THREE PARAMETER EQUATION-1

Equation Parameters for Water

$A := -1.94 \quad B := -4.80 \quad C := 6.74$

Reference Values for Water

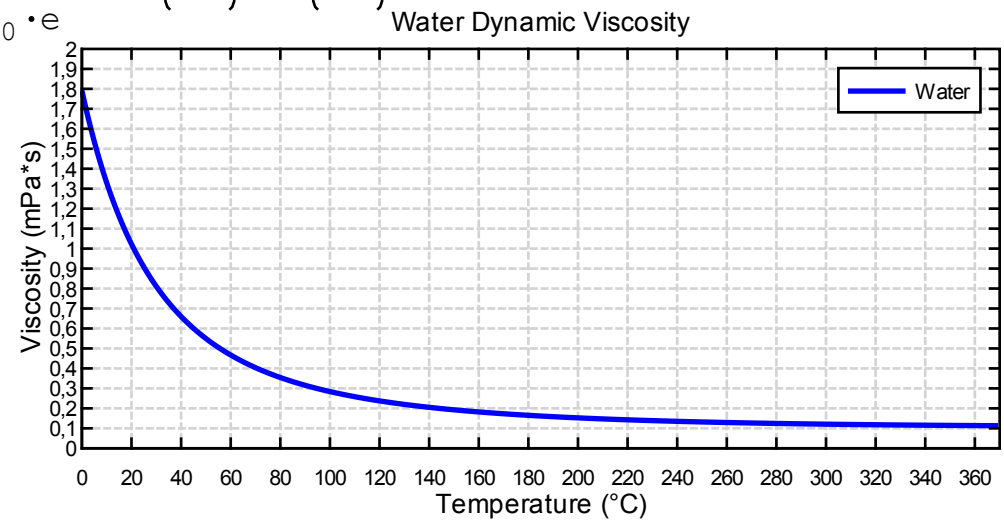
$\mu_0 := 1.7916\ \text{MPa s} \quad T_0 := 273.15\ \text{K}$

Temperature Table

$T := [0..370]\ °\text{C}$

Viscosity Table

$$\mu := \mu_0 \cdot e^{A + B \cdot \left(\frac{T_0}{T}\right) + C \cdot \left(\frac{T_0}{T}\right)^2}$$



THREE PARAMETER EQUATION-2

Equation Parameters for Water

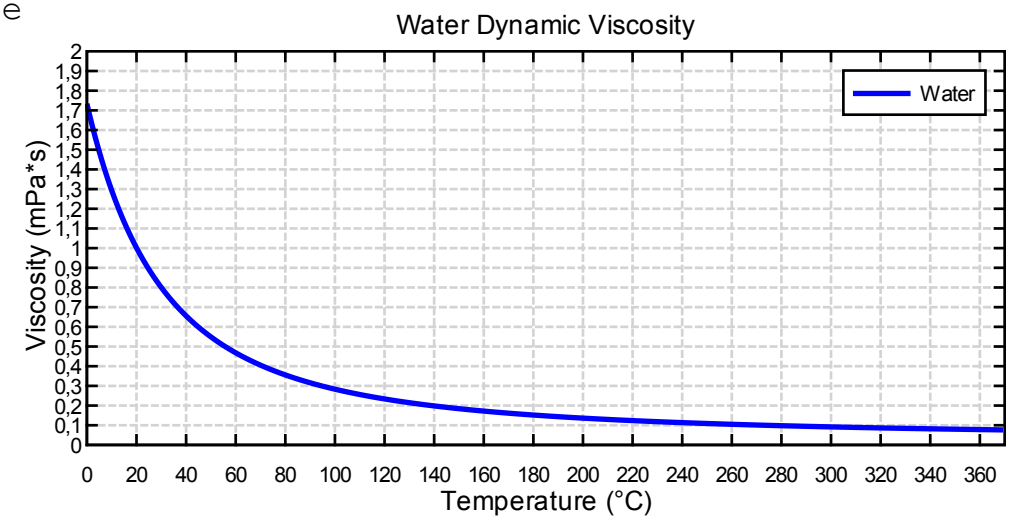
$A := -3.7188 \quad B := 578.919\ \text{K} \quad C := -137.546\ \text{K}$

Temperature Table

$T := [0..370]\ °\text{C}$

Viscosity Table

$$\eta := e^{A + \frac{B}{C + T}}$$



FOUR PARAMETER EQUATION

Equation Parameters for Water

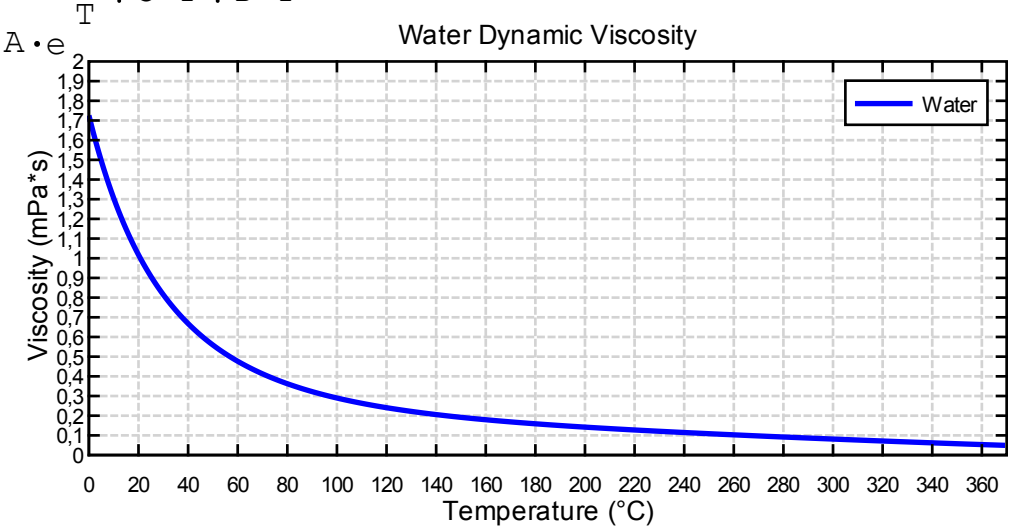
$$\left[A := 1.856 \cdot 10^{-11} \quad B := 4209\,K \quad C := \frac{0.04527}{K} \quad D := \frac{-3.376 \cdot 10^{-5}}{K^2}\right]$$

Temperature Table

$T := [0..370]\,°C$

Viscosity Table

$$\eta := A \cdot e^{\frac{B}{T} + C \cdot T + D \cdot T^2}$$



VOGEL-FULSCHER-TAMMANN EQUATION

Equation Parameters for Water

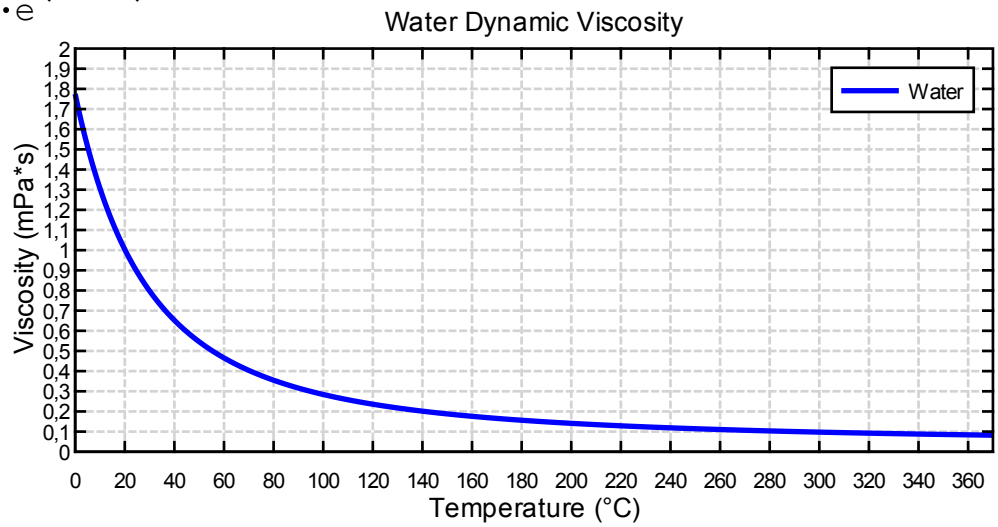
$$[A := 0.02939\,MPa\,s \quad B := 507.88\,K \quad C := 149.3\,K]$$

Temperature Table

$T := [0..370]\,°C$

Viscosity Table

$$\mu := A \cdot e^{\frac{B}{(T - C)}}$$



DERIVED EMPIRICAL EQUATION

Temperature Table

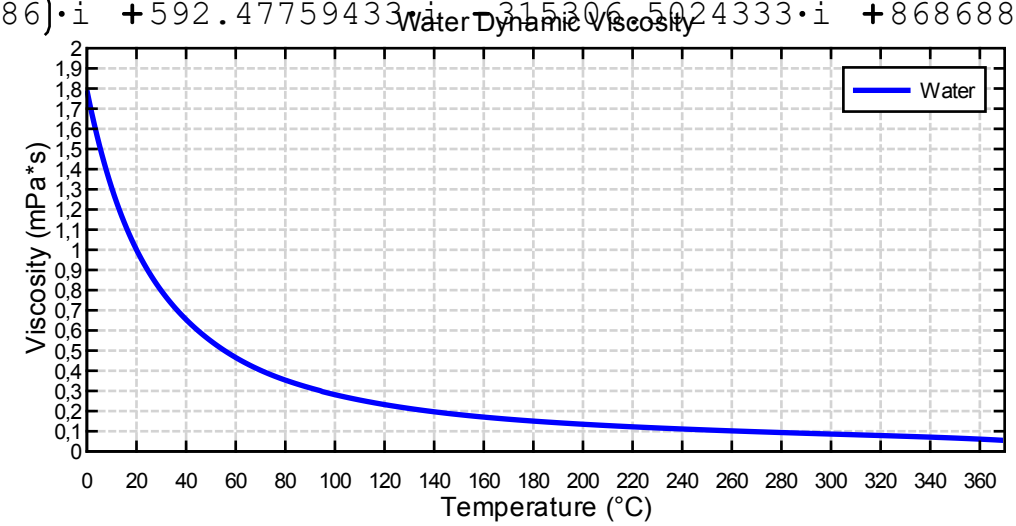
$T := [0..370]\ °C$

Formula

for $i \in [0..370]$

if $i < 95$

$$\mu_{i+1} := \left(2.77388442 \cdot i^{6} - 1243.59703683 \cdot i^{5} + 229813.89243372 \cdot i^{4} - 23103721.06\right.$$

else

$$\mu_{i+1} := \left((-0.45450686) \cdot i^{5} + 592.47759433 \cdot i^{4} - 315306.5024333 \cdot i^{3} + 86868859.3\right.$$