



# LOCKWOOD PRODUCTS

---

4570 COMMERCE CIRCLE, S. W., ATLANTA, GA 30336  
TELEPHONE (404) 505-2520 TOLL FREE (800) 365-1500 FAX (404) 699-7383

## **FAQ: Deaerator Performance 7 ppb vs 0.005 cc/l**

Lockwood deaerators are designed to reduce the dissolved oxygen content to no more than 0.005 cc/liter or 7 PPB<sub>m</sub> (parts per billion, mass fraction) as calculated by the Heat Exchange Institute testing method.

It is important to note the difference in units listed above. 0.005 cc/liter is the dissolved oxygen content based on the **volume fraction**. 7 PPB<sub>m</sub> is the dissolved oxygen content based on the **mass fraction**. At atmospheric conditions, water is roughly 700 times denser than oxygen. Therefore, these two performance ratings will differ by a factor of roughly 700.

For example, if you convert 0.005 cc/liter to parts per billion based on the volume fraction you would get 5000 PPB<sub>v</sub>. To convert this to a mass fraction you need to consider the density difference between oxygen and water. At atmospheric conditions, the density of water is roughly 997 g/l and the density of oxygen is roughly 1.429 g/l. Taking into account this ratio, you can convert 5000 PPB<sub>v</sub> (volume) to 7 PPB<sub>m</sub> (mass).