internal firmware of the device¹¹. The air pressure is either measured by an internal barometer or provided by the customer. We used an external high precision barometer that was calibrated to provide the air pressure. The DMA 5000 M manual¹¹ also contains data tables. The formula given by Spieweck and Bettin deviates significantly less than 1 g m^{-3} for 20°C and 50 %rh from the recent formulation of air density CIPM-2007¹². A change in relative humidity of 10 % at 20°C changes the air density by 1 g m^{-3} .

The impact of a densimeter zero-drift, or deviation in air density, on the substitution density can be estimated using the formula:

$$\Delta\rho_{\text{SW}} = (1 - \gamma) \cdot \Delta\rho_{\text{A}} + \gamma \cdot \Delta\rho_{\text{H}_2\text{O}} \quad \text{with } \gamma = (\rho_{\text{SW}} - \rho_{\text{A}}) / (\rho_{\text{H}_2\text{O}} - \rho_{\text{A}}),$$

where ρ_{A} and $\Delta\rho_{\text{A}}$ are the air reference density and deviation therefrom (ref. minus meas.), $\rho_{\text{H}_2\text{O}}$ and $\Delta\rho_{\text{H}_2\text{O}}$ are the water reference density and deviation therefrom (ref. minus meas.), and $\Delta\rho_{\text{SW}}$ is the difference between substitution and measured seawater density (subs. minus meas.).

The idea behind the formula is illustrated in (and may be derived from) the figure below.

⁹ Hunter, F. M. I., Hoch, A. R., Heath, T. G. and Baston, G. M. N., Review of glass dissolution models and application to UK glasses, AMEC, Didcot, UK, web:<https://rwm.nda.gov.uk/publication/review-of-glass-dissolution-models-and-application-to-uk-glasses/?download>, 2015.

¹⁰ Spieweck, F. and Bettin, H.: Review – Solid and liquid density determination, Technisches Messen 7/8, 1992, p. 291.

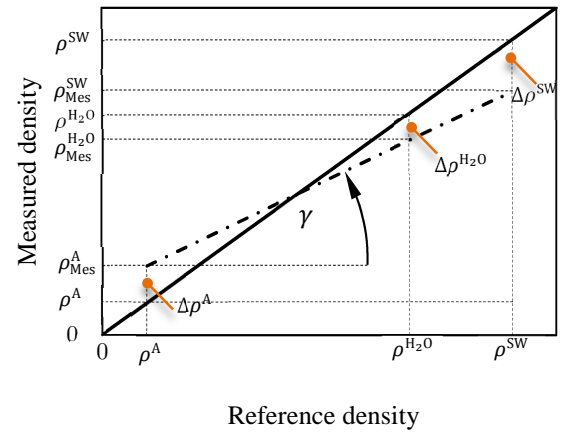
¹¹ Anton Paar GmbH: Manual – DMA 4100, DMA 4500 M, DMA 5000 M, Firmware-Version: V2.20, 18th January 2012.

A more recent manual (in English) may be obtained using the link (after registration):

<https://www.anton-paar.com/?eID=documentsDownload&document=5471&L=1>

¹² Picard, A., Davis, R. S., Gläser, M. and Fujii, K.: Revised formula for the density of moist air (CIPM-2007), Metrologia, 45, 149–155, doi:10.1088/0026-1394/45/2/004, 2007.

Figure. Linear characteristic curve of an ideal densimeter (—) and of a densimeter with a zero-offset (— · —).



A maximum deviation in air density of 20 g m^{-3} (ref. minus meas.) without a deviation in water density causes a non-considered deviation in the substitution density of seawater with salinity 35 of 0.5 g m^{-3} . If, additionally, there is a maximum deviation in water density of -10 g m^{-3} (in the opposite direction), then a non-considered deviation in the substitution density of 0.8 g m^{-3} results. However, we never saw such deviations during our substitution measurements. Additionally, such deviations are random, and are therefore considered in the repeatability of a substitution measurement, which for our measurements at atmospheric pressure was 1 g m^{-3} . Therefore, the impact is negligible, provided that the densimeter is regularly quick-adjusted by the user, which is usual in a well-managed lab.

Impact of U-tube-input assembly on the seawater density

Measuring the density not using the substitution method. Shortly after a quick-adjustment, even if the densimeter was filled manually using syringes that were directly and coarsely connected to the inlet of the oscillating U-tube, we never observed deviations $> \pm 5 \text{ g m}^{-3}$. The inlet may be mechanically decoupled to avoid such deviations.

Measuring the density using the substitution method (and a permanent filling installation). Such impacts are eliminated, as the impact on the measurement of water and seawater density is identical and no parts are being moved during the measurements. The density is determined from the oscillation frequency and has to be corrected for damping effects that are caused by the friction between fluid layers due to viscosity. To correct for this effect, the first harmonic oscillation frequency is used by the firmware¹³. The impact of the input assembly on density measurement therefore has to be considered before this background. Frankly speaking, the damping-corrected density has to be used instead of the non-damping-corrected density. Using the non-damping-corrected density in a substitution measurement of seawater can cause the density being measured too high by up to 10 g m^{-3} , if syringes are used for filling, and 2 g m^{-3} to 3 g m^{-3} , even if a permanent installation is used for filling, as damping effects force the base frequency being too low, i.e. the oscillation period too long, thereby pretending a higher density.

¹³ Stabinger, H.: Density measurement using modern oscillating transducers, South Yorkshire Trading Unit, Sheffield, 1994.

Impact of densimeter inclination on the seawater substitution density

The impact of a (post-adjustment) densimeter inclination on the measurement density is 1.82 g m^{-3} per 1° . Apart from the fact that the DMAs used to measure the seawater density were set up on fixed straight surfaces, such deviations are corrected by the substitution method. If a DMA is used without the substitution method, it can also be quick-adjusted at an inclination and then used afterwards. The decisive factor is that the inclination does not change between adjustment and measurement. This may be a problem in measurements aboard ship.

Avoidance of oil diffusion into the U-tube of the DMA HP during measurements at high pressure

In the substitution densimeter for high pressures, oil is used to prevent corrosion of the pressure sensors. For reasons of accuracy, no pressure diaphragm was used. Oil and water were therefore in direct contact.

Oil and water are not miscible, so there is always a phase boundary between both liquids. The phase boundary is reinforced, as the capillary tube in that both liquids meet has a small diameter of 1.6 mm. The density of the oil is lower than that of the water. Advantage was taken of that by installing the density measurement part at a lower level than the pressurization part that is filled with oil, thereby preventing convection downwards (into the DMA).

After each substitution measurement, the filling line was rinsed with ethanol and water and thoroughly dried using filtered dry air, thereby removing any oil that may stick to and creep on the inner tube wall, as such oil remains can disturb a clean replacement of seawater by water and vice versa. If, nonetheless, there is such a disturbance, this was seen in an increase in the water density or decrease in the seawater density measured, provided a measurement series is conducted, i.e. water – seawater – water – seawater – ... – water. For the high pressure measurements, we performed usually 5 repeated substitution measurements per temperature-pressure density point, i.e. 11 liquid replacements (water was always first and last); obeying the cleaning routine, replacement of liquids that were accompanied by impurities never occurred.

Data related to ‘The density–salinity relation of standard seawater’

Sect. 2 & 3

Density for atmospheric pressure

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)					Density change due to storage (salt composition)					Density correction due to measurement (air saturation)					Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)		
—	S	$u(S)$	$\frac{dp}{dS}$	$u(p)$	v	T	p	—	$\rho_{\text{sub,sub}}$	u	v_{eff}	$\Delta\rho_{\text{sw,sub}}$	u	v_{eff}	$\Delta\rho_{\text{sw,prep}}$	$\Delta\rho_{\text{sw,sub}}$	u	v_{eff}	$\Delta\rho_{\text{sw,salt}}$	u	v_{eff}	$\Delta\rho_{\text{sw,air}}$	u	v_{eff}	S	T	p	ρ_{sw}	u	v_{eff}					
—	—	—	kg m ⁻³	kg m ⁻³	—	°C	MPa	—	kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	—	°C	MPa	kg m ⁻³	kg m ⁻³	—					
2011-10	4.9958	0.0002	0.79	0.0002	4	5	0.101325	2014-05	1003.9370	0.0008	60	0.0033	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0016	0.0001	∞	-0.0010	0.0002	∞	5	5	0.101325	1003.9395	0.0009	79					
2011-10	4.9958	0.0002	0.78	0.0002	4	10	0.101325	2014-11	1003.5999	0.0008	60	0.0033	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0019	0.0002	∞	-0.0006	0.0002	∞	5	10	0.101325	1003.6026	0.0009	80					
2011-10	4.9958	0.0002	0.77	0.0002	4	15	0.101325	2014-05	1002.9437	0.0008	60	0.0032	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0016	0.0001	∞	-0.0003	0.0002	∞	5	15	0.101325	1002.9470	0.0009	78					
2011-10	4.9958	0.0002	0.76	0.0002	4	20	0.101325	2014-08	1001.9989	0.0008	60	0.0032	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0017	0.0002	∞	0.0000	0.0000	∞	5	20	0.101325	1002.0022	0.0009	71					
2011-10	4.9958	0.0002	0.75	0.0002	4	25	0.101325	2014-05	1000.8038	0.0008	60	0.0031	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0016	0.0001	∞	0.0002	0.0002	∞	5	25	0.101325	1000.8074	0.0009	78					
2011-10	4.9958	0.0002	0.74	0.0002	4	30	0.101325	2014-08	999.3709	0.0008	60	0.0031	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0017	0.0002	∞	0.0003	0.0002	∞	5	30	0.101325	999.3744	0.0009	79					
2011-10	4.9958	0.0002	0.74	0.0002	4	35	0.101325	2014-05	997.7317	0.0008	60	0.0031	0.0000	∞	-0.0021	-0.0003	0.0002	∞	0.0016	0.0001	∞	0.0004	0.0002	∞	5	35	0.101325	997.7355	0.0009	78					
2011-03	9.9887	0.0003	0.79	0.0002	6	5	0.101325	2014-09	1007.8874	0.0009	70	0.0089	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	0.101325	1007.8944	0.0009	98					
2011-03	9.9887	0.0003	0.78	0.0002	6	10	0.101325	2014-11	1007.4827	0.0009	70	0.0088	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0006	0.0002	∞	10	10	0.101325	1007.4899	0.0009	99					
2011-03	9.9887	0.0003	0.77	0.0002	6	15	0.101325	2014-10	1006.7688	0.0009	70	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0003	0.0002	∞	10	15	0.101325	1006.7764	0.0009	98					
2011-03	9.9887	0.0003	0.76	0.0002	6	20	0.101325	2014-09	1005.7779	0.0009	70	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	0.0000	0.0000	∞	10	20	0.101325	1005.7856	0.0009	90					
2011-03	9.9887	0.0003	0.75	0.0002	6	25	0.101325	2014-09	1004.5416	0.0009	70	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0002	0.0002	∞	10	25	0.101325	1004.5494	0.0009	98					
2011-03	9.9887	0.0003	0.74	0.0002	6	30	0.101325	2014-09	1003.0796	0.0009	70	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0003	0.0002	∞	10	30	0.101325	1003.0875	0.0009	98					
2011-03	9.9887	0.0003	0.74	0.0002	6	35	0.101325	2014-09	1001.4099	0.0009	70	0.0083	0.0000	∞	-0.0017	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0004	0.0002	∞	10	35	0.101325	1001.4178	0.0009	98					
2011-10	14.9999	0.0002	0.79	0.0002	8	5	0.101325	2014-05	1011.8451	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0015	0.0001	∞	-0.0010	0.0002	∞	15	5	0.101325	1011.8438	0.0009	102					
2011-10	14.9999	0.0002	0.78	0.0002	8	10	0.101325	2014-11	1011.3736	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0017	0.0002	∞	-0.0006	0.0002	∞	15	10	0.101325	1011.3725	0.0010	104					
2011-10	14.9999	0.0002	0.77	0.0002	8	15	0.101325	2014-05	1010.6052	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0015	0.0001	∞	-0.0003	0.0002	∞	15	15	0.101325	1010.6047	0.0009	102					
2011-10	14.9999	0.0002	0.76	0.0002	8	20	0.101325	2014-08	1009.5695	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0016	0.0002	∞	0.0000	0.0000	∞	15	20	0.101325	1009.5691	0.0009	94					
2011-10	14.9999	0.0002	0.75	0.0002	8	25	0.101325	2014-05	1008.2930	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0015	0.0001	∞	0.0002	0.0002	∞	15	25	0.101325	1008.2929	0.0009	102					
2011-10	14.9999	0.0002	0.74	0.0002	8	30	0.101325	2014-08	1006.7974	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0016	0.0002	∞	0.0003	0.0002	∞	15	30	0.101325	1006.7973	0.0009	103					
2011-10	14.9999	0.0002	0.74	0.0002	8	35	0.101325	2014-06	1005.1035	0.0009	79	0.0001	0.0000	∞	-0.0014	-0.0003	0.0002	∞	0.0015	0.0002	∞	0.0004	0.0002	∞	15	35	0.101325	1005.1036	0.0009	102					
2011-10	20.0009	0.0003	0.79	0.0002	7	5	0.101325	2014-10	1015.7959	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0017	0.0001	∞	-0.0010	0.0002	∞	20	5	0.101325	1015.7933	0.0010	114					
2011-10	20.0009	0.0003	0.78	0.0002	7	10	0.101325	2014-11	1015.2609	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0018	0.0001	∞	-0.0006	0.0002	∞	20	10	0.101325	1015.2587	0.0010	114					
2011-10	20.0009	0.0003	0.77	0.0002	7	15	0.101325	2014-10	1014.4347	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0017	0.0001	∞	-0.0003	0.0002	∞	20	15	0.101325	1014.4329	0.0010	114					
2011-10	20.0009	0.0003	0.76	0.0002	7	20	0.101325	2014-10	1013.3558	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0017	0.0001	∞	0.0000	0.0000	∞	20	20	0.101325	1013.3542	0.0010	104					
2011-10	20.0009	0.0003	0.75	0.0002	7	25	0.101325	2014-10	1012.0405	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0017	0.0001	∞	0.0002	0.0002	∞	20	25	0.101325	1012.0391	0.0010	113					
2011-10	20.0009	0.0003	0.74	0.0002	7	30	0.101325	2014-09	1010.5130	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0017	0.0001	∞	0.0003	0.0002	∞	20	30	0.101325	1010.5117	0.0010	113					
2011-10	20.0009	0.0003	0.74	0.0002	7	35	0.101325	2014-09	1008.7942	0.0009	89	-0.0007	0.0000	∞	-0.0011	-0.0003	0.0002	∞	0.0016	0.0001	∞	0.0004	0.0002	∞	20	35	0.101325	1008.7931	0.0010	113					
2011-10	25.0047	0.0002	0.79	0.0002	17	5	0.101325	2014-05	1019.7509	0.0009	99	-0.0037	0.0000	∞	-0.0007	-0.0003	0.0002	∞	0.0013	0.0001	∞	-0.0010	0.0002	∞	25	5	0.101325	1019.7453	0.0010	124					
2011-10	25.0047	0.0002	0.78	0.0002	17	10	0.101325	2014-10	1019.1497	0.0009	99	-0.0037	0.0000	∞	-0.0007	-0.0003	0.0002	∞	0.0016	0.0001	∞	-0.0006	0.0002	∞	25	10	0.101325	1019.1443	0.0010	125					
2011-10	25.0047	0.0002	0.77	0.0002	17	15	0.101325	2014-04	1018.2751	0.0009	99	-0.0036	0.0000	∞	-0.0007	-0.0003	0.0002	∞	0.0013	0.0001	∞	-0.0003	0.0002	∞	25	15	0.101325	1018.2704	0.0010	123					
2011-10	25.0047	0.0002	0.76	0.0002	17	20	0.101325	2014-10	1017.1465	0.0009	99	-0.0036	0.0000	∞	-0.0007	-0.0003	0.0002	∞	0.0016	0.0001	∞	0.0000	0.0000	∞	25	20	0.101325	1017.1418	0.0010	115					
2011-10	25.0047	0.0002	0.75	0.0002	17	25																													

Density for high pressures

Salinity 5

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)			
–	<i>S</i>	<i>u(S)</i>	$\frac{d\rho}{dS}$	<i>u</i> (ρ)	<i>v</i>	<i>T</i>	<i>p</i>	–	$\rho_{SW,sub}$	<i>u</i>	<i>v</i>	$\Delta\rho_{SW}$	<i>u</i>	<i>v</i>	$\Delta\rho_{SW,prep}$	<i>u</i>	<i>v</i>	$\Delta\rho_{SW,stor}$	<i>u</i>	<i>v</i>	$\Delta\rho_{SW}$	<i>u</i>	<i>v</i>	<i>S</i>	<i>T</i>	<i>p</i>	ρ_{SW}	<i>u</i>	<i>v</i>	
			$\frac{kg}{m^3}$	$\frac{kg}{m^3}$		$^{\circ}C$	MPa			$\frac{kg}{m^3}$			$\frac{kg}{m^3}$			$\frac{kg}{m^3}$			$\frac{kg}{m^3}$			$\frac{kg}{m^3}$		$^{\circ}C$	MPa		$\frac{kg}{m^3}$	$\frac{kg}{m^3}$		
2011-10	4.9958	0.0002	0.79	0.0002	4	5	5.0	2014-09	1006.3104	0.0058	71	0.0033	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	5.0	1006.3128	0.0058	71	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	10.0	2014-09	1008.7060	0.0058	71	0.0033	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	10.0	1008.7083	0.0059	72	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	15.0	2014-09	1011.0763	0.0154	3414	0.0033	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	15.0	1011.0785	0.0154	3418	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	20.0	2014-09	1013.4212	0.0154	3444	0.0033	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	20.0	1013.4235	0.0154	3448	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	26.0	2014-09	1016.2007	0.0155	3480	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	26.0	1016.2030	0.0155	3483	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	33.0	2014-09	1019.3983	0.0155	3521	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	33.0	1019.4005	0.0155	3525	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	41.5	2014-09	1023.2149	0.0156	3570	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	41.5	1023.2171	0.0156	3573	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	52.0	2014-09	1027.8385	0.0156	3626	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	52.0	1027.8407	0.0156	3630	
2011-10	4.9958	0.0002	0.79	0.0002	4	5	65.0	2014-09	1033.4192	0.0157	3688	0.0031	0.0000	0	-0.0022	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0010	0.0002	0	5	65.0	1033.4214	0.0157	3692	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	5.0	2014-09	1005.9111	0.0058	71	0.0033	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0006	0.0002	0	5	5.0	1005.9137	0.0058	71	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	10.0	2014-09	1008.2423	0.0058	71	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0006	0.0002	0	5	10.0	1008.2449	0.0059	72	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	15.0	2014-09	1010.5477	0.0154	3414	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0006	0.0002	0	5	15.0	1010.5503	0.0154	3418	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	20.0	2014-09	1012.8315	0.0154	3444	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0006	0.0002	0	5	20.0	1012.8341	0.0154	3448	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	26.0	2014-09	1015.5428	0.0155	3480	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	-0.0006	0.0002	0	5	26.0	1015.5455	0.0155	3483	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	33.0	2014-09	1018.6603	0.0155	3521	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0019	0.0002	0	-0.0006	0.0002	0	5	33.0	1018.6629	0.0155	3525	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	41.5	2014-09	1022.3857	0.0156	3570	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0019	0.0002	0	-0.0006	0.0002	0	5	41.5	1022.3883	0.0156	3573	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	52.0	2014-09	1026.8948	0.0156	3626	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0019	0.0002	0	-0.0006	0.0002	0	5	52.0	1026.8973	0.0156	3630	
2011-10	4.9958	0.0002	0.78	0.0002	4	10	65.0	2014-09	1032.3480	0.0157	3688	0.0031	0.0000	0	-0.0022	-0.0003	0.0002	0	0.0019	0.0002	0	-0.0006	0.0002	0	5	65.0	1032.3505	0.0157	3692	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	5.0	2015-04	1005.2011	0.0058	71	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	15	1005.2037	0.0058	71	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	10.0	2015-04	1007.4814	0.0058	71	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	10.0	1007.4840	0.0059	72	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	15.0	2015-04	1009.7375	0.0154	3414	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	15.0	1009.7401	0.0154	3418	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	20.0	2015-04	1011.9697	0.0154	3444	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	20.0	1011.9723	0.0154	3448	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	26.0	2015-04	1014.6199	0.0155	3480	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	26.0	1014.6225	0.0155	3484	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	33.0	2015-04	1017.6606	0.0155	3521	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	33.0	1017.6722	0.0155	3525	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	41.5	2015-04	1021.3154	0.0156	3570	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	41.5	1021.3179	0.0156	3573	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	52.0	2015-04	1025.7321	0.0156	3626	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	52.0	1025.7346	0.0156	3630	
2011-10	4.9958	0.0002	0.77	0.0002	4	15	65.0	2015-04	1031.0771	0.0157	3688	0.0031	0.0000	0	-0.0022	-0.0003	0.0002	0	0.0022	0.0002	0	-0.0003	0.0002	0	5	65.0	1031.0796	0.0157	3692	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	5.0	2014-09	1004.2168	0.0058	71	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	20	1004.2200	0.0058	71	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	10.0	2014-09	1006.4538	0.0058	71	0.0032	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	20	1006.4570	0.0059	72	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	15.0	2014-09	1008.6687	0.0154	3414	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	20	1008.6719	0.0154	3417	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	20.0	2014-09	1010.8616	0.0154	3444	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	20	1010.8648	0.0154	3446	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	26.0	2014-09	1013.4616	0.0155	3480	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	26.0	1013.4648	0.0155	3482	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	33.0	2014-09	1016.4616	0.0155	3521	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	33.0	1016.4647	0.0155	3523	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	41.5	2014-09	1020.0434	0.0156	3570	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0018	0.0002	0	0.0000	0.0000	0	5	41.5	1020.0465	0.0156	3572	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	52.0	2014-09	1024.3847	0.0156	3626	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0019	0.0002	0	0.0000	0.0000	0	5	52.0	1024.3878	0.0156	3629	
2011-10	4.9958	0.0002	0.76	0.0002	4	20	65.0	2014-09	1029.6361	0.0157	3688	0.0030	0.0000	0	-0.0022	-0.0003	0.0002	0	0.0019	0.0002	0	0.0000	0.0000	0	5	65.0	1029.6392	0.0157	3691	
2011-10	4.9958	0.0002	0.75	0.0002	4	25	5.0	2014-05	1002.9869	0.0058	71	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0016	0.0001	0	0.0002	0.0002	0	5	25	5.0	1002.9904	0.0058	71
2011-10	4.9958	0.0002	0.75	0.0002	4	25	10.0	2014-05	1005.1934	0.0058	71	0.0031	0.0000	0	-0.0021	-0.0003	0.0002	0	0.0016	0.0001	0	0.0002	0.0002	0	5	25	10.0	1005.1969	0.0059	72
2011-10	4.9958																													

Salinity 10

Date of salinity measurement	Practical salinity from measurement					Temperature		Pressure	Date of density measurement	Seawater density from substitution measurement				Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)			
—	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dp/dS</i>	<i>u</i> (<i>p</i>)	<i>v</i>	<i>T</i>		<i>p</i>	—	<i>ρ_{SW,sub}</i>	<i>u</i>	<i>V_{ref}</i>		<i>Δρ_{SW,ref}</i>	<i>u</i>	<i>V_{ref}</i>	<i>Δρ_{SW,prep}</i>	<i>u</i>	<i>V_{ref}</i>	<i>Δρ_{SW,stor}</i>	<i>u</i>	<i>V_{ref}</i>	<i>Δρ_{SW,meas}</i>	<i>u</i>	<i>V_{ref}</i>	<i>S</i>	<i>T</i>	<i>p</i>	<i>ρ_{SW}</i>	<i>u</i>	<i>V_{ref}</i>	
		<i>kg m⁻³</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>	—	°C		MPa		<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		°C	MPa	<i>kg m⁻³</i>	<i>kg m⁻³</i>			
2011-03	9.9887	0.0003	0.79	0.0002	6	5		5.0	2014-10	1016.2405	0.0061	82	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	10.0	1016.2474	0.0061	82	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		10.0	2014-10	1012.6166	0.0061	82	0.0088	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	10.0	1012.6235	0.0061	83	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		15.0	2014-10	1014.9675	0.0155	3480	0.0088	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	15.0	1014.9743	0.0155	3485	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		20.0	2014-10	1017.2863	0.0155	3509	0.0088	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	20.0	1017.2931	0.0155	3514	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		26.0	2014-10	1020.0430	0.0156	3540	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0024	0.0002	∞	-0.0010	0.0002	∞	10	5	26.0	1020.0497	0.0156	3545	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		33.0	2014-10	1023.2180	0.0156	3567	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0010	0.0002	∞	10	5	33.0	1023.2246	0.0156	3572	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		41.5	2014-10	1027.0086	0.0157	3578	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0010	0.0002	∞	10	5	41.5	1027.0152	0.0157	3583	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		52.0	2014-10	1031.5922	0.0157	3542	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0010	0.0002	∞	10	5	52.0	1031.5987	0.0158	3587	
2011-03	9.9887	0.0003	0.79	0.0002	6	5		65.0	2014-10	1037.1289	0.0158	3397	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0010	0.0002	∞	10	5	65.0	1037.1353	0.0159	3402	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		5.0	2015-05	1009.7742	0.0061	82	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	5.0	1009.7811	0.0061	83	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		10.0	2015-05	1012.0876	0.0061	82	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	10.0	1012.0944	0.0061	83	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		15.0	2015-05	1014.3779	0.0155	3480	0.0087	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	15.0	1014.3846	0.0155	3485	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		20.0	2015-05	1016.6439	0.0155	3509	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	20.0	1016.6506	0.0155	3515	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		26.0	2015-05	1019.3304	0.0156	3540	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	26.0	1019.3371	0.0156	3546	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		33.0	2015-05	1022.4234	0.0156	3567	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	33.0	1022.4300	0.0156	3573	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		41.5	2015-05	1026.1202	0.0157	3578	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	41.5	1026.1268	0.0157	3584	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		52.0	2015-05	1030.5974	0.0157	3542	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0028	0.0003	∞	-0.0006	0.0002	∞	10	10	52.0	1030.6039	0.0158	3548	
2011-03	9.9887	0.0003	0.78	0.0002	6	10		65.0	2015-05	1036.0099	0.0158	3397	0.0083	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0029	0.0003	∞	-0.0006	0.0002	∞	10	10	65.0	1036.0163	0.0159	3402	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		5.0	2014-11	1009.0104	0.0061	82	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	5.0	1009.0179	0.0061	82	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		10.0	2014-11	1011.2747	0.0061	82	0.0086	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	10.0	1011.2821	0.0061	83	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		15.0	2014-11	1013.5161	0.0155	3480	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	15.0	1013.5235	0.0155	3485	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		20.0	2014-11	1015.7356	0.0155	3509	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	20.0	1015.7429	0.0155	3514	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		26.0	2014-11	1018.3651	0.0156	3540	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	26.0	1018.3723	0.0156	3545	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		33.0	2014-11	1021.3940	0.0156	3567	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	33.0	1021.4012	0.0156	3572	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		41.5	2014-11	1025.0161	0.0157	3578	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	41.5	1025.0232	0.0157	3583	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		52.0	2014-11	1029.4044	0.0157	3542	0.0083	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	52.0	1029.4115	0.0158	3547	
2011-03	9.9887	0.0003	0.77	0.0002	6	15		65.0	2014-11	1034.7140	0.0158	3397	0.0082	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	-0.0003	0.0002	∞	10	15	65.0	1034.7210	0.0159	3402	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		5.0	2014-12	1007.9802	0.0061	82	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	5.0	1007.9877	0.0061	82	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		10.0	2014-12	1010.2007	0.0061	82	0.0085	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	10.0	1010.2082	0.0061	83	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		15.0	2014-12	1012.4014	0.0155	3480	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	15.0	1012.4089	0.0155	3484	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		20.0	2014-12	1014.5822	0.0155	3509	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	20.0	1014.5896	0.0155	3513	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		26.0	2014-12	1017.1658	0.0156	3540	0.0084	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	26.0	1017.1732	0.0156	3544	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		33.0	2014-12	1020.1429	0.0156	3567	0.0083	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	33.0	1020.1502	0.0156	3571	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		41.5	2014-12	1023.7018	0.0157	3578	0.0083	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	41.5	1023.7090	0.0157	3582	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		52.0	2014-12	1028.0182	0.0157	3542	0.0082	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0025	0.0002	∞	0.0000	0.0000	∞	10	20	52.0	1028.0255	0.0157	3546	
2011-03	9.9887	0.0003	0.76	0.0002	6	20		65.0	2014-12	1033.2400	0.0158	3397	0.0081	0.0000	∞	-0.0018	-0.0003	0.0002	∞	0.0026	0.0002	∞	0									

Salinity 15

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement					Density correction to (integer) target salinity					Density change due to preparation (isotopic composition)					Density change due to storage (salt composition)					Density correction due to measurement (air saturation)					Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)				
—	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dρ</i> / <i>dS</i>	<i>u</i> (<i>ρ</i>)	<i>v</i>	<i>T</i>	<i>p</i>	—	<i>ρ</i> _{SW,sub}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,tgt}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,prep}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,stor}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,at}	<i>u</i>	<i>v</i> _{air}	<i>S</i>	<i>T</i>	<i>p</i>	<i>ρ</i> _{SW}	<i>u</i>	<i>v</i> _{air}								
		kg m ⁻³	kg m ⁻³	kg m ⁻³	—	°C	MPa		kg m ⁻³	kg m ⁻³	—		kg m ⁻³	kg m ⁻³	—		kg m ⁻³	kg m ⁻³	—		kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	—	°C	MPa	kg m ⁻³	kg m ⁻³	—							
2011-10	14.9999	0.0002	0.79	0.0002	8	5	5.0	2014-09	1014.1787	0.0063	93	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	5.0	1014.1773	0.0063	94								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	10.0	2014-09	1016.5344	0.0063	94	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	10.0	1016.5329	0.0063	95								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	15.0	2014-09	1018.8647	0.0156	3528	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	15.0	1018.8632	0.0156	3531								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	20.0	2014-09	1021.1706	0.0156	3548	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	20.0	1021.1691	0.0156	3551								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	26.0	2014-09	1023.9044	0.0156	3551	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	26.0	1023.9030	0.0157	3554								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	33.0	2014-09	1027.0502	0.0157	3507	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	33.0	1027.0489	0.0157	3511								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	41.5	2014-09	1030.8067	0.0158	3360	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	41.5	1030.8052	0.0158	3364								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	52.0	2014-09	1035.3561	0.0159	3017	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	52.0	1035.3546	0.0159	3020								
2011-10	14.9999	0.0002	0.79	0.0002	8	5	65.0	2014-09	1040.8511	0.0160	2418	0.0001	0.0000	—	-0.0015	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0010	0.0002	—	-0.0010	0.0002	—	15	5	65.0	1040.8496	0.0160	2421								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	5.0	2014-09	1013.5440	0.0063	93	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	5.0	1013.5430	0.0063	94								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	10.0	2014-09	1015.9433	0.0063	94	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	10.0	1015.9422	0.0063	95								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	15.0	2014-09	1018.2167	0.0156	3528	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	15.0	1018.2157	0.0156	3531								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	20.0	2014-09	1020.4611	0.0156	3548	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	20.0	1020.4600	0.0156	3551								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	26.0	2014-09	1023.1265	0.0156	3551	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	26.0	1023.1255	0.0157	3554								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	33.0	2014-09	1026.1972	0.0157	3507	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	33.0	1026.1962	0.0157	3511								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	41.5	2014-09	1029.8673	0.0158	3360	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	41.5	1029.8663	0.0158	3363								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	52.0	2014-09	1034.3139	0.0159	3017	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	52.0	1034.3129	0.0159	3020								
2011-10	14.9999	0.0002	0.78	0.0002	8	10	65.0	2014-09	1039.6887	0.0160	2418	0.0001	0.0000	—	-0.0015	-0.0003	0.0002	—	0.0017	0.0002	—	-0.0006	0.0002	—	-0.0006	0.0002	—	15	10	65.0	1039.6877	0.0160	2420								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	5.0	2015-06	1012.8307	0.0063	93	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	5.0	1012.8296	0.0063	94								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	10.0	2015-06	1015.0789	0.0063	94	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	10.0	1015.0778	0.0063	95								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	15.0	2015-06	1017.3043	0.0156	3528	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	15.0	1017.3032	0.0156	3532								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	20.0	2015-06	1019.5060	0.0156	3548	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	20.0	1019.5049	0.0156	3552								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	26.0	2015-06	1022.1185	0.0156	3551	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	26.0	1022.1174	0.0157	3554								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	33.0	2015-06	1025.1258	0.0157	3507	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	33.0	1025.1246	0.0157	3511								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	41.5	2015-06	1028.7222	0.0158	3360	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	41.5	1028.7211	0.0158	3364								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	52.0	2015-06	1033.0827	0.0159	3017	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	52.0	1033.0816	0.0159	3020								
2011-10	14.9999	0.0002	0.77	0.0002	8	15	65.0	2015-06	1038.3559	0.0160	2418	0.0001	0.0000	—	-0.0015	-0.0003	0.0002	—	0.0021	0.0002	—	-0.0003	0.0002	—	-0.0003	0.0002	—	15	15	65.0	1038.3548	0.0160	2421								
2011-10	14.9999	0.0002	0.76	0.0002	8	20	5.0	2015-05	1011.7574	0.0063	93	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0020	0.0002	—	0.0000	0.0000	—	0.0000	0.0000	—	15	20	5.0	1011.7566	0.0063	94								
2011-10	14.9999	0.0002	0.76	0.0002	8	20	10.0	2015-05	1013.9670	0.0063	94	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0020	0.0002	—	0.0000	0.0000	—	0.0000	0.0000	—	15	20	10.0	1013.9662	0.0063	95								
2011-10	14.9999	0.0002	0.76	0.0002	8	20	15.0	2015-05	1016.1533	0.0156	3528	0.0001	0.0000	—	-0.0014	-0.0003	0.0002	—	0.0021	0																					

Salinity 20

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement					Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)				
—	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dρ</i> (<i>S</i>)	<i>u</i> (<i>ρ</i>)	<i>v</i>	<i>T</i>	<i>p</i>	—	<i>ρ</i> _{SW,sub}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,tgt}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,prep}	<i>u</i>	<i>v</i> _{air}		<i>Δρ</i> _{SW,stor}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,meas}	<i>u</i>		<i>S</i>	<i>T</i>	<i>p</i>	<i>ρ</i> _{SW}	<i>u</i>	<i>v</i> _{air}	
		<i>kg m⁻³</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>°C</i>	<i>MPa</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>°C</i>	<i>MPa</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>		
2011-10	20.0009	0.0003	0.79	0.0002	7	5	5.0	2014-10	1018.1096	0.0065	105	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	5.0	1018.1069	0.0065	106
2011-10	20.0009	0.0003	0.79	0.0002	7	5	10.0	2014-10	1020.4467	0.0065	106	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	10.0	1020.4440	0.0065	107
2011-10	20.0009	0.0003	0.79	0.0002	7	5	15.0	2014-10	1022.7583	0.0157	3553	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	15.0	1022.7556	0.0157	3556
2011-10	20.0009	0.0003	0.79	0.0002	7	5	20.0	2014-10	1025.0437	0.0157	3544	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	0.0001	-0.0010	0.0002	0.0017	20.0	1025.0410	0.0157	3548
2011-10	20.0009	0.0003	0.79	0.0002	7	5	26.0	2014-10	1027.7557	0.0158	3470	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	26.0	1027.7530	0.0158	3473
2011-10	20.0009	0.0003	0.79	0.0002	7	5	33.0	2014-10	1030.8769	0.0158	3260	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	33.0	1030.8742	0.0158	3264
2011-10	20.0009	0.0003	0.79	0.0002	7	5	41.5	2014-10	1034.6033	0.0159	2822	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	41.5	1034.6007	0.0159	2825
2011-10	20.0009	0.0003	0.79	0.0002	7	5	52.0	2014-10	1039.1168	0.0160	2134	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	52.0	1039.1142	0.0160	2136
2011-10	20.0009	0.0003	0.79	0.0002	7	5	65.0	2014-10	1044.5711	0.0162	1373	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	0.0001	-0.0010	0.0002	0.0018	65.0	1044.5684	0.0162	1375
2011-10	20.0009	0.0003	0.78	0.0002	7	10	5.0	2014-10	1017.5148	0.0065	105	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	10	1017.5126	0.0065	106
2011-10	20.0009	0.0003	0.78	0.0002	7	10	10.0	2014-10	1019.7938	0.0065	106	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	10	1019.7916	0.0065	107
2011-10	20.0009	0.0003	0.78	0.0002	7	10	15.0	2014-10	1022.0469	0.0157	3553	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	15.0	1022.0447	0.0157	3556
2011-10	20.0009	0.0003	0.78	0.0002	7	10	20.0	2014-10	1024.2754	0.0157	3544	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	0.0001	-0.0006	0.0002	0.0017	20.0	1024.2731	0.0157	3548
2011-10	20.0009	0.0003	0.78	0.0002	7	10	26.0	2014-10	1026.9222	0.0158	3470	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	26.0	1026.9200	0.0158	3473
2011-10	20.0009	0.0003	0.78	0.0002	7	10	33.0	2014-10	1029.9723	0.0158	3260	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	33.0	1029.9701	0.0158	3263
2011-10	20.0009	0.0003	0.78	0.0002	7	10	41.5	2014-10	1033.6168	0.0159	2822	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	41.5	1033.6146	0.0159	2825
2011-10	20.0009	0.0003	0.78	0.0002	7	10	52.0	2014-10	1038.0312	0.0160	2134	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	52.0	1038.0290	0.0160	2136
2011-10	20.0009	0.0003	0.78	0.0002	7	10	65.0	2014-10	1043.3680	0.0162	1373	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	0.0001	-0.0006	0.0002	0.0018	65.0	1043.3658	0.0162	1375
2011-10	20.0009	0.0003	0.77	0.0002	7	15	5.0	2014-11	1016.6447	0.0065	105	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	15	1016.6428	0.0065	106
2011-10	20.0009	0.0003	0.77	0.0002	7	15	10.0	2014-11	1018.8775	0.0065	106	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	15	1018.8756	0.0065	107
2011-10	20.0009	0.0003	0.77	0.0002	7	15	15.0	2014-11	1021.0872	0.0157	3553	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	15	1021.0853	0.0157	3556
2011-10	20.0009	0.0003	0.77	0.0002	7	15	20.0	2014-11	1023.2737	0.0157	3544	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	20.0	1023.2718	0.0157	3548
2011-10	20.0009	0.0003	0.77	0.0002	7	15	26.0	2014-11	1025.8677	0.0158	3470	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	26.0	1025.8658	0.0158	3473
2011-10	20.0009	0.0003	0.77	0.0002	7	15	33.0	2014-11	1028.8547	0.0158	3260	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	33.0	1028.8528	0.0158	3263
2011-10	20.0009	0.0003	0.77	0.0002	7	15	41.5	2014-11	1032.4267	0.0159	2822	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	41.5	1032.4248	0.0159	2825
2011-10	20.0009	0.0003	0.77	0.0002	7	15	52.0	2014-11	1036.7570	0.0160	2134	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	52.0	1036.7551	0.0160	2136
2011-10	20.0009	0.0003	0.77	0.0002	7	15	65.0	2014-11	1041.9957	0.0162	1373	-0.0007	0.0000	-0.0011	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002	0.0018	0.0001	-0.0003	0.0002					

Salinity 25

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)		
	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dρ</i> / <i>dS</i>	<i>u</i> (<i>ρ</i>)	<i>v</i>				<i>ρ</i> _{SW,sub}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,tgt}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,prep}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,stor}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,meas}	<i>u</i>	<i>v</i> _{air}				<i>S</i>	<i>T</i>	<i>p</i>
—	<i>kg m⁻³</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>°C</i>		<i>MPa</i>	—	<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>°C</i>		<i>MPa</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>			
2011-10	25.0047	0.0002	0.79	0.0002	17	5		5.0	2015-05	1022.0450	0.0067	117	-0.0037	0.0000	-0.0007	-0.0003	0.0002	0.0018	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	5.0	1022.0388	0.0067	117
2011-10	25.0047	0.0002	0.79	0.0002	17	5		10.0	2015-05	1024.3617	0.0067	118	-0.0037	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	10.0	1024.3556	0.0067	119
2011-10	25.0047	0.0002	0.79	0.0002	17	5		15.0	2015-05	1026.6521	0.0157	3548	-0.0037	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	15.0	1026.6460	0.0157	3551
2011-10	25.0047	0.0002	0.79	0.0002	17	5		20.0	2015-05	1028.9206	0.0158	3479	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	20.0	1028.9145	0.0158	3483
2011-10	25.0047	0.0002	0.79	0.0002	17	5		26.0	2015-05	1031.6097	0.0159	3262	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	26.0	1031.6037	0.0159	3265
2011-10	25.0047	0.0002	0.79	0.0002	17	5		33.0	2015-05	1034.7043	0.0159	2809	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	33.0	1034.6983	0.0159	2811
2011-10	25.0047	0.0002	0.79	0.0002	17	5		41.5	2015-05	1038.4022	0.0161	2105	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	41.5	1038.3961	0.0161	2107
2011-10	25.0047	0.0002	0.79	0.0002	17	5		52.0	2015-05	1042.8818	0.0162	1334	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	52.0	1042.8758	0.0162	1335
2011-10	25.0047	0.0002	0.79	0.0002	17	5		65.0	2015-05	1048.2969	0.0164	737	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	5	65.0	1048.2909	0.0164	738
2011-10	25.0047	0.0002	0.78	0.0002	17	10		5.0	2014-10	1021.3889	0.0067	117	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0015	0.0001	0.0015	0.0001	0.0015	0.0001	25	10	5.0	1021.3825	0.0067	117
2011-10	25.0047	0.0002	0.78	0.0002	17	10		10.0	2014-10	1023.6521	0.0067	118	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0015	0.0001	0.0015	0.0001	0.0015	0.0001	25	10	10.0	1023.6468	0.0067	119
2011-10	25.0047	0.0002	0.78	0.0002	17	10		15.0	2014-10	1025.8888	0.0157	3548	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0015	0.0001	0.0015	0.0001	0.0015	0.0001	25	10	15.0	1025.8835	0.0157	3551
2011-10	25.0047	0.0002	0.78	0.0002	17	10		20.0	2014-10	1028.1045	0.0158	3479	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	20.0	1028.0992	0.0158	3482
2011-10	25.0047	0.0002	0.78	0.0002	17	10		26.0	2014-10	1030.7318	0.0159	3262	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	26.0	1030.7266	0.0159	3265
2011-10	25.0047	0.0002	0.78	0.0002	17	10		33.0	2014-10	1033.7587	0.0159	2809	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	33.0	1033.7534	0.0159	2811
2011-10	25.0047	0.0002	0.78	0.0002	17	10		41.5	2014-10	1037.3744	0.0161	2105	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	41.5	1037.3692	0.0161	2107
2011-10	25.0047	0.0002	0.78	0.0002	17	10		52.0	2014-10	1041.7590	0.0162	1334	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	52.0	1041.7538	0.0162	1335
2011-10	25.0047	0.0002	0.78	0.0002	17	10		65.0	2014-10	1047.0594	0.0164	737	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0016	0.0001	0.0016	0.0001	0.0016	0.0001	25	10	65.0	1047.0542	0.0164	738
2011-10	25.0047	0.0002	0.77	0.0002	17	15		5.0	2015-05	1020.4685	0.0067	117	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	5.0	1020.4633	0.0067	117
2011-10	25.0047	0.0002	0.77	0.0002	17	15		10.0	2015-05	1022.6852	0.0067	118	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	10.0	1022.6800	0.0067	119
2011-10	25.0047	0.0002	0.77	0.0002	17	15		15.0	2015-05	1024.8775	0.0157	3548	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	15.0	1024.8723	0.0157	3551
2011-10	25.0047	0.0002	0.77	0.0002	17	15		20.0	2015-05	1027.0475	0.0158	3479	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	20.0	1027.0423	0.0158	3483
2011-10	25.0047	0.0002	0.77	0.0002	17	15		26.0	2015-05	1029.6256	0.0159	3262	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	26.0	1029.6204	0.0159	3265
2011-10	25.0047	0.0002	0.77	0.0002	17	15		33.0	2015-05	1032.5900	0.0159	2809	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	33.0	1032.5848	0.0159	2811
2011-10	25.0047	0.0002	0.77	0.0002	17	15		41.5	2015-05	1036.1382	0.0161	2105	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	41.5	1036.1331	0.0161	2107
2011-10	25.0047	0.0002	0.77	0.0002	17	15		52.0	2015-05	1040.4403	0.0162	1334	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	52.0	1040.4351	0.0162	1335
2011-10	25.0047	0.0002	0.77	0.0002	17	15		65.0	2015-05	1045.6458	0.0164	737	-0.0034	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	15	65.0	1045.6407	0.0164	738
2011-10	25.0047	0.0002	0.76	0.0002	17	20		5.0	2015-06	1019.3046	0.0067	117	-0.0036	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	20	5.0	1019.2996	0.0067	117
2011-10	25.0047	0.0002	0.76	0.0002	17	20		10.0	2015-06	1021.4826	0.0067	118	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	20	10.0	1021.4776	0.0067	119
2011-10	25.0047	0.0002	0.76	0.0002	17	20		15.0	2015-06	1023.6416	0.0157	3548	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	20	15.0	1023.6366	0.0157	3550
2011-10	25.0047	0.0002	0.76	0.0002	17	20		20.0	2015-06	1025.7759	0.0158	3479	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.0002	25	20	20.0	1025.7710	0.0158	3482
2011-10	25.0047	0.0002	0.76	0.0002	17	20		26.0	2015-06	1028.3098	0.0159	3262	-0.0035	0.0000	-0.0007	-0.0003	0.0002	0.0019	0.0002	0.0019	0.0002	0.0019	0.00						

Salinity 30

Date of salinity measurement	Practical salinity from measurement					Temperature		Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)				
—	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dp/dS</i>	<i>u</i> (<i>ρ</i>)	<i>v</i>	<i>T</i>		<i>p</i>	—	<i>ρ</i> _{SW,sub}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,ref}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,prep}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,stor}	<i>u</i>	<i>v</i> _{air}	<i>Δρ</i> _{SW,meas}	<i>u</i>	<i>v</i> _{air}	<i>S</i>	<i>T</i>	<i>p</i>	<i>ρ</i> _{SW}	<i>u</i>	<i>v</i> _{air}		
		<i>kg m⁻³</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>°C</i>		<i>MPa</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>		<i>kg m⁻³</i>	<i>kg m⁻³</i>			<i>°C</i>	<i>MPa</i>	<i>kg m⁻³</i>	<i>kg m⁻³</i>			
2011-03	29.9689	0.0003	0.79	0.0002	25	5		5.0	2014-10	1028.9554	0.0071	140	0.0245	0.0000		-0.0004	-0.0003	0.0002		0.0026	0.0002		-0.0010	0.0002		30	5		5.0	1028.9763	0.0071	141
2011-03	29.9689	0.0003	0.79	0.0002	25	5		10.0	2014-10	1028.2516	0.0071	142	0.0244	0.0000		-0.0004	-0.0003	0.0002		0.0026	0.0002		-0.0010	0.0002		30	5		10.0	1028.2724	0.0071	143
2011-03	29.9689	0.0003	0.79	0.0002	25	5		15.0	2014-10	1030.5233	0.0159	3425	0.0243	0.0000		-0.0004	-0.0003	0.0002		0.0026	0.0002		-0.0010	0.0002		30	5		15.0	1030.5440	0.0159	3429
2011-03	29.9689	0.0003	0.79	0.0002	25	5		20.0	2014-10	1032.7752	0.0160	3120	0.0242	0.0000		-0.0004	-0.0003	0.0002		0.0026	0.0002		-0.0010	0.0002		30	5		20.0	1032.7958	0.0160	3124
2011-03	29.9689	0.0003	0.79	0.0002	25	5		26.0	2014-10	1035.4443	0.0161	2498	0.0240	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0010	0.0002		30	5		26.0	1035.4647	0.0161	2502
2011-03	29.9689	0.0003	0.79	0.0002	25	5		33.0	2014-10	1038.5156	0.0162	1693	0.0239	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0010	0.0002		30	5		33.0	1038.5359	0.0162	1695
2011-03	29.9689	0.0003	0.79	0.0002	25	5		41.5	2014-10	1042.1817	0.0164	973	0.0237	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0010	0.0002		30	5		41.5	1042.2018	0.0164	974
2011-03	29.9689	0.0003	0.79	0.0002	25	5		52.0	2014-10	1046.6291	0.0166	501	0.0235	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0010	0.0002		30	5		52.0	1046.6490	0.0166	501
2011-03	29.9689	0.0003	0.79	0.0002	25	5		65.0	2014-10	1052.0012	0.0169	247	0.0232	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0010	0.0002		30	5		65.0	1052.0208	0.0169	247
2011-03	29.9689	0.0003	0.78	0.0002	25	10		5.0	2015-05	1028.2380	0.0071	140	0.0241	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		5.0	1028.2586	0.0071	141
2011-03	29.9689	0.0003	0.78	0.0002	25	10		10.0	2015-05	1027.4818	0.0071	142	0.0240	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		10.0	1027.5022	0.0071	143
2011-03	29.9689	0.0003	0.78	0.0002	25	10		15.0	2015-05	1029.7016	0.0159	3425	0.0239	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		15.0	1029.7220	0.0159	3430
2011-03	29.9689	0.0003	0.78	0.0002	25	10		20.0	2015-05	1031.8998	0.0160	3120	0.0238	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		20.0	1031.9201	0.0160	3124
2011-03	29.9689	0.0003	0.78	0.0002	25	10		26.0	2015-05	1034.5084	0.0161	2498	0.0237	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		26.0	1034.5285	0.0161	2502
2011-03	29.9689	0.0003	0.78	0.0002	25	10		33.0	2015-05	1037.5099	0.0162	1693	0.0236	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		33.0	1037.5299	0.0162	1696
2011-03	29.9689	0.0003	0.78	0.0002	25	10		41.5	2015-05	1041.1004	0.0164	973	0.0234	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		41.5	1041.1202	0.0164	975
2011-03	29.9689	0.0003	0.78	0.0002	25	10		52.0	2015-05	1045.4496	0.0166	501	0.0232	0.0000		-0.0004	-0.0003	0.0002		0.0031	0.0003		-0.0006	0.0002		30	10		52.0	1045.4692	0.0166	501
2011-03	29.9689	0.0003	0.78	0.0002	25	10		65.0	2015-05	1050.7152	0.0169	247	0.0230	0.0000		-0.0004	-0.0003	0.0002		0.0032	0.0003		-0.0006	0.0002		30	10		65.0	1050.7346	0.0169	247
2011-03	29.9689	0.0003	0.77	0.0002	25	15		5.0	2014-11	1024.2668	0.0071	140	0.0238	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0003	0.0002		30	15		5.0	1024.2878	0.0071	141
2011-03	29.9689	0.0003	0.77	0.0002	25	15		10.0	2014-11	1026.4703	0.0071	142	0.0237	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0003	0.0002		30	15		10.0	1026.4912	0.0071	143
2011-03	29.9689	0.0003	0.77	0.0002	25	15		15.0	2014-11	1028.6502	0.0159	3425	0.0236	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0003	0.0002		30	15		15.0	1028.6709	0.0159	3429
2011-03	29.9689	0.0003	0.77	0.0002	25	15		20.0	2014-11	1030.8036	0.0160	3120	0.0235	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0003	0.0002		30	15		20.0	1030.8242	0.0160	3124
2011-03	29.9689	0.0003	0.77	0.0002	25	15		26.0	2014-11	1033.3623	0.0161	2498	0.0234	0.0000		-0.0004	-0.0003	0.0002		0.0027	0.0002		-0.0003	0.0002		30	15		26.0	1033.3828	0.0161	2502
2011-03	29.9689	0.0003	0.77	0.0002	25	15		33.0	2014-11	1036.3099	0.0162	1693	0.0233	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		-0.0003	0.0002		30	15		33.0	1036.3303	0.0162	1695
2011-03	29.9689	0.0003	0.77	0.0002	25	15		41.5	2014-11	1039.8309	0.0164	973	0.0232	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		-0.0003	0.0002		30	15		41.5	1039.8511	0.0164	974
2011-03	29.9689	0.0003	0.77	0.0002	25	15		52.0	2014-11	1044.1021	0.0166	501	0.0230	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		-0.0003	0.0002		30	15		52.0	1044.1222	0.0166	501
2011-03	29.9689	0.0003	0.77	0.0002	25	15		65.0	2014-11	1049.2738	0.0169	247	0.0228	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		-0.0003	0.0002		30	15		65.0	1049.2936	0.0169	247
2011-03	29.9689	0.0003	0.76	0.0002	25	20		5.0	2015-01	1023.0649	0.0071	140	0.0236	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		5.0	1023.0857	0.0071	141
2011-03	29.9689	0.0003	0.76	0.0002	25	20		10.0	2015-01	1025.2317	0.0071	142	0.0235	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		10.0	1025.2525	0.0071	142
2011-03	29.9689	0.0003	0.76	0.0002	25	20		15.0	2015-01	1027.3766	0.0159	3425	0.0234	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		15.0	1027.3973	0.0159	3428
2011-03	29.9689	0.0003	0.76	0.0002	25	20		20.0	2015-01	1029.4978	0.0160	3120	0.0233	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		20.0	1029.5184	0.0160	3123
2011-03	29.9689	0.0003	0.76	0.0002	25	20		26.0	2015-01	1032.0172	0.0161	2498	0.0232	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		26.0	1032.0377	0.0161	2501
2011-03	29.9689	0.0003	0.76	0.0002	25	20		33.0	2015-01	1034.9185	0.0162	1693	0.0231	0.0000		-0.0004	-0.0003	0.0002		0.0028	0.0002		0.0000	0.0000		30	20		33.0	1034.9389	0.0162	1695
2011-03	29.9689	0.0003	0.76	0.0002	25	20		41.5	2015-01	1038.3908	0.0164	973	0.0230	0.0000		-0.0004	-0.0003	0.0002		0.0029	0.0002		0.0000	0.0000		30	20		41.5	1038.4110	0.0164	974
2011-03	29.9689	0.0003	0.76	0.0002	25	20		52.0	2015-01	1042.6001	0.0166	501	0.0228	0.0000		-0.0004	-0.0003	0.0002		0.0029	0.0002		0.0000	0.0000		30	20		52.0	1042.6201	0.0166	501
2011-03	29.9689	0.0003	0.76	0.0002	25	20		65.0	2015-01	1047.6980	0.0169	247	0.0226	0.0000		-0.0004	-0.0003	0.0002		0.0029	0.0002		0.0000	0.0000		30	20		65.0	1047.7179	0.0169	247
2011-03	29.9689	0.0003	0.75	0.0002	25	25		5.0	2015-01	1021.6503	0.0071	140	0.0234	0.0																		

Salinity 35

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Seawater density (at uniform conditions)			
—	<i>S</i>	<i>u</i> (<i>S</i>)	<i>dp/dS</i>	<i>u</i> (<i>p</i>)	<i>v</i>	<i>T</i>	<i>p</i>	—	<i>ρ_{SW,sub}</i>	<i>u</i>	<i>v_{air}</i>	<i>Δρ_{SW,tgt}</i>	<i>u</i>	<i>v_{air}</i>	<i>Δρ_{SW,prep}</i>	<i>u</i>	<i>v_{air}</i>	<i>Δρ_{SW,stor}</i>	<i>u</i>	<i>v_{air}</i>	<i>Δρ_{SW,meas}</i>	<i>u</i>	<i>v_{air}</i>	<i>S</i>	<i>T</i>	<i>p</i>	<i>ρ_{SW}</i>	<i>u</i>	<i>v_{air}</i>	
		kg m ⁻³	kg m ⁻³	kg m ⁻³	—	°C	MPa		kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	—	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³	kg m ⁻³		°C	MPa	kg m ⁻³	kg m ⁻³	—	
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	5.0	2015-05	1029.9117	0.0070	136	0.0065	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	5.0	1029.9139	0.0070	137
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	10.0	2015-05	1032.1909	0.0070	138	0.0065	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	10.0	1032.1931	0.0071	139
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	15.0	2015-05	1034.4473	0.0158	3377	0.0065	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	15.0	1034.4494	0.0158	3381
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	20.0	2015-05	1036.6762	0.0159	3107	0.0065	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	20.0	1036.6783	0.0159	3111
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	26.0	2015-05	1039.3231	0.0160	2534	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	26.0	1039.3252	0.0160	2537
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	33.0	2015-05	1042.3690	0.0161	1754	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	33.0	1042.3718	0.0161	1756
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	41.5	2015-05	1046.0040	0.0162	1023	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	41.5	1046.0059	0.0163	1025
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	52.0	2015-05	1050.4136	0.0165	529	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0031	0.0003	∞	0.0031	0.0003	∞	35	5	52.0	1050.4155	0.0165	530
2011-03	34.9917	0.0002	0.79	0.0002	∞	5	65.0	2015-05	1055.7430	0.0168	260	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0032	0.0003	∞	0.0032	0.0003	∞	35	5	65.0	1055.7447	0.0168	260
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	5.0	2015-02	1029.1420	0.0070	136	0.0065	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0002	∞	0.0029	0.0002	∞	35	10	5.0	1029.1447	0.0070	137
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	10.0	2015-02	1031.3697	0.0070	138	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0002	∞	0.0029	0.0002	∞	35	10	10.0	1031.3723	0.0071	139
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	15.0	2015-02	1033.5732	0.0158	3377	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0002	∞	0.0029	0.0002	∞	35	10	15.0	1033.5758	0.0158	3381
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	20.0	2015-02	1035.7553	0.0159	3107	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0002	∞	0.0029	0.0002	∞	35	10	20.0	1035.7579	0.0159	3110
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	26.0	2015-02	1038.3443	0.0160	2534	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0002	∞	0.0029	0.0002	∞	35	10	26.0	1038.3469	0.0160	2537
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	33.0	2015-02	1041.3254	0.0161	1754	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0029	0.0003	∞	0.0029	0.0003	∞	35	10	33.0	1041.3280	0.0161	1756
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	41.5	2015-02	1044.8882	0.0162	1023	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0030	0.0003	∞	0.0030	0.0003	∞	35	10	41.5	1044.8906	0.0163	1025
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	52.0	2015-02	1049.2087	0.0165	529	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0030	0.0003	∞	0.0030	0.0003	∞	35	10	52.0	1049.2111	0.0165	530
2011-03	34.9917	0.0002	0.78	0.0002	∞	10	65.0	2015-02	1054.4357	0.0168	260	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0030	0.0003	∞	0.0030	0.0003	∞	35	10	65.0	1054.4380	0.0168	260
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	5.0	2014-04	1028.1205	0.0070	136	0.0064	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	5.0	1028.1240	0.0070	137
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	10.0	2014-04	1030.3050	0.0070	138	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	10.0	1030.3085	0.0071	138
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	15.0	2014-04	1032.4690	0.0158	3377	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	15.0	1032.4725	0.0158	3381
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	20.0	2014-04	1034.6100	0.0159	3107	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	20.0	1034.6135	0.0159	3110
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	26.0	2014-04	1037.1512	0.0160	2534	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	26.0	1037.1546	0.0160	2536
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	33.0	2014-04	1040.0798	0.0161	1754	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	33.0	1040.0832	0.0161	1755
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	41.5	2014-04	1043.5784	0.0162	1023	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	41.5	1043.5818	0.0163	1024
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	52.0	2014-04	1047.8235	0.0165	529	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0023	0.0002	∞	0.0023	0.0002	∞	35	15	52.0	1047.8268	0.0165	530
2011-03	34.9917	0.0002	0.77	0.0002	∞	15	65.0	2014-04	1052.9626	0.0168	260	0.0061	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0024	0.0002	∞	0.0024	0.0002	∞	35	15	65.0	1052.9659	0.0168	260
2011-03	34.9917	0.0002	0.76	0.0002	∞	20	5.0	2014-11	1026.8740	0.0070	136	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0027	0.0002	∞	0.0027	0.0002	∞	35	20	5.0	1026.8773	0.0070	137
2011-03	34.9917	0.0002	0.76	0.0002	∞	20	10.0	2014-11	1029.0253	0.0070	138	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0027	0.0002	∞	0.0027	0.0002	∞	35	20	10.0	1029.0285	0.0071	138
2011-03	34.9917	0.0002	0.76	0.0002	∞	20	15.0	2014-11	1031.1540	0.0158	3377	0.0063	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0028	0.0002	∞	0.0028	0.0002	∞	35	20	15.0	1031.1572	0.0158	3380
2011-03	34.9917	0.0002	0.76	0.0002	∞	20	20.0	2014-11	1033.2627	0.0159	3107	0.0062	0.0000	∞	0.0000	-0.0003	0.0002	∞	0.0028	0.0002	∞	0.0028	0.0002	∞	35	20	20.0	1033.2659	0.0159	3109
2011-03	34.9917	0.0002	0.76	0.0002	∞	20	26.0																							

Sect. 4 (data)

Density for atmospheric pressure

Practical salinity <i>S</i> —	Temperature <i>T</i> °C	Pressure <i>p</i> MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			Δ <i>p</i> - <i>S</i> -Relation										Residua		Salt + Air	
			<i>ρ_{sw,0}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>V_{eff}</i> —	<i>ρ_{sw}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>V_{eff}</i> —	<i>Δρ_{sw}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>V_{eff}</i> —	<i>b₀</i> μmol kg ⁻¹	<i>u</i> μmol kg ⁻¹	<i>V_{eff}</i> —	Dataset				Relation		Air		<i>Δ</i> kg m ⁻³	<i>Δρ_{sw}</i> kg m ⁻³	<i>U</i> kg m ⁻³			
															<i>Δρ_{sw,0}</i> kg m ⁻³	<i>Δρ_{sw,0}</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>ΔΔρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>ΔΔρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw,0}</i> kg m ⁻³	<i>Δρ_{sw,0}</i> kg m ⁻³						
0	5	0.101325	999.9666	0.0005	∞	999.9627	0.0008	∞	-0.0039	0.0006	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0013		
0	10	0.101325	999.7025	0.0005	∞	999.6991	0.0008	∞	-0.0033	0.0006	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0011		
0	15	0.101325	999.1026	0.0005	∞	999.0998	0.0007	∞	-0.0028	0.0005	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0010		
0	20	0.101325	998.2072	0.0005	∞	998.2047	0.0007	∞	-0.0024	0.0004	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0009		
0	25	0.101325	997.0476	0.0005	∞	997.0456	0.0006	∞	-0.0021	0.0004	∞	0.0	0.0	∞	-0.0021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0021	0.0000	-0.0021	0.0008		
0	30	0.101325	995.6495	0.0005	∞	995.6477	0.0006	∞	-0.0018	0.0004	∞	0.0	0.0	∞	-0.0018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0018	0.0000	-0.0018	0.0008		
0	35	0.101325	994.0333	0.0005	∞	994.0318	0.0007	∞	-0.0015	0.0004	∞	0.0	0.0	∞	-0.0015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0015	0.0000	-0.0015	0.0008		
5	5	0.101325	999.9666	0.0005	∞	1003.9395	0.0009	79	3.9729	0.0007	37	2.4	0.2	∞	-0.0039	3.9768	3.9768	0.0000	3.9757	0.0000	3.9757	-0.0039	0.0012	3.9717	0.0020			
5	10	0.101325	999.7025	0.0005	∞	1003.6026	0.0009	80	3.9001	0.0007	38	2.4	0.2	∞	-0.0033	3.9034	3.9034	0.0000	3.9043	0.0000	3.9043	-0.0033	-0.0009	3.9010	0.0020			
5	15	0.101325	999.1026	0.0005	∞	1002.9470	0.0009	78	3.8443	0.0007	37	2.4	0.2	∞	-0.0028	3.8472	3.8472	0.0000	3.8463	0.0000	3.8463	-0.0028	0.0009	3.8435	0.0020			
5	20	0.101325	998.2072	0.0005	∞	1002.0022	0.0009	71	3.7951	0.0007	32	2.4	0.2	∞	-0.0024	3.7975	3.7975	0.0000	3.7989	0.0000	3.7989	-0.0024	-0.0014	3.7965	0.0020			
5	25	0.101325	997.0476	0.0005	∞	1000.8074	0.0009	78	3.7598	0.0007	37	2.4	0.2	∞	-0.0021	3.7618	3.7618	0.0000	3.7602	0.0000	3.7602	-0.0021	0.0017	3.7581	0.0020			
5	30	0.101325	995.6495	0.0005	∞	999.3744	0.0009	79	3.7249	0.0007	38	2.4	0.2	∞	-0.0018	3.7267	3.7267	0.0000	3.7285	0.0000	3.7285	-0.0018	-0.0018	3.7267	0.0020			
5	35	0.101325	994.0333	0.0005	∞	997.7355	0.0009	78	3.7021	0.0007	37	2.4	0.2	∞	-0.0015	3.7037	3.7037	0.0000	3.7028	0.0000	3.7028	-0.0015	0.0009	3.7013	0.0020			
10	5	0.101325	999.9666	0.0005	∞	1007.8944	0.0009	98	7.9278	0.0008	51	4.7	0.5	∞	-0.0039	7.9317	7.9317	0.0000	7.9320	0.0000	7.9320	-0.0039	-0.0003	7.9281	0.0020			
10	10	0.101325	999.7025	0.0005	∞	1007.4899	0.0009	99	7.7875	0.0008	52	4.7	0.5	∞	-0.0033	7.7908	7.7908	0.0000	7.7914	0.0000	7.7914	-0.0033	-0.0006	7.7881	0.0020			
10	15	0.101325	999.1026	0.0005	∞	1006.7764	0.0009	98	7.6737	0.0008	51	4.7	0.5	∞	-0.0028	7.6766	7.6766	0.0000	7.6764	0.0000	7.6764	-0.0028	0.0002	7.6736	0.0020			
10	20	0.101325	998.2072	0.0005	∞	1005.7856	0.0009	90	7.5785	0.0008	45	4.7	0.5	∞	-0.0024	7.5809	7.5809	0.0000	7.5819	0.0000	7.5819	-0.0024	-0.0010	7.5794	0.0020			
10	25	0.101325	997.0476	0.0005	∞	1004.5494	0.0009	98	7.5018	0.0008	51	4.7	0.5	∞	-0.0021	7.5039	7.5039	0.0000	7.5039	0.0000	7.5039	-0.0021	0.0000	7.5018	0.0020			
10	30	0.101325	995.6495	0.0005	∞	1003.0875	0.0009	98	7.4381	0.0008	51	4.7	0.5	∞	-0.0018	7.4399	7.4399	0.0000	7.4398	0.0000	7.4398	-0.0018	0.0001	7.4380	0.0020			
10	35	0.101325	994.0333	0.0005	∞	1001.4178	0.0009	98	7.3845	0.0008	51	4.7	0.5	∞	-0.0015	7.3861	7.3861	0.0000	7.3873	0.0000	7.3873	-0.0015	-0.0012	7.3858	0.0020			
15	5	0.101325	999.9666	0.0005	∞	1011.8438	0.0009	102	11.8772	0.0008	53	7.1	0.7	∞	-0.0039	11.8812	11.8812	0.0000	11.8816	0.0000	11.8816	-0.0039	-0.0005	11.8777	0.0020			
15	10	0.101325	999.7025	0.0005	∞	1011.3725	0.0010	104	11.6700	0.0008	54	7.1	0.7	∞	-0.0033	11.6734	11.6734	0.0000	11.6741	0.0000	11.6741	-0.0033	-0.0007	11.6708	0.0020			
15	15	0.101325	999.1026	0.0005	∞	1010.6047	0.0009	102	11.5021	0.0008	53	7.1	0.7	∞	-0.0028	11.5050	11.5050	0.0000	11.5036	0.0000	11.5036	-0.0028	0.0013	11.5008	0.0020			
15	20	0.101325	998.2072	0.0005	∞	1009.5691	0.0009	94	11.3619	0.0008	47	7.1	0.7	∞	-0.0024	11.3644	11.3644	0.0000	11.3628	0.0000	11.3628	-0.0024	0.0015	11.3604	0.0020			
15	25	0.101325	997.0476	0.0005	∞	1008.2929	0.0009	102	11.2453	0.0008	53	7.1	0.7	∞	-0.0021	11.2474	11.2474	0.0000	11.2463	0.0000	11.2463	-0.0021	0.0010	11.2442	0.0020			
15	30	0.101325	995.6495	0.0005	∞	1006.7973	0.0009	103	11.1479	0.0008	53	7.1	0.7	∞	-0.0018	11.1497	11.1497	0.0000	11.1500	0.0000	11.1500	-0.0018	-0.0003	11.1482	0.0020			
15	35	0.101325	994.0333	0.0005	∞	1005.1036	0.0009	102	11.0703	0.0008	53	7.1	0.7	∞	-0.0015	11.0718	11.0718	0.0000	11.0710	0.0000	11.0710	-0.0015	0.0009	11.0694	0.0020			
20	5	0.101325	999.9666	0.0005	∞	1015.7933	0.0010	114	15.8266	0.0008	62	9.4	0.9	∞	-0.0039	15.8306	15.8306	0.0000	15.8307	0.0000	15.8307	-0.0039	-0.0001	15.8267	0.0020			
20	10	0.101325	999.7025	0.0005	∞	1015.2587	0.0010	114	15.5562	0.0008	62	9.4	0.9	∞	-0.0033	15.5596	15.5596	0.0000	15.5583	0.0000	15.5583	-0.0033	0.0012	15.5550	0.0020			
20	15	0.101325	999.1026	0.0005	∞	1014.4329	0.0010	114	15.3303	0.0008	62	9.4	0.9	∞	-0.0028	15.3331	15.3331	0.0000	15.3339	0.0000	15.3339	-0.0028	-0.0008	15.3311	0.0020			
20	20	0.101325	998.2072	0.0005	∞	1013.3542	0.0010	104	15.1470	0.0008	55	9.4	0.9	∞	-0.0024	15.1495	15.1495	0.0000	15.1481	0.0000	15.1481	-0.0024	0.0014	15.1456	0.0020			
20	25	0.101325	997.0476	0.0005	∞	1012.0391	0.0010	113	14.9914	0.0008	62	9.4	0.9	∞	-0.0021	14.9935	14.9935	0.0000	14.9938	0.0000	14.9938	-0.0021	-0.0003	14.9917	0.0020			
20	30	0.101325	995.6495	0.0005	∞	1010.5117	0.0010	113	14.8623																			

Density for high pressures

Salinity 0

Practical salinity <i>S</i> —	Temperature <i>T</i> °C	Pressure <i>p</i> MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			Δ <i>p</i> - <i>S</i> Relation										Residual		Salt + Air	
			<i>ρ_{sw0}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>Var</i> —	<i>ρ_{sw}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>Var</i> —	<i>Δρ_{sw}</i> kg m ⁻³	<i>u</i> kg m ⁻³	<i>Var</i> —	<i>b₀</i> μmol kg ⁻¹	<i>u</i> μmol kg ⁻¹	<i>Var</i> —	Air		Dataset		Relation		Air		Residual		Salt + Air			
			<i>Δρ_{sw0}(<i>p</i>)</i>		<i>Δρ_{sw0}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i> kg m ⁻³	<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>			
			<i>Δρ_{sw0}(<i>p</i>)</i>			<i>Δρ_{sw}(<i>p</i>)</i>			<i>Δρ_{sw}(<i>p</i>)</i>			<i>Δρ_{sw}(<i>p</i>)</i>			<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>		<i>Δρ_{sw}(<i>p</i>)</i>					
0	5	5.0	1002.3620	0.0050	∞	1002.3581	0.0058	71	-0.0039	0.0030	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0060		
0	5	10.0	1004.7801	0.0050	∞	1004.7762	0.0059	72	-0.0039	0.0030	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0060		
0	5	15.0	1007.1716	0.0151	∞	1007.1676	0.0154	3418	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	20.0	1009.5367	0.0151	∞	1009.5328	0.0154	3448	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	26.0	1012.3408	0.0152	∞	1012.3368	0.0155	3483	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	33.0	1015.5620	0.0152	∞	1015.5620	0.0155	3525	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	41.5	1019.4167	0.0153	∞	1019.4128	0.0156	3573	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	52.0	1024.0766	0.0154	∞	1024.0726	0.0156	3630	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	5	65.0	1029.7021	0.0154	∞	1029.6981	0.0157	3692	-0.0039	0.0029	∞	0.0	0.0	∞	-0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0039	0.0000	-0.0039	0.0058		
0	10	5.0	1002.0313	0.0050	∞	1002.0280	0.0058	71	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0060		
0	10	10.0	1004.3831	0.0050	∞	1004.3797	0.0059	72	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0060		
0	10	15.0	1006.7096	0.0151	∞	1006.7063	0.0154	3418	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0059		
0	10	20.0	1009.0115	0.0151	∞	1009.0081	0.0154	3448	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0059		
0	10	26.0	1011.7381	0.0152	∞	1011.7381	0.0155	3483	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0059		
0	10	33.0	1014.8829	0.0152	∞	1014.8796	0.0155	3525	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0059		
0	10	41.5	1018.6358	0.0153	∞	1018.6325	0.0156	3573	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0059		
0	10	52.0	1023.1806	0.0153	∞	1023.1773	0.0156	3630	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0060		
0	10	65.0	1028.6722	0.0154	∞	1028.6689	0.0157	3692	-0.0033	0.0030	∞	0.0	0.0	∞	-0.0033	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0033	0.0000	-0.0033	0.0060		
0	15	5.0	1001.3779	0.0050	∞	1001.3751	0.0058	71	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0060		
0	15	10.0	1003.6761	0.0050	∞	1003.6732	0.0059	72	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0060		
0	15	15.0	1005.9500	0.0151	∞	1005.9472	0.0154	3418	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0060		
0	15	20.0	1008.2003	0.0151	∞	1008.1975	0.0154	3448	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0060		
0	15	26.0	1010.8698	0.0152	∞	1010.8670	0.0155	3484	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0060		
0	15	33.0	1013.9426	0.0152	∞	1013.9398	0.0155	3525	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0061		
0	15	41.5	1017.6149	0.0153	∞	1017.6121	0.0156	3573	-0.0028	0.0030	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0061		
0	15	52.0	1022.0644	0.0153	∞	1022.0615	0.0156	3630	-0.0028	0.0031	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0061		
0	15	65.0	1027.4442	0.0154	∞	1027.4414	0.0157	3692	-0.0028	0.0031	∞	0.0	0.0	∞	-0.0028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0028	0.0000	-0.0028	0.0062		
0	20	5.0	1000.4396	0.0050	∞	1000.4372	0.0058	71	-0.0024	0.0030	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0060		
0	20	10.0	1002.6946	0.0050	∞	1002.6922	0.0058	71	-0.0024	0.0030	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0060		
0	20	15.0	1004.9262	0.0151	∞	1004.9238	0.0154	3417	-0.0024	0.0031	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0062		
0	20	20.0	1007.1348	0.0151	∞	1007.1323	0.0154	3446	-0.0024	0.0031	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0062		
0	20	26.0	1009.7552	0.0151	∞	1009.7528	0.0155	3482	-0.0024	0.0031	∞	0.0	0.0	∞	-0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0024	0.0000	-0.0024	0.0062		

Salinity 5

Practical salinity S —	Temperature T °C	Pressure p MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			$\Delta\rho$ -5-Relation												Residual		Salt + Air	
			$\rho_{\text{H}_2\text{O}}$ kg m ⁻³	ρ kg m ⁻³	V_{rel} —	ρ_{SW} kg m ⁻³	ρ kg m ⁻³	V_{rel} —	$\Delta\rho_{\text{SW}}$ kg m ⁻³	ρ kg m ⁻³	V_{rel} —	b_0 μmol kg ⁻¹	μ μmol kg ⁻¹	V_{rel} —	Dataset			Relation			Air			d kg m ⁻³	$\Delta\rho_{\text{SW}}$ kg m ⁻³	U kg m ⁻³				
															$\Delta\rho_{\text{SW}}$ kg m ⁻³	$\Delta\rho_{\text{SW}}$ kg m ⁻³	$\Delta\rho_{\text{SW}}(p)$ kg m ⁻³	$\Delta\Delta\rho_{\text{SW}}(p)$ kg m ⁻³	$\Delta\rho_{\text{SW}}(p)$ kg m ⁻³	$\Delta\Delta\rho_{\text{SW}}(p)$ kg m ⁻³	$\Delta\rho_{\text{SW}}$ kg m ⁻³	$\Delta\rho_{\text{SW}}$ kg m ⁻³	$\Delta\rho_{\text{SW}}$ kg m ⁻³							
5	5	5.0	1002.3620	0.0050	∞	1006.3128	0.0061	82	3.9508	0.0034	8	2.4	0.2	∞	-0.0039	3.9547	3.9768	-0.0221	3.9757	-0.0219	3.9537	-0.0039	0.0009	3.9498	0.0060					
5	5	10.0	1004.7801	0.0050	∞	1008.7083	0.0061	83	3.9282	0.0034	8	2.4	0.2	∞	-0.0039	3.9322	3.9768	-0.0447	3.9757	-0.0438	3.9319	-0.0039	0.0003	3.9279	0.0060					
5	5	15.0	1007.1716	0.0151	∞	1011.0785	0.0155	3485	3.9070	0.0034	8	2.4	0.2	∞	-0.0039	3.9109	3.9768	-0.0659	3.9757	-0.0651	3.9105	-0.0039	0.0004	3.9066	0.0060					
5	5	20.0	1009.5367	0.0151	∞	1013.4235	0.0155	3514	3.8867	0.0034	8	2.4	0.2	∞	-0.0039	3.8907	3.9768	-0.0861	3.9757	-0.0860	3.8907	-0.0039	0.0010	3.8858	0.0060					
5	5	26.0	1012.3408	0.0152	∞	1016.2030	0.0156	3545	3.8622	0.0034	8	2.4	0.2	∞	-0.0039	3.8661	3.9768	-0.1107	3.9757	-0.1103	3.8654	-0.0039	0.0008	3.8614	0.0060					
5	5	33.0	1015.5660	0.0152	∞	1019.4005	0.0156	3572	3.8346	0.0034	8	2.4	0.2	∞	-0.0039	3.8385	3.9768	-0.1383	3.9757	-0.1378	3.8379	-0.0039	0.0006	3.8339	0.0060					
5	5	41.5	1019.4167	0.0153	∞	1023.2171	0.0157	3583	3.8004	0.0034	8	2.4	0.2	∞	-0.0039	3.8044	3.9768	-0.1697	3.9757	-0.1693	3.8057	-0.0039	-0.0013	3.8018	0.0060					
5	5	52.0	1024.0766	0.0154	∞	1027.8407	0.0158	3547	3.7641	0.0035	8	2.4	0.2	∞	-0.0039	3.7680	3.9768	-0.2088	3.9757	-0.2078	3.7679	-0.0039	0.0002	3.7639	0.0060					
5	5	65.0	1029.7021	0.0154	∞	1033.4214	0.0159	3402	3.7193	0.0036	9	2.4	0.2	∞	-0.0039	3.7232	3.9768	-0.2536	3.9757	-0.2522	3.7234	-0.0039	-0.0002	3.7195	0.0060					
5	10	5.0	1002.0313	0.0050	∞	1005.9137	0.0061	83	3.8824	0.0034	8	2.4	0.2	∞	-0.0033	3.8857	3.9034	-0.0177	3.9043	-0.0196	3.8847	-0.0033	0.0010	3.8814	0.0060					
5	10	10.0	1004.3831	0.0050	∞	1008.2449	0.0061	83	3.8619	0.0034	8	2.4	0.2	∞	-0.0033	3.8652	3.9034	-0.0382	3.9043	-0.0392	3.8652	-0.0033	0.0000	3.8618	0.0060					
5	10	15.0	1006.7096	0.0151	∞	1010.5503	0.0155	3485	3.8407	0.0034	8	2.4	0.2	∞	-0.0033	3.8440	3.9034	-0.0594	3.9043	-0.0583	3.8461	-0.0033	-0.0020	3.8427	0.0060					
5	10	20.0	1009.0115	0.0151	∞	1012.8341	0.0155	3515	3.8227	0.0034	8	2.4	0.2	∞	-0.0033	3.8260	3.9034	-0.0774	3.9043	-0.0769	3.8274	-0.0033	-0.0014	3.8241	0.0060					
5	10	26.0	1011.7415	0.0152	∞	1015.5455	0.0156	3546	3.8040	0.0034	8	2.4	0.2	∞	-0.0033	3.8073	3.9034	-0.0961	3.9043	-0.0987	3.8056	-0.0033	0.0017	3.8023	0.0060					
5	10	33.0	1014.8829	0.0152	∞	1018.6629	0.0156	3573	3.7799	0.0034	8	2.4	0.2	∞	-0.0033	3.7833	3.9034	-0.1202	3.9043	-0.1233	3.7810	-0.0033	0.0023	3.7776	0.0060					
5	10	41.5	1018.6358	0.0153	∞	1022.3883	0.0157	3584	3.7525	0.0035	9	2.4	0.2	∞	-0.0033	3.7558	3.9034	-0.1476	3.9043	-0.1521	3.7522	-0.0033	0.0036	3.7488	0.0060					
5	10	52.0	1023.1806	0.0153	∞	1026.8973	0.0158	3548	3.7167	0.0035	9	2.4	0.2	∞	-0.0033	3.7200	3.9034	-0.1834	3.9043	-0.1862	3.7182	-0.0033	0.0019	3.7148	0.0060					
5	10	65.0	1028.6722	0.0154	∞	1032.3505	0.0159	3402	3.6754	0.0036	9	2.4	0.2	∞	-0.0033	3.6816	3.9034	-0.2218	3.9043	-0.2261	3.6782	-0.0033	0.0034	3.6749	0.0060					
5	15	5.0	1001.3779	0.0050	∞	1005.2037	0.0061	82	3.8257	0.0034	8	2.4	0.2	∞	-0.0028	3.8286	3.8472	-0.0186	3.8472	-0.0178	3.8285	-0.0028	0.0001	3.8257	0.0060					
5	15	10.0	1003.6761	0.0050	∞	1007.4840	0.0061	83	3.8079	0.0034	8	2.4	0.2	∞	-0.0028	3.8108	3.8472	-0.0364	3.8463	-0.0355	3.8108	-0.0028	0.0000	3.8079	0.0060					
5	15	15.0	1005.9500	0.0151	∞	1009.7401	0.0155	3485	3.7900	0.0034	9	2.4	0.2	∞	-0.0028	3.7929	3.8472	-0.0543	3.8463	-0.0529	3.7935	-0.0028	-0.0006	3.7906	0.0060					
5	15	20.0	1008.2003	0.0151	∞	1011.9723	0.0155	3514	3.7719	0.0035	9	2.4	0.2	∞	-0.0028	3.7748	3.8472	-0.0724	3.8463	-0.0698	3.7745	-0.0028	-0.0017	3.7737	0.0060					
5	15	26.0	1010.8698	0.0152	∞	1014.6225	0.0156	3545	3.7527	0.0035	9	2.4	0.2	∞	-0.0028	3.7555	3.8472	-0.0917	3.8463	-0.0896	3.7567	-0.0028	-0.0012	3.7539	0.0060					
5	15	33.0	1013.9426	0.0152	∞	1017.6722	0.0156	3572	3.7295	0.0035	9	2.4	0.2	∞	-0.0028	3.7324	3.8472	-0.1148	3.8463	-0.1119	3.7344	-0.0028	-0.0020	3.7315	0.0060					
5	15	41.5	1017.6149	0.0153	∞	1021.3179	0.0157	3583	3.7030	0.0035	9	2.4	0.2	∞	-0.0028	3.7058	3.8472	-0.1414	3.8463	-0.1381	3.7082	-0.0028	-0.0024	3.7054	0.0060					
5	15	52.0	1022.0644	0.0153	∞	1025.7346	0.0158	3547	3.6703	0.0036	10	2.4	0.2	∞	-0.0028	3.6731	3.8472	-0.1741	3.8463	-0.1690	3.6773	-0.0028	-0.0042	3.6745	0.0060					
5	15	65.0	1027.4444	0.0154	∞	1031.0796	0.0159	3402	3.6354	0.0037	10	2.4	0.2	∞	-0.0028	3.6382	3.8472	-0.2089	3.8463	-0.2053	3.6410	-0.0028	-0.0028	3.6381	0.0060					
5	20	5.0	1000.4396	0.0050	∞	1004.2200	0.0061	82	3.7804	0.0034	8	2.4	0.2	∞	-0.0024	3.7828	3.7975	-0.0147	3.7989	-0.0164	3.7826	-0.0024	0.0003	3.7801	0.0060					
5	20	10.0	1002.6946	0.0050	∞	1006.4570	0.0061	83	3.7623	0.0034	8	2.4	0.2	∞	-0.0024	3.7648	3.7975	-0.0327	3.7989	-0.0327	3.7662	-0.0024	-0.0015	3.7638	0.0060					
5	20	15.0	1004.9262	0.0151	∞	1008.6719	0.0155	3484	3.7457	0.0035	9	2.4	0.2	∞	-0.0024	3.7481	3.7975	-0.0494	3.7989	-0.0486	3.7503	-0.0024	-0.0022	3.7479	0.0060					
5	20	20.0	1007.1348	0.0151	∞	1010.8648	0.0155	3513	3.7300	0.0035	9	2.4	0.2	∞	-0.0024	3.7324	3.7975	-0.0651	3.7989	-0.0642	3.7347	-0.0024	-0.0023	3.7323	0.0060					
5	20	26.0	1009.7552	0.0151	∞	1013.4648	0.0156	3544	3.7096	0.0035	10	2.4	0.2	∞	-0.0024	3.7120	3.7975	-0.0835	3.7989	-0.0824	3.7165	-0.0024	-0.0045	3.7141	0.0060					
5	20	33.0	1012.7721	0.0152	∞	1016.4647	0.0156	3571	3.6926	0.0036	10	2.4	0.2	∞	-0.0024	3.6951	3.7975	-0.1024	3.7989	-0.1030	3.6960	-0.0024	-0.0009	3.6935	0.0060					
5	20	41.5	1016.3784	0.0152	∞	1020.0465	0.0157	3582	3.6681	0.0036	10	2.4	0.2	∞	-0.0024	3.6706	3.7975	-0.1269	3.7989	-0.1270	3.6719	-0.0024	-0.0014	3.6695	0.0060					
5	20	52.0	1020.7493	0.0153	∞	1024.3878	0.0157	3546	3.6385	0.0037	11	2.4	0.2	∞	-0.0024	3.6409	3.7975	-0.1566	3.7989	-0.1554	3.6435	-0.0024	-0.0026	3.6411	0.0060					
5	20	65.0	1026.0366	0.0154	∞	1029.6392	0.0158	3401	3.6026	0.0038	11	2.4	0.2	∞	-0.0024	3.6050	3.7975	-0.1925	3.7989	-0.1888	3.6101	-0.0024	-0.0051	3.6077	0.0060					
5	25	5.0	999.2462	0.0050	∞	1002.9904	0.0061	82	3.7442	0.0034	9	2.4	0.2	∞	-0.0021	3.7463	3.7618	-0.0155	3.7602	-0.0153	3.7449	-0.0021	0.0015	3.7428	0.0060					
5	25	10.0	1001.4670	0.0050	∞	1005.1969	0.0061	83																						

Salinity 10

Practical salinity	Temperature T °C	Pressure P MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			$\Delta\rho$ -S-Relation												
			ρ_{H_2O} kg m ⁻³	u kg m ⁻³	v_{ref}	ρ_{sw} kg m ⁻³	u kg m ⁻³	v_{ref}	$\Delta\rho_{sw}$ kg m ⁻³	u kg m ⁻³	v_{ref}	b_0 μmol kg ⁻¹	u μmol kg ⁻¹	v_{ref}	Air		Dataset		$\Delta\rho$ -S-Relation		Relation		Air		Residu d kg m ⁻³	Salt + Air	
															$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³		$\Delta\rho_{sw}(P)$ kg m ⁻³	$\Delta\rho_{sw}(P)$ kg m ⁻³
10	5	5.0	1002.3620	0.0050	∞	1010.2474	0.0063	94	7.8854	0.0038	12	4.7	0.5	∞	-0.0039	7.8893	7.9317	-0.0424	7.9320	-0.0425	7.8895	-0.0039	-0.0002	7.8855	0.0060	7.8855	0.0060
10	5	5.0	1002.6235	0.0052	∞	1010.6235	0.0063	95	7.8433	0.0037	12	4.7	0.5	∞	-0.0039	7.8473	7.9317	-0.0840	7.9320	-0.0841	7.8470	-0.0039	-0.0003	7.8430	0.0060	7.8430	0.0060
10	5	5.0	1007.1716	0.0151	∞	1014.9743	0.0156	3531	7.8028	0.0037	12	4.7	0.5	∞	-0.0039	7.8067	7.9317	-0.1250	7.9320	-0.1256	7.8054	-0.0039	-0.0013	7.8014	0.0060	7.8014	0.0060
10	5	5.0	1009.5367	0.0151	∞	1017.2931	0.0156	3551	7.7564	0.0038	12	4.7	0.5	∞	-0.0039	7.7603	7.9317	-0.1714	7.9320	-0.1763	7.7647	-0.0039	-0.0044	7.7608	0.0060	7.7608	0.0060
10	5	26.0	1012.3408	0.0152	∞	1020.0497	0.0157	3554	7.7089	0.0038	12	4.7	0.5	∞	-0.0039	7.7128	7.9317	-0.2189	7.9320	-0.2149	7.7171	-0.0039	-0.0043	7.7132	0.0060	7.7132	0.0060
10	5	26.0	1015.5666	0.0152	∞	1023.2346	0.0157	3511	7.6587	0.0037	12	4.7	0.5	∞	-0.0039	7.6626	7.9317	-0.2691	7.9320	-0.2687	7.6663	-0.0039	-0.0047	7.6584	0.0060	7.6584	0.0060
10	5	41.5	1019.4167	0.0152	∞	1027.0152	0.0158	3363	7.6085	0.0037	12	4.7	0.5	∞	-0.0039	7.6125	7.9317	-0.3197	7.9320	-0.3317	7.6163	-0.0039	-0.0022	7.5966	0.0060	7.5966	0.0060
10	5	52.0	1024.0766	0.0154	∞	1031.5987	0.0159	3200	7.5261	0.0040	13	4.7	0.5	∞	-0.0039	7.5261	7.9317	-0.4057	7.9320	-0.4061	7.5259	-0.0039	-0.0002	7.5219	0.0060	7.5219	0.0060
10	5	65.0	1029.7021	0.0154	∞	1037.1333	0.0160	2421	7.4332	0.0042	12	4.7	0.5	∞	-0.0039	7.4371	7.9317	-0.4946	7.9320	-0.4935	7.4385	-0.0039	-0.0014	7.4346	0.0060	7.4346	0.0060
10	10	5.0	1002.0313	0.0050	∞	1009.7811	0.0063	94	7.7497	0.0038	12	4.7	0.5	∞	-0.0033	7.7531	7.7908	-0.0377	7.7914	-0.0379	7.7535	-0.0033	-0.0004	7.7502	0.0060	7.7502	0.0060
10	10	5.0	1002.2881	0.0052	∞	1010.0944	0.0063	95	7.7114	0.0038	13	4.7	0.5	∞	-0.0033	7.7147	7.7908	-0.0758	7.7914	-0.0763	7.7159	-0.0033	-0.0008	7.7132	0.0060	7.7132	0.0060
10	10	10.0	1006.7096	0.0151	∞	1014.3846	0.0156	3531	7.6750	0.0038	12	4.7	0.5	∞	-0.0033	7.6783	7.7908	-0.1125	7.7914	-0.1130	7.6784	-0.0033	-0.0001	7.6751	0.0060	7.6751	0.0060
10	10	10.0	1009.0115	0.0151	∞	1016.6506	0.0156	3551	7.6392	0.0038	12	4.7	0.5	∞	-0.0033	7.6425	7.7908	-0.1483	7.7914	-0.1494	7.6421	-0.0033	-0.0004	7.6387	0.0060	7.6387	0.0060
10	10	26.0	1011.7415	0.0152	∞	1019.3371	0.0157	3554	7.5956	0.0038	13	4.7	0.5	∞	-0.0033	7.5990	7.7908	-0.1918	7.7914	-0.1919	7.5995	-0.0033	-0.0005	7.5962	0.0060	7.5962	0.0060
10	10	33.0	1014.8201	0.0152	∞	1021.4301	0.0157	3511	7.5471	0.0037	13	4.7	0.5	∞	-0.0033	7.5504	7.7908	-0.2371	7.7914	-0.2401	7.5513	-0.0033	-0.0009	7.5485	0.0060	7.5485	0.0060
10	10	41.5	1018.6358	0.0153	∞	1026.1268	0.0158	3363	7.4910	0.0040	13	4.7	0.5	∞	-0.0033	7.4943	7.7908	-0.2965	7.7914	-0.2966	7.4948	-0.0033	-0.0005	7.4915	0.0060	7.4915	0.0060
10	10	52.0	1023.1806	0.0153	∞	1030.6309	0.0159	3200	7.4232	0.0041	13	4.7	0.5	∞	-0.0033	7.4266	7.7908	-0.3642	7.7914	-0.3635	7.4280	-0.0033	-0.0014	7.4246	0.0060	7.4246	0.0060
10	10	65.0	1028.6722	0.0154	∞	1036.0163	0.0160	2420	7.3441	0.0043	12	4.7	0.5	∞	-0.0033	7.3474	7.7908	-0.4434	7.7914	-0.4421	7.3493	-0.0033	-0.0019	7.3460	0.0060	7.3460	0.0060
10	15	5.0	1005.1799	0.0050	∞	1009.0179	0.0063	94	7.6909	0.0038	13	4.7	0.5	∞	-0.0028	7.6938	7.6766	-0.0039	7.6766	-0.0043	7.6947	-0.0028	-0.0004	7.6918	0.0060	7.6918	0.0060
10	15	10.0	1005.6761	0.0050	∞	1011.2821	0.0063	95	7.6600	0.0038	13	4.7	0.5	∞	-0.0028	7.6689	7.6766	-0.0677	7.6764	-0.0687	7.6678	-0.0028	-0.0011	7.6649	0.0060	7.6649	0.0060
10	15	15.0	1005.9500	0.0151	∞	1013.5235	0.0156	3532	7.5734	0.0038	13	4.7	0.5	∞	-0.0028	7.5754	7.6766	-0.1003	7.6764	-0.1023	7.5741	-0.0028	-0.0022	7.5713	0.0060	7.5713	0.0060
10	15	20.0	1008.2003	0.0151	∞	1015.7429	0.0156	3552	7.5425	0.0038	13	4.7	0.5	∞	-0.0028	7.5454	7.6766	-0.1312	7.6764	-0.1352	7.5412	-0.0028	-0.0028	7.5383	0.0060	7.5383	0.0060
10	15	26.0	1010.8698	0.0152	∞	1018.3723	0.0157	3554	7.5025	0.0039	14	4.7	0.5	∞	-0.0028	7.5053	7.6766	-0.1713	7.6764	-0.1738	7.5026	-0.0028	-0.0027	7.4997	0.0060	7.4997	0.0060
10	15	33.0	1013.5012	0.0152	∞	1021.0421	0.0157	3511	7.4617	0.0039	14	4.7	0.5	∞	-0.0028	7.4648	7.6766	-0.2082	7.6764	-0.2125	7.4626	-0.0028	-0.0025	7.4592	0.0060	7.4592	0.0060
10	15	41.5	1017.6149	0.0153	∞	1025.0232	0.0158	3364	7.4083	0.0040	14	4.7	0.5	∞	-0.0028	7.4111	7.6766	-0.2654	7.6764	-0.2689	7.4076	-0.0028	-0.0036	7.4047	0.0060	7.4047	0.0060
10	15	52.0	1022.0644	0.0153	∞	1029.4115	0.0159	3200	7.3471	0.0042	14	4.7	0.5	∞	-0.0028	7.3500	7.6766	-0.3266	7.6764	-0.3297	7.3467	-0.0028	-0.0032	7.3439	0.0060	7.3439	0.0060
10	15	65.0	1027.1515	0.0154	∞	1034.7210	0.0160	2421	7.2768	0.0043	13																

Salinity 15

Practical salinity S_p —	Temperature T °C	Pressure p MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			$\Delta\rho$ -S-Relation										Residual		Salt + Air	
			$\rho_{\text{H}_2\text{O}}$ kg m ⁻³	σ_t kg m ⁻³	σ_{ref}	ρ_{sw} kg m ⁻³	σ kg m ⁻³	σ_{ref}	$\Delta\rho_{\text{sw}}$ kg m ⁻³	σ kg m ⁻³	σ_{ref}	b_0 μmol kg ⁻¹	μ_{Si} μmol kg ⁻¹	σ_{ref}	Dataset				Relation		Air		r kg m ⁻³	U kg m ⁻³				
															$\Delta\rho_{\text{sw},\text{A}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{B}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{C}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{D}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{E}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{F}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{G}}$ kg m ⁻³	$\Delta\rho_{\text{sw},\text{H}}$ kg m ⁻³						
15	5	5.0	1002.3620	0.0050	—	1014.1773	0.0065	106	11.8152	0.0041	17	7.1	0.7	—	—0.0039	11.8152	1.8812	-0.0620	1.8816	-0.0624	1.8192	-0.0039	0.0000	11.8153	0.0060			
15	5	10.0	1004.7801	0.0050	—	1016.5329	0.0065	107	11.7528	0.0041	17	7.1	0.7	—	—0.0039	11.7567	1.8812	-0.1245	1.8816	-0.1249	1.7567	-0.0039	0.0000	11.7527	0.0060			
15	5	15.0	1007.1716	0.0050	—	1018.9637	0.0065	107	11.6917	0.0041	17	7.1	0.7	—	—0.0039	11.6956	1.8812	-0.1854	1.8816	-0.1858	1.6954	-0.0039	0.0000	11.6915	0.0060			
15	5	20.0	1009.5367	0.0151	—	1021.1691	0.0157	3548	11.6324	0.0041	17	7.1	0.7	—	—0.0039	11.6363	1.8812	-0.2448	1.8816	-0.2462	1.6355	-0.0039	0.0000	11.6315	0.0060			
15	5	25.0	1012.3408	0.0152	—	1023.9030	0.0158	3473	11.5622	0.0042	18	7.1	0.7	—	—0.0039	11.5661	1.8812	-0.3151	1.8816	-0.3164	1.5653	-0.0039	0.0009	11.5613	0.0060			
15	5	30.0	1015.5600	0.0152	—	1027.0489	0.0158	3264	11.4830	0.0043	18	7.1	0.7	—	—0.0039	11.4889	1.8812	-0.3942	1.8816	-0.3959	1.4857	-0.0039	0.0012	11.4818	0.0060			
15	5	35.0	1018.8457	0.0153	—	1030.8055	0.0159	2825	11.3985	0.0045	19	7.1	0.7	—	—0.0039	11.3925	1.8812	-0.4817	1.8816	-0.4839	1.3925	-0.0039	0.0009	11.3902	0.0060			
15	5	40.0	1022.0766	0.0154	—	1035.3546	0.0160	2136	11.2780	0.0046	14	7.1	0.7	—	—0.0039	11.2820	1.8812	-0.5992	1.8816	-0.5994	1.2823	-0.0039	-0.0003	11.2783	0.0060			
15	5	65.0	1029.7021	0.0154	—	1040.8496	0.0162	1375	11.1476	0.0049	11	7.1	0.7	—	—0.0039	11.1515	1.8812	-0.7288	1.8816	-0.7288	1.1529	-0.0039	-0.0014	11.1489	0.0060			
15	10	5.0	1002.0313	0.0050	—	1013.6430	0.0065	106	11.6117	0.0041	17	7.1	0.7	—	—0.0033	11.6150	1.6734	-0.0584	1.6741	-0.0556	1.6185	-0.0033	-0.0005	11.6152	0.0060			
15	10	10.0	1004.3831	0.0050	—	1015.9422	0.0065	107	11.5592	0.0041	17	7.1	0.7	—	—0.0033	11.5625	1.6734	-0.1109	1.6741	-0.1113	1.5628	-0.0033	-0.0003	11.5594	0.0060			
15	10	15.0	1006.7096	0.0151	—	1018.2157	0.0157	3506	11.4903	0.0041	17	7.1	0.7	—	—0.0033	11.4941	1.6734	-0.1640	1.6741	-0.1643	1.4903	-0.0033	-0.0001	11.4904	0.0060			
15	10	20.0	1009.0915	0.0151	—	1020.4600	0.0157	3548	11.4486	0.0042	18	7.1	0.7	—	—0.0033	11.4519	1.6734	-0.2215	1.6741	-0.2196	1.4546	-0.0033	-0.0026	11.4512	0.0060			
15	10	25.0	1011.7415	0.0152	—	1022.1955	0.0158	3473	11.3840	0.0042	18	7.1	0.7	—	—0.0033	11.3874	1.6734	-0.2860	1.6741	-0.2824	1.3918	-0.0033	-0.0044	11.3884	0.0060			
15	10	30.0	1014.8820	0.0152	—	1025.1262	0.0158	3263	11.3132	0.0043	18	7.1	0.7	—	—0.0033	11.3166	1.6734	-0.3568	1.6741	-0.3536	1.3205	-0.0033	-0.0000	11.3172	0.0060			
15	10	35.0	1018.6538	0.0153	—	1029.8665	0.0159	2825	11.2302	0.0045	19	7.1	0.7	—	—0.0033	11.2338	1.6734	-0.4394	1.6741	-0.4363	1.2309	-0.0033	-0.0003	11.2312	0.0060			
15	10	40.0	1023.1806	0.0153	—	1034.3129	0.0160	2136	11.1323	0.0046	15	7.1	0.7	—	—0.0033	11.1356	1.6734	-0.5378	1.6741	-0.5362	1.1379	-0.0033	-0.0023	11.1345	0.0060			
15	10	65.0	1029.6722	0.0154	—	1039.6877	0.0162	1375	11.0155	0.0049	12	7.1	0.7	—	—0.0033	11.0188	1.6734	-0.6546	1.6741	-0.6529	1.0213	-0.0033	-0.0025	11.0179	0.0060			
15	15	5.0	1001.3779	0.0050	—	1012.8296	0.0065	106	11.4517	0.0041	17	7.1	0.7	—	—0.0028	11.4545	1.5050	-0.0504	1.5036	-0.0502	1.4544	-0.0028	0.0011	11.4505	0.0060			
15	15	10.0	1003.7671	0.0050	—	1015.0778	0.0065	107	11.4018	0.0041	18	7.1	0.7	—	—0.0028	11.4046	1.5050	-0.1006	1.5036	-0.1006	1.4020	-0.0028	0.0016	11.4002	0.0060			
15	15	15.0	1005.9050	0.0151	—	1017.3032	0.0157	3556	11.3531	0.0042	18	7.1	0.7	—	—0.0028	11.3560	1.5050	-0.1490	1.5036	-0.1501	1.3535	-0.0028	0.0024	11.3507	0.0060			
15	15	20.0	1008.2003	0.0151	—	1019.5049	0.0157	3548	11.3046	0.0042	18	7.1	0.7	—	—0.0028	11.3074	1.5050	-0.1975	1.5036	-0.1986	1.3050	-0.0028	0.0024	11.3022	0.0060			
15	15	25.0	1010.8698	0.0152	—	1022.1174	0.0158	3473	11.2476	0.0043	19	7.1	0.7	—	—0.0028	11.2504	1.5050	-0.2545	1.5036	-0.2555	1.2481	-0.0028	0.0023	11.2453	0.0060			
15	15	30.0	1013.6249	0.0153	—	1025.1246	0.0158	3263	11.1820	0.0044	19	7.1	0.7	—	—0.0028	11.1849	1.5050	-0.3201	1.5036	-0.3201	1.1825	-0.0028	0.0001	11.1801	0.0060			
15	15	45.0	1017.6149	0.0153	—	1028.7211	0.0159	2825	11.1062	0.0045	18	7.1	0.7	—	—0.0028	11.1090	1.5050	-0.3959	1.5036	-0.3961	1.1076	-0.0028	0.0015	11.1047	0.0060			
15	15	65.0	1022.0644	0.0153	—	1033.0816	0.0160	2136	11.0172	0.0047	16	7.1	0.7	—	—0.0028	11.0201	1.5050	-0.4849	1.5036	-0.4862	1.0174	-0.0028	0.0027	11.0146	0.0060			
15	15	65.0	1022.4442	0.0154	—	1033.5848	0.0162	1375	11.0106	0.0050	12	7.1	0.7	—	—0.0028	11.0134	1.5050	-0.5915	1.5036	-0.5926	0.9110	-0.0028	0.0024	11.0082	0.0060			
15	20	5.0	1001.7536	0.0050	—	1012.7566	0.0065	106	11.3746	0.0041	18	7.1	0.7	—	—0.0024	11.3784	1.3644	-0.0448	1.3628	-0.0448	1.3148	-0.0024	0.0036	11.3700	0.0060			
15	20	10.0	1002.6946	0.0050	—	1013.6962	0.0065	107	11.2716	0.0041	18	7.1	0.7	—	—0.0024	11.2740	1.3644	-0.0903	1.3628	-0.0922	1.2706	-0.0024	0.0034	11.2682	0.0060			
15	20	15.0	1004.9622	0.0151	—	1016.1525	0.0157	3556	11.2263	0.0042	19	7.1	0.7	—	—0.0024	11.2287	1.3644	-0.1356	1.3628	-0.1371	1.2252	-0.0024	0.0035	11.2228	0.0060			
15	20	20.0	1007.1348	0.0151	—	1018.3145	0.0157	3545	11.1797	0.0042	19	7.1	0.7	—	—0.0024	11.1821	1.3644	-0.1822	1.3628	-0.1826	1.1807	-0.0024	0.0014	11.1783	0.0060			
15	20	25.0	1010.2852	0.0152	—	1020.9832	0.0158	3473	11.1251	0.0043	20	7.1	0.7	—	—0.0024	11.1303	1.3644	-0.2348	1.3628	-0.2348	1.1254	-0.0024	0.0004	11.1214	0.0060			
15	20	30.0	1012.7721	0.0152	—	1023.8399	0.0158	3262	11.0678	0.0044	20	7.1	0.7	—	—0.0024	11.0703	1.3644	-0.2941	1.3628	-0.2937	1.0691	-0.0024	0.0002	11.0667	0.0060			
15	20	41.5	1016.3784	0.0152	—	1027.3756	0.0159	2824	10.9972	0.0046	19	7.1	0.7	—	—0.0024	10.9996	1.3644	-0.3648	1.3628	-0.3636	0.9993	-0.0024	0.0003	11.0068	0.0060			
15	20	52.0	1020.7493	0.0153	—	1031.6628	0.0160	2136	10.9335	0.0048	17	7.1	0.7	—	—0.0024	10.9159	1.3644	-0.4485	1.3628	-0.4466	0.9163	-0.0024	-0.0004	11.0138	0.0060			
15	20	65.0	1025.8454	0.0154	—	1036.8056	0.0162	1375	10.8454	0.0051	13	7.1	0.7	—	—0.0024	10.8413	1.3644	-0.5457	1.3628	-0.5451	0.8407	-0.0024	-0.0007	11.0517	0.0060			
15	25	5.0	999.2642	0.0050	—	1010.4465	0.0065	106	11.2004	0.0041	18	7.1	0.7	—	—0.0021	11.2025	1.2474	-0.0449	1.2463	-0.0428	1.2035	-0.0021	-0.0011	11.2015	0.0060			
15	25	10.0	1001.4670	0.0050	—	1012.6246	0.0065	107	11.1577	0.0042	18	7.1	0.7	—	—0.0021	11.1598	1.2474	-0.0876	1.2463	-0.0857	1.1606	-0.0021	-0.0009	11.1585	0.0060			
15	25	15.0	1003.6648	0.0151	—	1014.7809	0.0157	3556	11.1161	0.0043	20	7.1	0.7	—	—0.0021	11.1182	1.2474	-0.1291	1.2463	-0.1278	1.1185	-0.0021	-0.0002	11.1164	0.0060			
15	25	20.0	1005.8400	0.0151	—	1016.9133	0.0157	3548	11.0733	0.0043	21	7.1	0.7	—	—0.0021	11.0754	1.2474	-0.1720	1.2463	-0.1692	1.0771	-0.0021	-0.0007	11.0751	0.0060			
15	25	25.0	1008.4410	0.0152	—	1019.4440	0.0158	3473	11.0285	0.0044	21	7.1	0.7	—	—0.0021	11.0289	1.2474	-0.2239	1.2463	-0.2177	1.0282	-0.0021	-0.0007	11.0277	0.0060			
15	25	30.0	1011.3928	0.0153	—	1022.3599	0.0158	3264	11.0671	0.0045	21	7.1	0.7	—	—0.0021	11.0692	1.2474	-0.2782	1.2463	-0.2729	0.9734	-0.0021	-0.0043	11.0713	0.0060			
15	25	41.5	1014.9457	0.0152	—	1025.8481	0.0159	2825	11.0203	0.0046	20	7.1	0.7	—	—0.0021	11.0404	1.2474	-0.3429	1.2463	-0.3408	0.9085	-0.0021	-0.0004	11.0604	0.0060			
15	25	52.0	1019.2528	0.0153	—	1030.0791	0.0160	2136																				

Salinity 20

Practical salinity <i>S</i> —	Temperature <i>T</i> °C	Pressure <i>p</i> MPa	Water reference density			Seawater density			Relative seawater density			Silicate molality			Δ <i>p</i> - <i>S</i> -Relation										Residual		Salt + Air	
			<i>ρ</i> _{H₂O} kg m ⁻³	<i>σ</i> _t kg m ⁻³	<i>σ</i> _{ref}	<i>ρ</i> _{sw} kg m ⁻³	<i>σ</i> _t kg m ⁻³	<i>σ</i> _{ref}	Δ <i>ρ</i> _{sw} kg m ⁻³	<i>σ</i> _t kg m ⁻³	<i>σ</i> _{ref}	<i>b</i> ₀ μmol kg ⁻¹	<i>b</i> ₀ μmol kg ⁻¹	<i>σ</i> _{ref}	Dataset				Relation		Air		Δ <i>ρ</i> _{sw} kg m ⁻³	<i>U</i> kg m ⁻³				
															Δ <i>ρ</i> _{sw} kg m ⁻³	Δ <i>ρ</i> _{H₂O} kg m ⁻³	Δ <i>ρ</i> _{sw} (<i>p</i>) kg m ⁻³	Δ <i>ρ</i> _{H₂O} (<i>p</i>) kg m ⁻³	Δ <i>ρ</i> _{sw} (<i>p</i>) kg m ⁻³	Δ <i>ρ</i> _{H₂O} (<i>p</i>) kg m ⁻³	Δ <i>ρ</i> _{sw} kg m ⁻³	Δ <i>ρ</i> _{H₂O} kg m ⁻³						
20	5	5.0	1002.3620	0.0050	∞	1018.1069	0.0067	117	15.7449	0.0044	23	9.4	0.9	∞	-0.0039	15.7488	15.8306	-0.0817	15.8307	-0.0819	15.7487	-0.0039	0.0001	15.7448	0.0060	15.7448	0.0060	
20	5	10.0	1004.7801	0.0050	∞	1020.4440	0.0067	119	15.6638	0.0045	23	9.4	0.9	∞	-0.0039	15.6678	15.8306	-0.1628	15.8307	-0.1641	15.6666	-0.0039	0.0012	15.6626	0.0060	15.6626	0.0060	
20	5	15.0	1007.1716	0.0151	∞	1022.7556	0.0157	3551	15.5840	0.0044	22	9.4	0.9	∞	-0.0039	15.5880	15.8306	-0.2426	15.8307	-0.2446	15.5860	-0.0039	0.0020	15.5820	0.0060	15.5820	0.0060	
20	5	20.0	1009.5367	0.0151	∞	1025.0410	0.0158	3483	15.5043	0.0045	23	9.4	0.9	∞	-0.0039	15.5082	15.8306	-0.3224	15.8307	-0.3237	15.5070	-0.0039	0.0012	15.5030	0.0060	15.5030	0.0060	
20	5	26.0	1012.3408	0.0152	∞	1027.7530	0.0159	3265	15.4122	0.0046	23	9.4	0.9	∞	-0.0039	15.4161	15.8306	-0.4144	15.8307	-0.4163	15.4144	-0.0039	0.0017	15.4105	0.0060	15.4105	0.0060	
20	5	33.0	1015.5660	0.0152	∞	1030.8742	0.0159	2811	15.3082	0.0047	21	9.4	0.9	∞	-0.0039	15.3121	15.8306	-0.5184	15.8307	-0.5212	15.3094	-0.0039	0.0027	15.3055	0.0060	15.3055	0.0060	
20	5	41.5	1019.6167	0.0153	∞	1034.6007	0.0161	2107	15.1840	0.0049	18	9.4	0.9	∞	-0.0039	15.1879	15.8306	-0.6427	15.8307	-0.6447	15.1864	-0.0039	0.0016	15.1824	0.0060	15.1824	0.0060	
20	5	52.0	1024.0766	0.0154	∞	1039.1142	0.0162	1335	15.0576	0.0052	14	9.4	0.9	∞	-0.0039	15.0415	15.8306	-0.7891	15.8307	-0.7899	15.0408	-0.0039	0.0008	15.0368	0.0060	15.0368	0.0060	
20	5	65.0	1029.7021	0.0154	∞	1044.5684	0.0164	738	14.8664	0.0056	10	9.4	0.9	∞	-0.0039	14.8703	15.8306	-0.9603	15.8307	-0.9609	14.8698	-0.0039	0.0005	14.8658	0.0060	14.8658	0.0060	
20	10	5.0	1002.0313	0.0050	∞	1017.5126	0.0067	117	15.4812	0.0044	23	9.4	0.9	∞	-0.0033	15.4846	15.5596	-0.0750	15.5583	-0.0729	15.4854	-0.0033	-0.0008	15.4821	0.0060	15.4821	0.0060	
20	10	10.0	1004.3831	0.0050	∞	1019.7916	0.0067	119	15.4085	0.0045	23	9.4	0.9	∞	-0.0033	15.4118	15.5596	-0.1477	15.5583	-0.1462	15.4122	-0.0033	-0.0004	15.4088	0.0060	15.4088	0.0060	
20	10	15.0	1006.7096	0.0151	∞	1022.0447	0.0157	3551	15.3351	0.0045	23	9.4	0.9	∞	-0.0033	15.3384	15.5596	-0.2211	15.5583	-0.2181	15.3403	-0.0033	-0.0019	15.3369	0.0060	15.3369	0.0060	
20	10	20.0	1009.0115	0.0151	∞	1024.2731	0.0158	3482	15.2617	0.0045	23	9.4	0.9	∞	-0.0033	15.2650	15.5596	-0.2945	15.5583	-0.2886	15.2697	-0.0033	-0.0047	15.2664	0.0060	15.2664	0.0060	
20	10	26.0	1011.7415	0.0152	∞	1026.9200	0.0159	3265	15.1785	0.0046	23	9.4	0.9	∞	-0.0033	15.1819	15.5596	-0.3777	15.5583	-0.3714	15.1869	-0.0033	-0.0050	15.1836	0.0060	15.1836	0.0060	
20	10	33.0	1014.8829	0.0152	∞	1029.9701	0.0159	2811	15.0872	0.0047	22	9.4	0.9	∞	-0.0033	15.0905	15.5596	-0.4690	15.5583	-0.4654	15.0929	-0.0033	-0.0024	15.0896	0.0060	15.0896	0.0060	
20	10	41.5	1018.6358	0.0153	∞	1033.6146	0.0161	2107	14.9788	0.0049	19	9.4	0.9	∞	-0.0033	14.9821	15.5596	-0.5774	15.5583	-0.5758	14.9825	-0.0033	-0.0004	14.9792	0.0060	14.9792	0.0060	
20	10	52.0	1023.1806	0.0153	∞	1038.0290	0.0162	1335	14.8484	0.0052	14	9.4	0.9	∞	-0.0033	14.8517	15.5596	-0.7078	15.5583	-0.7067	14.8516	-0.0033	0.0001	14.8483	0.0060	14.8483	0.0060	
20	10	65.0	1028.6722	0.0154	∞	1043.3658	0.0164	738	14.6936	0.0056	10	9.4	0.9	∞	-0.0033	14.6969	15.5596	-0.8626	15.5583	-0.8609	14.6975	-0.0033	-0.0006	14.6941	0.0060	14.6941	0.0060	
20	15	5.0	1001.3779	0.0050	∞	1016.6428	0.0067	117	15.2649	0.0044	23	9.4	0.9	∞	-0.0028	15.2677	15.3331	-0.0654	15.3339	-0.0659	15.2681	-0.0028	-0.0003	15.2652	0.0060	15.2652	0.0060	
20	15	10.0	1003.6761	0.0050	∞	1018.8756	0.0067	119	15.1995	0.0045	23	9.4	0.9	∞	-0.0028	15.2024	15.3331	-0.1308	15.3339	-0.1321	15.2019	-0.0028	0.0005	15.1990	0.0060	15.1990	0.0060	
20	15	15.0	1005.9500	0.0151	∞	1021.0853	0.0157	3551	15.1353	0.0045	24	9.4	0.9	∞	-0.0028	15.1381	15.3331	-0.1950	15.3339	-0.1971	15.1368	-0.0028	0.0013	15.1339	0.0060	15.1339	0.0060	
20	15	20.0	1008.2003	0.0151	∞	1023.2718	0.0158	3483	15.0715	0.0046	24	9.4	0.9	∞	-0.0028	15.0744	15.3331	-0.2588	15.3339	-0.2610	15.0729	-0.0028	0.0013	15.0701	0.0060	15.0701	0.0060	
20	15	26.0	1010.8698	0.0152	∞	1025.8658	0.0159	3265	14.9960	0.0047	24	9.4	0.9	∞	-0.0028	14.9988	15.3331	-0.3343	15.3339	-0.3360	14.9979	-0.0028	0.0010	14.9950	0.0060	14.9950	0.0060	
20	15	33.0	1013.9426	0.0152	∞	1028.8528	0.0159	2811	14.9102	0.0048	23	9.4	0.9	∞	-0.0028	14.9130	15.3331	-0.4201	15.3339	-0.4213	14.9126	-0.0028	0.0004	14.9097	0.0060	14.9097	0.0060	
20	15	41.5	1017.6149	0.0153	∞	1032.4248	0.0161	2107	14.8098	0.0050	19	9.4	0.9	∞	-0.0028	14.8127	15.3331	-0.5204	15.3339	-0.5217	14.8123	-0.0028	0.0004	14.8094	0.0060	14.8094	0.0060	
20	15	52.0	1022.0644	0.0153	∞	1036.7551	0.0162	1335	14.6907	0.0053	15	9.4	0.9	∞	-0.0028	14.6936	15.3331	-0.6395	15.3339	-0.6408	14.6931	-0.0028	0.0005	14.6903	0.0060	14.6903	0.0060	
20	15	65.0	1027.4444	0.0154	∞	1041.9938	0.0164	738	14.5496	0.0056	10	9.4	0.9	∞	-0.0028	14.5524	15.3331	-0.7807	15.3339	-0.7815	14.5524	-0.0028	0.0000	14.5495	0.0060	14.5495	0.0060	
20	20	5.0	1000.4966	0.0050	∞	1015.5268	0.0067	117	15.0872	0.0044	23	9.4	0.9	∞	-0.0024	15.0896	15.1495	-0.0598	15.1481	-0.0604	15.0877	-0.0024	0.0019	15.0853	0.0060	15.0853	0.0060	
20	20	10.0	1002.6946	0.0050	∞	1017.7219	0.0067	119	15.0273	0.0045	23	9.4	0.9	∞	-0.0024	15.0297	15.1495	-0.1198	15.1481	-0.1210	15.0270	-0.0024	0.0027	15.0246	0.0060	15.0246	0.0060	
20	20	15.0	1004.9262	0.0151	∞	1019.8928	0.0157	3550	14.9666	0.0046	25	9.4	0.9	∞	-0.0024	14.9690	15.1495	-0.1804	15.1481	-0.1807	14.9674	-0.0024	0.0017	14.9649	0.0060	14.9649	0.0060	
20	20	20.0	1007.1348	0.0151	∞	1022.0404	0.0158	3482	14.9056	0.0046	25	9.4	0.9	∞	-0.0024	14.9080	15.1495	-0.2414	15.1481	-0.2393	14.9088	-0.0024	-0.0007	14.9063	0.0060	14.9063	0.0060	
20	20	26.0	1009.7552	0.0151	∞	1024.5930	0.0159	3264	14.8378	0.0047	25	9.4	0.9	∞	-0.0024	14.8403	15.1495	-0.3092	15.1481	-0.3082	14.8399	-0.0024	0.0004	14.8374	0.0060	14.8374	0.0060	
20	20	33.0	1012.7721	0.0152	∞	1027.5342	0.0159	2811	14.7621	0.0048	24	9.4	0.9	∞	-0.0024	14.7645	15.1495	-0.3850	15.1481	-0.3866	14.7615	-0.0024	0.0030	14.7591	0.0060	14.7591	0.0060	
20	20	41.5	1016.3784	0.0152	∞	1031.0493	0.0161	2106	14.6709	0.0050	20	9.4	0.9	∞	-0.0024	14.6733	15.1495	-0.4762	15.1481	-0.4789	14.6692	-0.0024	0.0041	14.6668	0.0060	14.6668	0.0060	
20	20	52.0	1020.7493	0.0153	∞	1035.3084	0.0162	1335	14.5591	0.0053	15	9.4	0.9	∞	-0.0024	14.5615	15.1495											

Salinity 25

Practical salinity S —	Temperature T °C	Pressure P MPa	Water reference density				Seawater density				Relative seawater density				Silicate molality				$\Delta\rho$ - S Relation										Residual d kg m ⁻³	Salt + Air	
			ρ_{H_2O} kg m ⁻³	ρ kg m ⁻³	ρ_{ref}	ρ_{H_2O} kg m ⁻³	ρ kg m ⁻³	ρ_{ref}	$\Delta\rho_{H_2O}$ kg m ⁻³	$\Delta\rho$ kg m ⁻³	$\Delta\rho_{ref}$	b_0 μmol kg ⁻¹	ρ μmol kg ⁻¹	ρ_{ref}	Air		Dataset		Relation		Relation		Air								
															$\Delta\rho_{H_2O}$ kg m ⁻³	$\Delta\rho_{H_2O}$ kg m ⁻³	$\Delta\rho_{H_2O}(P_0)$ kg m ⁻³	$\Delta\rho_{H_2O}(P)$ kg m ⁻³	$\Delta\rho_{H_2O}(P_0)$ kg m ⁻³	$\Delta\rho_{H_2O}(P)$ kg m ⁻³	$\Delta\rho_{H_2O}$ kg m ⁻³	$\Delta\rho_{H_2O}(P)$ kg m ⁻³	$\Delta\rho_{H_2O}$ kg m ⁻³	$\Delta\rho_{H_2O}(P)$ kg m ⁻³							
25	5	5.0	1002.3620	0.0050	∞	1022.0388	0.0071	141	19.6708	0.0050	35	11.8	1.2	∞	-0.0039	19.6808	19.7826	-0.1018	19.7819	-0.1011	19.6808	-0.0039	0.0000	19.6768	0.0060	0.0000	19.6768				
25	5	10.0	1004.7801	0.0050	∞	1024.3556	0.0071	143	19.5755	0.0050	36	11.8	1.2	∞	-0.0039	19.5794	19.7826	-0.2032	19.7819	-0.2027	19.5792	-0.0039	0.0002	19.5753	0.0060	0.0000	19.5753				
25	5	15.0	1007.1716	0.0151	∞	1026.6460	0.0159	3429	19.4744	0.0051	35	11.8	1.2	∞	-0.0039	19.4784	19.7826	-0.3042	19.7819	-0.3024	19.4795	-0.0039	0.0010	19.4756	0.0060	0.0000	19.4756				
25	5	20.0	1009.5367	0.0151	∞	1028.9145	0.0160	3124	19.3778	0.0052	34	11.8	1.2	∞	-0.0039	19.3778	19.7826	-0.4002	19.7819	-0.4002	19.3771	-0.0039	0.0000	19.3778	0.0060	0.0000	19.3778				
25	5	26.0	1012.3408	0.0152	∞	1031.6037	0.0161	2502	19.2629	0.0053	30	11.8	1.2	∞	-0.0039	19.2668	19.7826	-0.5158	19.7819	-0.5149	19.2670	-0.0039	-0.0002	19.2630	0.0060	0.0000	19.2630				
25	5	33.0	1015.5660	0.0152	∞	1034.6983	0.0162	1695	19.1323	0.0055	23	11.8	1.2	∞	-0.0039	19.1362	19.7826	-0.6463	19.7819	-0.6451	19.1368	-0.0039	-0.0006	19.1329	0.0060	0.0000	19.1329				
25	5	41.5	1019.1467	0.0153	∞	1038.3961	0.0164	974	18.9794	0.0058	16	11.8	1.2	∞	-0.0039	18.9834	19.7826	-0.7992	19.7819	-0.7978	18.9841	-0.0039	-0.0007	18.9801	0.0060	0.0000	18.9801				
25	5	52.0	1024.0766	0.0154	∞	1042.8758	0.0166	501	18.7992	0.0063	10	11.8	1.2	∞	-0.0039	18.8031	19.7826	-0.9794	19.7819	-0.9786	18.8033	-0.0039	-0.0001	18.7993	0.0060	0.0000	18.7993				
25	5	65.0	1029.7021	0.0154	∞	1048.2909	0.0169	247	18.5888	0.0069	7	11.8	1.2	∞	-0.0039	18.5928	19.7826	-1.1898	19.7819	-1.1910	18.5908	-0.0039	0.0020	18.5869	0.0060	0.0000	18.5869				
25	10	5.0	1002.0313	0.0050	∞	1021.3835	0.0071	141	19.5522	0.0050	35	11.8	1.2	∞	-0.0033	19.5556	19.4452	-0.0896	19.4465	-0.0900	19.5565	-0.0033	-0.0009	19.5531	0.0060	0.0000	19.5531				
25	10	10.0	1004.3831	0.0050	∞	1023.6468	0.0071	143	19.2637	0.0050	36	11.8	1.2	∞	-0.0033	19.2671	19.4452	-0.1781	19.4465	-0.1806	19.2660	-0.0033	0.0011	19.2626	0.0060	0.0000	19.2626				
25	10	15.0	1006.7096	0.0151	∞	1025.8835	0.0159	3430	19.1738	0.0051	36	11.8	1.2	∞	-0.0033	19.1772	19.4452	-0.2680	19.4465	-0.2695	19.1770	-0.0033	0.0002	19.1736	0.0060	0.0000	19.1736				
25	10	20.0	1009.0115	0.0151	∞	1028.0992	0.0160	3124	19.0878	0.0052	35	11.8	1.2	∞	-0.0033	19.0911	19.4452	-0.3541	19.4465	-0.3569	19.0896	-0.0033	0.0015	19.0863	0.0060	0.0000	19.0863				
25	10	26.0	1011.7415	0.0152	∞	1030.7266	0.0161	2502	18.9851	0.0053	30	11.8	1.2	∞	-0.0033	18.9885	19.4452	-0.4567	19.4465	-0.4595	18.9870	-0.0033	0.0015	18.9837	0.0060	0.0000	18.9837				
25	10	33.0	1014.8829	0.0152	∞	1033.7534	0.0162	1696	18.8705	0.0056	24	11.8	1.2	∞	-0.0033	18.8738	19.4452	-0.5714	19.4465	-0.5761	18.8704	-0.0033	0.0034	18.8671	0.0060	0.0000	18.8671				
25	10	41.5	1018.6358	0.0153	∞	1037.3692	0.0164	975	18.7333	0.0059	16	11.8	1.2	∞	-0.0033	18.7367	19.4452	-0.7085	19.4465	-0.7131	18.7334	-0.0033	0.0033	18.7301	0.0060	0.0000	18.7301				
25	10	52.0	1023.1806	0.0153	∞	1041.7538	0.0166	501	18.5731	0.0063	11	11.8	1.2	∞	-0.0033	18.5765	19.4452	-0.8687	19.4465	-0.8756	18.5709	-0.0033	0.0056	18.5675	0.0060	0.0000	18.5675				
25	10	65.0	1028.6722	0.0154	∞	1047.0542	0.0169	247	18.3820	0.0070	7	11.8	1.2	∞	-0.0033	18.3854	19.4452	-1.0598	19.4465	-1.0671	18.3794	-0.0033	0.0059	18.3761	0.0060	0.0000	18.3761				
25	15	5.0	1001.3779	0.0050	∞	1020.4633	0.0071	141	19.0853	0.0050	35	11.8	1.2	∞	-0.0028	19.0882	19.1706	-0.0824	19.1695	-0.0814	19.0881	-0.0028	0.0000	19.0853	0.0060	0.0000	19.0853				
25	15	10.0	1003.6761	0.0050	∞	1022.6800	0.0071	143	19.0040	0.0050	36	11.8	1.2	∞	-0.0028	19.0068	19.1706	-0.1638	19.1695	-0.1632	19.0063	-0.0028	0.0005	19.0034	0.0060	0.0000	19.0034				
25	15	15.0	1005.9500	0.0151	∞	1024.8723	0.0159	3429	18.9223	0.0051	37	11.8	1.2	∞	-0.0028	18.9251	19.1706	-0.2455	19.1695	-0.2438	18.9257	-0.0028	-0.0006	18.9229	0.0060	0.0000	18.9229				
25	15	20.0	1008.2023	0.0151	∞	1027.0423	0.0160	3124	18.8420	0.0052	35	11.8	1.2	∞	-0.0028	18.8449	19.1706	-0.3257	19.1695	-0.3229	18.8446	-0.0028	-0.0017	18.8428	0.0060	0.0000	18.8428				
25	15	26.0	1010.8698	0.0152	∞	1029.6204	0.0161	2502	18.7506	0.0054	31	11.8	1.2	∞	-0.0028	18.7534	19.1706	-0.4172	19.1695	-0.4159	18.7536	-0.0028	-0.0001	18.7507	0.0060	0.0000	18.7507				
25	15	33.0	1013.9426	0.0152	∞	1032.5848	0.0162	1695	18.6421	0.0056	24	11.8	1.2	∞	-0.0028	18.6450	19.1706	-0.5256	19.1695	-0.5217	18.6478	-0.0028	-0.0028	18.6449	0.0060	0.0000	18.6449				
25	15	41.5	1017.6149	0.0153	∞	1036.1331	0.0164	974	18.5181	0.0059	17	11.8	1.2	∞	-0.0028	18.5210	19.1706	-0.6496	19.1695	-0.6463	18.5232	-0.0028	-0.0023	18.5204	0.0060	0.0000	18.5204				
25	15	52.0	1022.0644	0.0153	∞	1040.4351	0.0166	501	18.3708	0.0064	11	11.8	1.2	∞	-0.0028	18.3736	19.1706	-0.7970	19.1695	-0.7942	18.3753	-0.0028	-0.0017	18.3724	0.0060	0.0000	18.3724				
25	15	65.0	1027.4442	0.0154	∞	1045.6407	0.0169	247	18.1965	0.0070	7	11.8	1.2	∞	-0.0028	18.1993	19.1706	-0.9713	19.1695	-0.9689	18.2006	-0.0028	-0.0013	18.1977	0.0060	0.0000	18.1977				
25	20	5.0	1000.4396	0.0050	∞	1019.2996	0.0071	141	18.8600	0.0050	35	11.8	1.2	∞	-0.0024	18.8625	18.9371	-0.0746	18.9396	-0.0746	18.8630	-0.0024	-0.0025	18.8626	0.0060	0.0000	18.8626				
25	20	10.0	1002.6946	0.0050	∞	1021.4776	0.0071	142	18.7830	0.0050	36	11.8	1.2	∞	-0.0024	18.7854	18.9371	-0.1517	18.9396	-0.1496	18.7899	-0.0024	-0.0045	18.7875	0.0060	0.0000	18.7875				
25	20	15.0	1004.9262	0.0151	∞	1023.6366	0.0159	3428	18.7104	0.0052	38	11.8	1.2	∞	-0.0024	18.7128	18.9371	-0.2243	18.9396	-0.2235	18.7160	-0.0024	-0.0032	18.7136	0.0060	0.0000	18.7136				
25	20	20.0	1007.1348	0.0151	∞	1025.7710	0.0160	3123	18.6362	0.0053	37	11.8	1.2	∞	-0.0024	18.6387	18.9371	-0.2984	18.9396	-0.2962	18.6434	-0.0024	-0.0047	18.6410	0.0060	0.0000	18.6410				
25	20	26.0	1009.7552	0.0151	∞	1028.3048	0.0161	2501	18.5496	0.0054	32	11.8	1.2	∞	-0.0024	18.5521	18.9371	-0.3850	18.9396	-0.3816	18.5579	-0.0024	-0.0059	18.5555	0.0060	0.0000	18.5555				
25	20	33.0	1012.7721	0.0152	∞	1031.2242	0.0162	1695	18.4522	0.0056	25	11.8	1.2	∞	-0.0024	18.4546	18.9371	-0.4825	18.9396	-0.4789	18.4607	-0.0024	-0.0061	18.4582	0.0060	0.0000	18.4582				
25	20	41.5	1016.3784	0.0152	∞	1034.7155	0.0164	974	18.3371	0.0060	17	11.8	1.2	∞	-0.0024	18.3395	18.9371	-0.5975	18.9396	-0.5935	18.3461	-0.0024	-0.0065	18.3437	0.0060	0.0000	18.3437				
25	20	52.0	1020.7493	0.0153	∞	1038.9512	0.0166	501	18.2019	0																					

Salinity 30

[illegible]

Salinity 35

[illegible]

Sect. 4 (coefficients)

Auxiliary coefficients			Coefficients of $\Delta\rho_{sw,0}(p_0)$			Coefficients of $\Delta\Delta\rho_{sw,0}(p - p_0)$				Coefficients of $\Delta\rho_{sw,a}$	
Coefficient	Unit	Value	i	j	$a_{i,j}$	i	j	k	$b_{i,j,k}$	i	c_i
S_o	-	35	0	0	2.65627133E+02	0	0	0	-7.739482E+02	0	1.03E-01
T_o	K	288.15	0	1	-2.272462E+01	0	0	1	7.621224E+01	1	-2.371E+05
p_o	MPa	0.101325	0	2	3.17932E+00	0	0	2	-2.47174E+00	2	1.82E-07
π_o	-	1000	0	3	-2.78076E-01	0	0	3	-5.109E-01	ΔT	75
$\Delta\rho_{o,0}$	kg m ⁻³	30	0	4	-3.7051E-02	0	0	4	5.975E-02		
$\Delta\Delta\rho_{o,0}$	kg m ⁻³	2	0	5	-6.648E-03	0	1	0	2.95926E+00		
						0	1	1	-1.98326E+00		
						0	1	2	5.0082E-01		
						0	1	3	-6.353E-02		
						0	2	0	-4.73032E+00		
						0	2	1	-1.2834E+00		
						0	2	2	-7.863E-02		
						0	3	0	4.9266E-01		
						0	3	1	-1.9762E-01		
						0	4	0	-5.466E-02		
						1	0	0	2.7623136E+03		
						1	0	1	-2.061301E+02		
						1	0	2	5.30055E+00		
						1	0	3	3.8065E-01		
						1	1	0	2.09786E+00		
						1	1	1	4.38047E+00		
						1	1	2	-2.5183E-01		
						1	2	0	8.72384E+00		
						1	2	1	1.7845E+00		
						1	3	0	-1.2344E-01		
						2	0	0	-3.72241428E+03		
2	0	1	1.8587744E+02								
2	0	2	-2.80757E+00								
2	1	0	-1.147437E+01								
2	1	1	-2.9345E+00								
2	2	0	-4.66432E+00								
3	0	0	2.2414666E+03								
3	0	1	-5.56069E+01								
3	1	0	6.98502E+00								
4	0	0	-5.0878713E+02								

Sect. 4 (validation measurements)

Date of salinity measurement	Practical salinity from measurement					Temperature	Pressure	Date of density measurement	Seawater density from substitution measurement			Density correction to (integer) target salinity			Density change due to preparation (isotopic composition)			Density change due to storage (salt composition)			Density correction due to measurement (air saturation)			Practical salinity	Temperature	Pressure	Water reference density			Seawater density (at uniform conditions)			Relative seawater density			Silicate molality			Air			Dataset	Deviation	
	S	n(S)	dp/dS	$\mu(\rho)$	v				$\rho_{SW,sub}$	μ	V _{air}	$\Delta\rho_{SW,salt}$	μ	V _{air}	$\Delta\rho_{SW,iso}$	μ	V _{air}	$\Delta\rho_{SW,salt}$	μ	V _{air}	$\Delta\rho_{SW,salt}$	μ	V _{air}				$\Delta\rho_{SW,sat}$	μ	V _{air}	$\rho_{SW,ref}$	μ	V _{air}	ρ_{SW}	μ	V _{air}	$\Delta\rho_{SW}$	μ	V _{air}	b_0	μ	V _{air}			$\Delta\rho_{SW}$
2011-10	2.0010	0.0011	0.80	0.0009	2	5	0.101325	2014-09	1001.5578	0.0008	60	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0018	0.0002	-	-0.0010	0.0002	-	2	5	0.101325	999.9666	0.0005	-	1001.5562	0.0012	8	1.5896	0.0011	6	0.9	0.1	-	-0.0039	1.5935	1.5935	0.0000	-0.3	-0.3
2011-10	2.0010	0.0011	0.78	0.0009	2	10	0.101325	2014-09	1001.2647	0.0008	60	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0018	0.0002	-	-0.0006	0.0002	-	2	10	0.101325	999.7025	0.0005	-	1001.2636	0.0012	8	1.5611	0.0011	6	0.9	0.1	-	-0.0033	1.5644	1.5644	0.0000	-0.6	-0.6
2011-10	2.0010	0.0011	0.77	0.0008	2	15	0.101325	2014-09	1000.4427	0.0008	60	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0018	0.0002	-	-0.0003	0.0002	-	2	15	0.101325	999.1026	0.0005	-	1000.4419	0.0012	8	1.5393	0.0011	6	0.9	0.1	-	-0.0028	1.5421	1.5421	0.0000	0.0	0.0
2011-10	2.0010	0.0011	0.76	0.0008	2	20	0.101325	2014-09	999.7271	0.0008	60	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0018	0.0002	-	-0.0000	0.0000	-	2	20	0.101325	998.2707	0.0005	-	999.7266	0.0012	8	1.5194	0.0011	6	0.9	0.1	-	-0.0034	1.5219	1.5219	0.0000	-1.0	-1.0
2011-10	2.0010	0.0011	0.75	0.0008	2	25	0.101325	2014-09	998.5455	0.0008	60	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0018	0.0002	-	0.0002	0.0002	-	2	25	0.101325	997.0476	0.0005	-	998.5522	0.0012	9	1.5046	0.0011	6	0.9	0.1	-	-0.0021	1.5066	1.5066	0.0000	-0.0	-0.0
2011-03	9.9887	0.0003	0.80	0.0002	6	1	0.101325	2015-09	1007.9566	0.0009	70	0.0091	0.0000	-	-0.0018	-0.0003	0.0002	0.0030	0.0002	-	-0.0015	0.0002	-	10	1	0.101325	999.9018	0.0005	-	1007.9627	0.0009	93	8.0608	0.0008	47	4.7	0.5	-	-0.0045	8.0654	8.0654	0.0000	-1.9	-1.9
2011-10	14.9999	0.0002	0.80	0.0002	8	1	0.101325	2015-09	1011.9786	0.0009	79	0.0001	0.0000	-	-0.0014	-0.0003	0.0002	0.0022	0.0002	-	-0.0015	0.0002	-	15	1	0.101325	999.9018	0.0005	-	1011.9762	0.0009	103	12.0743	0.0008	53	7.1	0.7	-	-0.0045	12.0789	12.0789	0.0000	-1.8	-1.8
2011-10	20.0009	0.0003	0.80	0.0002	7	1	0.101325	2015-09	1015.9912	0.0009	89	-0.0007	0.0000	-	-0.0011	-0.0003	0.0002	0.0021	0.0002	-	-0.0015	0.0002	-	20	1	0.101325	999.9018	0.0005	-	1015.9877	0.0010	115	16.0859	0.0008	63	9.4	0.9	-	-0.0045	16.0904	16.0904	0.0000	-0.7	-0.7
2011-10	25.0047	0.0002	0.80	0.0002	17	1	0.101325	2015-09	1020.0045	0.0009	99	-0.0038	0.0000	-	-0.0007	-0.0003	0.0002	0.0020	0.0002	-	-0.0015	0.0000	-	25	1	0.101325	999.9018	0.0005	-	1019.9977	0.0010	116	20.0959	0.0008	64	11.8	1.2	-	-0.0045	20.1004	20.1004	0.0000	-1.5	-1.5
2011-03	29.9689	0.0003	0.80	0.0002	25	1	0.101325	2015-09	1023.9936	0.0009	110	0.0250	0.0000	-	-0.0004	-0.0003	0.0002	0.0033	0.0002	-	-0.0015	0.0002	-	30	1	0.101325	999.9018	0.0005	-	1024.0139	0.0010	144	24.1121	0.0009	55	14.1	1.4	-	-0.0045	24.1166	24.1166	0.0000	2.1	2.1
2011-03	34.9917	0.0002	0.80	0.0002	2	1	0.101325	2015-09	1028.0270	0.0010	121	0.0067	0.0000	-	0.0000	-0.0003	0.0000	0.0034	0.0002	-	-0.0015	0.0002	-	35	1	0.101325	999.9018	0.0005	-	1028.0285	0.0010	144	28.1267	0.0009	85	16.5	1.7	-	-0.0045	28.1312	28.1312	0.0000	2.4	2.4
2011-10	2.0010	0.0011	0.80	0.0009	2	5	5.0	2014-11	1003.9439	0.0058	71	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	5.0	1002.3620	0.0050	-	1003.9422	0.0059	73	1.5802	0.0031	6	0.9	0.1	-	-0.0039	1.5841	1.5935	-0.0094	-0.7	-0.7
2011-10	2.0010	0.0011	0.80	0.0009	2	5	10.0	2014-11	1006.3555	0.0058	71	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	10.0	1004.7801	0.0050	-	1006.3518	0.0059	73	1.5717	0.0031	6	0.9	0.1	-	-0.0039	1.5757	1.5935	-0.0179	-0.2	-0.2
2011-10	2.0010	0.0011	0.78	0.0009	2	10	10.0	2014-11	1008.7556	0.0154	3444	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	15.0	1007.7716	0.0151	-	1008.7339	0.0154	3379	1.5623	0.0030	5	0.9	0.1	-	-0.0039	1.5663	1.5935	-0.0273	-0.9	-0.9
2011-10	2.0010	0.0011	0.80	0.0009	2	5	20.0	2014-11	1011.0911	0.0154	3444	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	20.0	1009.5367	0.0151	-	1011.0894	0.0154	3408	1.5526	0.0030	5	0.9	0.1	-	-0.0039	1.5566	1.5935	-0.0369	-2.1	-2.1
2011-10	2.0010	0.0011	0.80	0.0009	2	5	26.0	2014-11	1013.8870	0.0155	3480	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	26.0	1012.3408	0.0152	-	1013.8853	0.0155	3443	1.5445	0.0030	5	0.9	0.1	-	-0.0039	1.5485	1.5935	-0.0450	-0.3	-0.3
2011-10	2.0010	0.0011	0.80	0.0009	2	5	33.0	2014-11	1017.0999	0.0155	3521	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	33.0	1015.5660	0.0152	-	1017.0982	0.0155	3484	1.5323	0.0030	5	0.9	0.1	-	-0.0039	1.5362	1.5935	-0.0573	-1.4	-1.4
2011-10	2.0010	0.0011	0.80	0.0009	2	5	41.5	2014-11	1020.9372	0.0156	3570	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	41.5	1019.4167	0.0153	-	1020.9355	0.0156	3532	1.5188	0.0030	5	0.9	0.1	-	-0.0039	1.5227	1.5935	-0.0708	-1.8	-1.8
2011-10	2.0010	0.0011	0.80	0.0009	2	5	52.0	2014-11	1025.5815	0.0156	3626	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	52.0	1024.0766	0.0154	-	1025.5798	0.0157	3588	1.5032	0.0030	5	0.9	0.1	-	-0.0039	1.5072	1.5935	-0.0863	-1.9	-1.9
2011-10	2.0010	0.0011	0.80	0.0009	2	5	65.0	2014-11	1031.1899	0.0157	3688	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0019	0.0002	-	-0.0010	0.0002	-	2	5	65.0	1029.7021	0.0154	-	1031.1882	0.0157	3649	1.4861	0.0030	5	0.9	0.1	-	-0.0039	1.4900	1.5935	-0.1035	-1.0	-1.0
2011-10	2.0010	0.0011	0.78	0.0009	2	10	5.0	2015-05	1003.5861	0.0058	71	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0022	0.0002	-	-0.0006	0.0002	-	2	10	5.0	1002.0313	0.0050	-	1003.5845	0.0059	73	1.5532	0.0031	6	0.9	0.1	-	-0.0033	1.5566	1.5644	-0.0079	-0.4	-0.4
2011-10	2.0010	0.0011	0.78	0.0009	2	10	10.0	2015-05	1005.9277	0.0058	71	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0022	0.0002	-	-0.0006	0.0002	-	2	10	10.0	1004.3831	0.0050	-	1005.9261	0.0059	73	1.5431	0.0031	6	0.9	0.1	-	-0.0033	1.5464	1.5644	-0.0180	-2.6	-2.6
2011-10	2.0010	0.0011	0.78	0.0009	2	10	15.0	2015-05	1008.2472	0.0154	3444	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0022	0.0002	-	-0.0006	0.0002	-	2	10	15.0	1006.7096	0.0151	-	1008.2457	0.0154	3382	1.5360	0.0031	5	0.9	0.1	-	-0.0033	1.5394	1.5644	-0.0250	-1.8	-1.8
2011-10	2.0010	0.0011	0.78	0.0009	2	10	20.0	2015-05	1010.5414	0.0154	3444	-0.0008	0.0000	-	-0.0023	-0.0003	0.0002	0.0022	0.0002																									