

Announcement

International Oceanographic Tables for the oxygen solubility in seawater

In 1974 the second volume of the *International Oceanographic Tables* was jointly published by the National Institute of Oceanography and the United Nations Educational Scientific and Cultural Organization under the supervision of the SCOR-UNESCO-ICES-IAPSO Joint Panel of Experts for Oceanographic Tables and Standards.

This volume contains tables for the oxygen saturation of seawater in the range from 0 to 41.5‰ salinity and 0°C to 35°C. The units selected for the presentation of the oxygen saturation values are $\text{cm}^3 \text{dm}^{-3}$ with intervals of 0.5‰ and 0.2°C and $\text{cm}^3 \text{dm}^{-3}$, $\text{cm}^3 \text{kg}^{-1}$, $\mu\text{g atoms dm}^{-3}$, and $\mu\text{g atoms kg}^{-1}$ with intervals of 1‰ S and 1°C.

Since the decision of the 14th International Conference of Weights and Measures, it must be pointed out that the unit of amount of substance is the mole (symbol mol). This is why the expression microgram atom ($\mu\text{g atom}$) has been replaced by micromole of mono oxygen (μmol).

The most frequently used unit for expressing the amount of oxygen dissolved in seawater is milliliters of gaseous oxygen, at standard temperature and pressure (STP), that is 0°C and 1 normal atmosphere, per liter of seawater at a given temperature and also under 1 atmosphere (ml liter^{-1}). However, this unit is not included in the International System of units (SI) and the unit $\text{cm}^3 \text{dm}^{-3}$ is recommended, which is equal to the former.

For practical reasons and because of the enormous amount of oxygen data expressed in $\text{cm}^3 \text{dm}^{-3}$ (ml liter^{-1}) that are published or available at the data centers, the detailed tables for the oxygen saturation values published in the *International Oceanographic Tables* are given in terms of $\text{cm}^3 \text{dm}^{-3}$ only, for temperature intervals of 0.2°C, from 0°C to 34.8°C, and for salinity intervals of 0.5‰, from 0 to 41.5‰.

However, on the recommendation of JPOTS, abbreviated tables have been introduced in the units $\text{cm}^3 \text{dm}^{-3}$ (again), $\mu\text{mol dm}^{-3}$, $\text{cm}^3 \text{kg}^{-1}$, and $\mu\text{mol kg}^{-1}$, for temperature intervals of 1°C from 0°C to 35°C, and for salinity intervals of 1‰ from 1 to 41‰.

All tables are calculated for one atmosphere containing, per volume, 20.95% of oxygen and 100% relative humidity at a total atmospheric pressure of 760 torr.

The tables are distributed by UNESCO and the authorized local distributors for UNESCO publications.

On behalf of the international organizations that have endorsed the new tables we recommend their use by all oceanographers.

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