

Nitrogen gas dissolution in water

$$K = a_1 + a_2 \cdot \left(\frac{100}{T_w}\right) + a_3 \cdot \ln \left(\frac{T_w}{100}\right) + a_3 \cdot \ln \left(\frac{T_w}{100}\right) + S_a \cdot \left[b_1 + b_2 \cdot \left(\frac{T_w}{100}\right) + b_3 \cdot \left(\frac{T_w}{100}\right)^2\right]$$

r nitrogen

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# dissolution of nitrogen
a1 = -59.6274
a2 = +85.7661
a3 = +24.3696
b1 = +0.051580
b2 = +0.026320
b3 = +0.0037252
Sa = 65
Tw = seq(12, 18, .5)
K1 = a1+a2*(100/Tw)+a3*log2(Tw/100)
K2 = a1+a2*(100/Tw)+a3*log2(Tw/100)+Sa*(b1+b2*(Tw/100)+b3*(Tw/100)^2)
plot(Tw, K1, col='blue', type='l')
lines(Tw, K2, col="red", lty=2)
```

From:

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