

## Answer on Question #71601, Chemistry / General Chemistry

### Question:

How does the temperature effect surface tension and visclocity?

### Answer:

Surface tension is a property of a fluid that makes it acquire the least surface area possible. It is dependent on temperature. In general, surface tension decreases with temperature, reaching 0 value at critical temperature. According to Eötvös rule, the surface tension  $\gamma$  is a linear function of temperature  $T$ :

$$\gamma V^{2/3} = k(T_c - T),$$

where  $V$  and  $T_c$  are the molar volume and critical temperature of the liquid and  $k$  is the constant valid for all liquids.

Viscosity is the property of fluid to resist to shear or tensile stress. The viscosity of liquids  $\mu$  tend to decrease with temperature, the simplest model being exponential Reynolds model:

$$\mu(T) = \mu_0 \exp(-bT).$$

The viscosity of gases tends to increase when temperature increases, as was found first with the kinetic theory of gases.

Answer provided by <https://www.AssignmentExpert.com>