

## Answer on Question #65367 – Chemistry –General Chemistry

A reaction rate is  $6.93 \times 10^{-3} \text{ s}^{-1}$  at 10 degrees Celsius. If you raise the temperature by 30 degrees Celsius, what approximately is the new reaction?

### Solution.

$$\frac{v_{T_2}}{v_{T_1}} = \gamma^{\frac{T_2 - T_1}{10}}$$

$$v_{T_2} = v_{T_1} \times \gamma^{\frac{T_2 - T_1}{10}} = 6.93 \times 10^{-3} \times (2 \div 4)^{\frac{303 - 283}{10}}$$

$$v_{T_2} = 6.93 \times 10^{-3} \times (4 \div 16) = (27.72 \times 10^{-3} \div 110.88 \times 10^{-3}) \text{ s}^{-1}$$

A reaction rate increases in 4÷16 times.