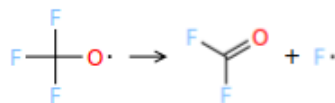
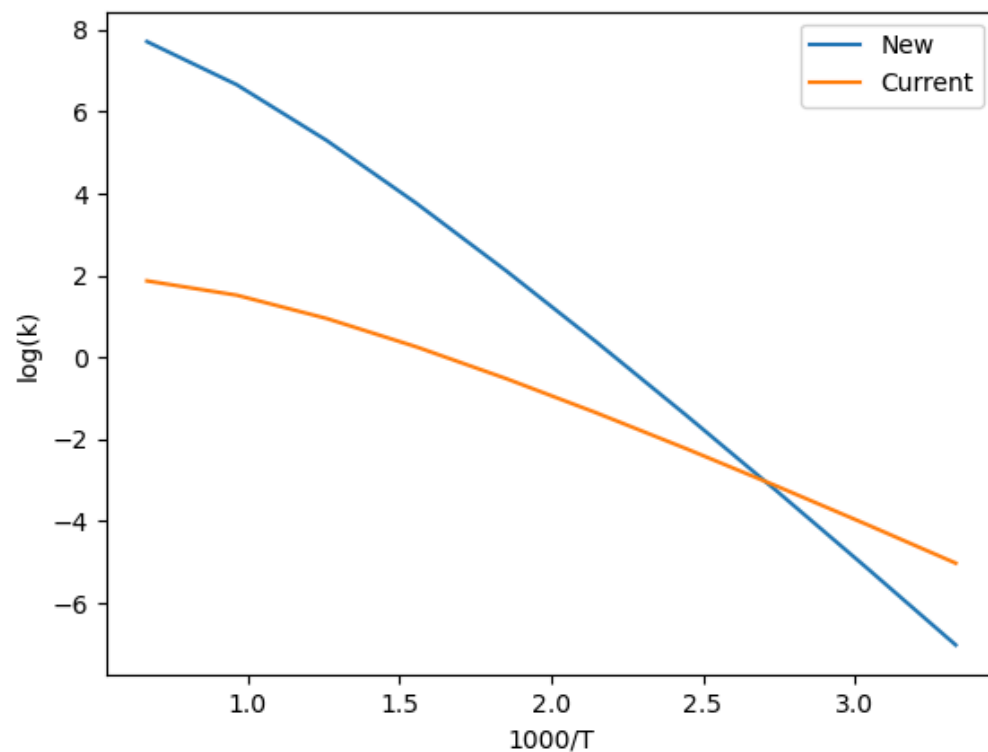


## 14 reactions matched to R\_Addition\_MultipleBond

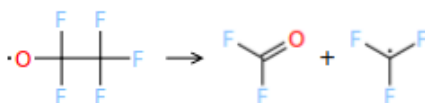
index: 4

**Note: Training reaction written in opposite direction from reaction family.****New Kinetics:**Arrhenius( $A=(1.81 \times 10^{35}, \text{s}^{-1})$ ,  $n=-7.12$ ,  $E_a=(33830, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )**Current Kinetics**

ArrheniusBM( $A=(4.08261 \times 10^{20}, \text{m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=-5.07836$ ,  $w_0=(384, \text{kJ/mol})$ ,  $E_0=(74.9893, \text{kJ/mol})$ ,  $T_{\min}=(300, \text{K})$ ,  $T_{\max}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=0.0, \text{var}=33.13686319048999, T_{\text{ref}}=1000.0, N=1, \text{data\_mean}=0.0, \text{correlation}=\text{'Root\_N-3R-inRing\_N-3R->C\_N-1R!H->N\_2R!H->O'})$ ,  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_N-3R->C\_N-1R!H->N\_2R!H->O\"\"\"'})$



index: 19

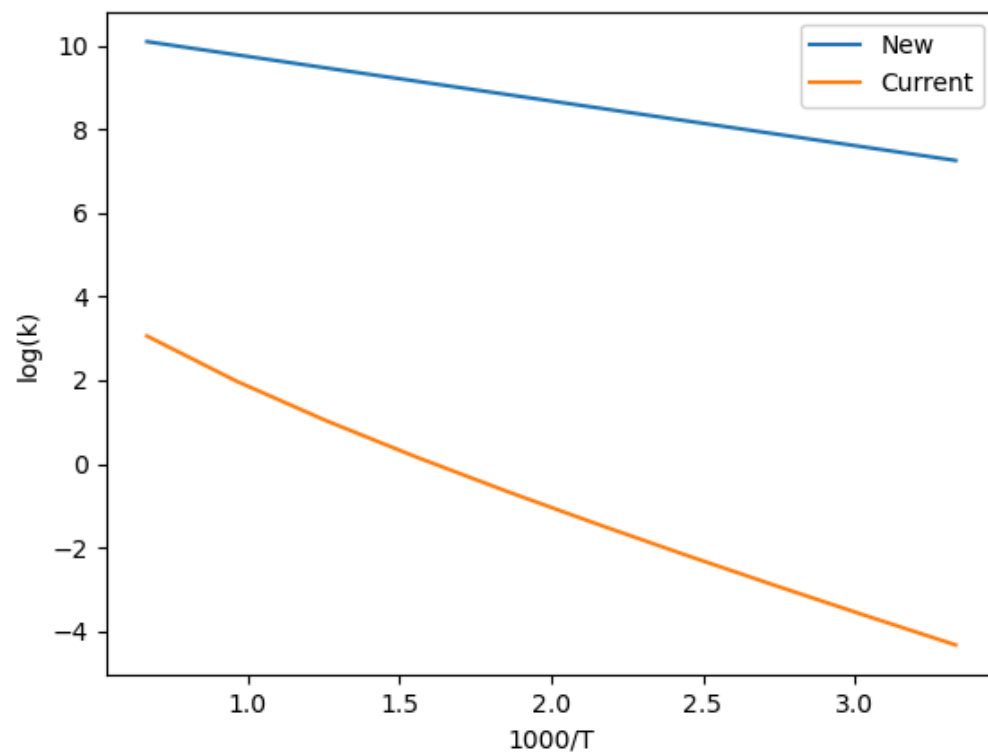
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

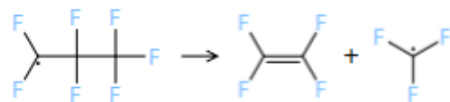
Arrhenius( $A=(6.32 \times 10^9 \text{ s}^{-1})$ ,  $n=0$ ,  $E_a=(4872 \text{ cal/mol})$ ,  $T_0=(1 \text{ K})$ )

**Current Kinetics**

ArrheniusBM( $A=(1.4291 \times 10^{-6} \text{ m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=3.20779$ ,  $w_0=(393.5 \text{ kJ/mol})$ ,  $E_0=(36.9032 \text{ kJ/mol})$ ,  $T_{\min}=(300 \text{ K})$ ,  $T_{\max}=(2000 \text{ K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=0.0, \text{var}=33.13686319048999)$ ,  $T_{\text{ref}}=1000.0$ ,  $N=1$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-1R!H-R\_N-5R!H-inRing\_Ext-1R!H-R\_N-2R!H->C\_N-5R!H-u1'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-1R!H-R\_N-5R!H-inRing\_Ext-1R!H-R\_N-2R!H->C\_N-5R!H-u1\"\"\"}'$ )



index: 32



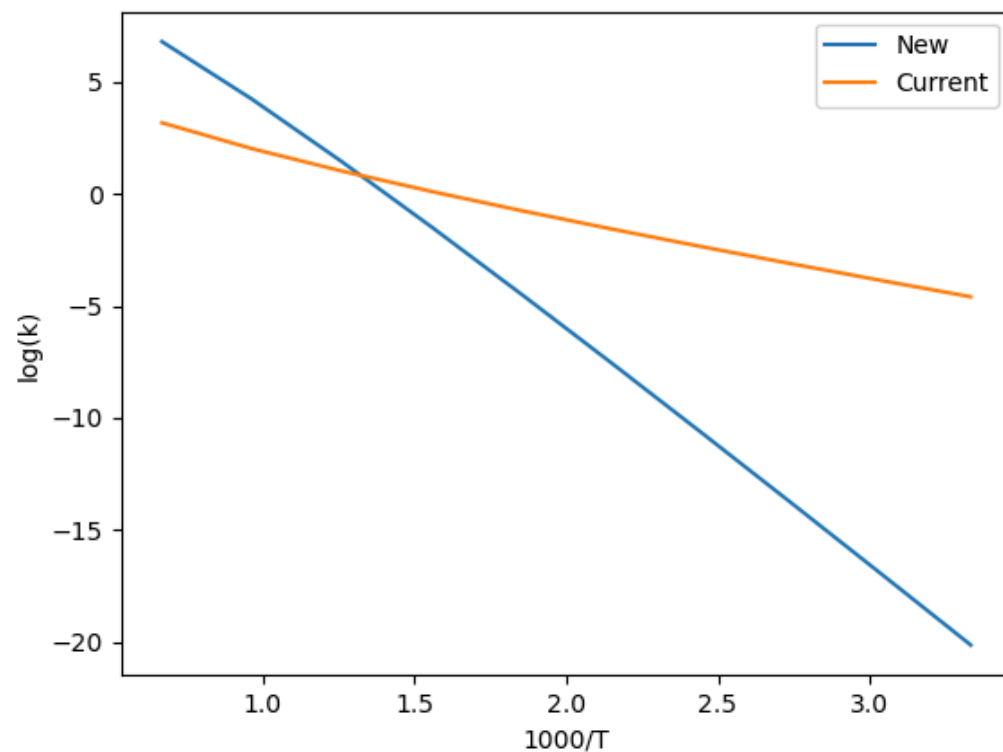
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

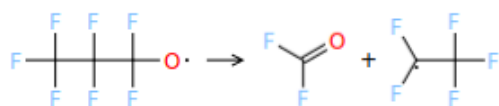
Arrhenius( $A=(1.01\text{e}+31, \text{'s}^{-1}\text{'})$ ,  $n=-5.22$ ,  $E_a=(52440, \text{'cal/mol}\text{'})$ ,  $T_0=(1, \text{'K}\text{'})$ )

**Current Kinetics**

ArrheniusBM( $A=(1.89178\text{e}-07, \text{'m}^3/(\text{mol}\cdot\text{s})\text{'})$ ,  $n=3.53001$ ,  $w_0=(303.056, \text{'kJ/mol}\text{'})$ ,  $E_0=(38.0148, \text{'kJ/mol}\text{'})$ ,  $T_{\text{min}}=(300, \text{'K}\text{'})$ ,  $T_{\text{max}}=(2000, \text{'K}\text{'})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.4944253016374622, \text{var}=1.7828810760479818, T_{\text{ref}}=1000.0, N=135, \text{data\_mean}=0.0, \text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-1R!H-R\_N-5R!H-inRing\_Ext-1R!H-R'\text{'})$ ,  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-1R!H-R\_N-5R!H-inRing\_Ext-1R!H-R Multiplied by reaction path degeneracy 2.0\"\"\"}'$ )



index: 51



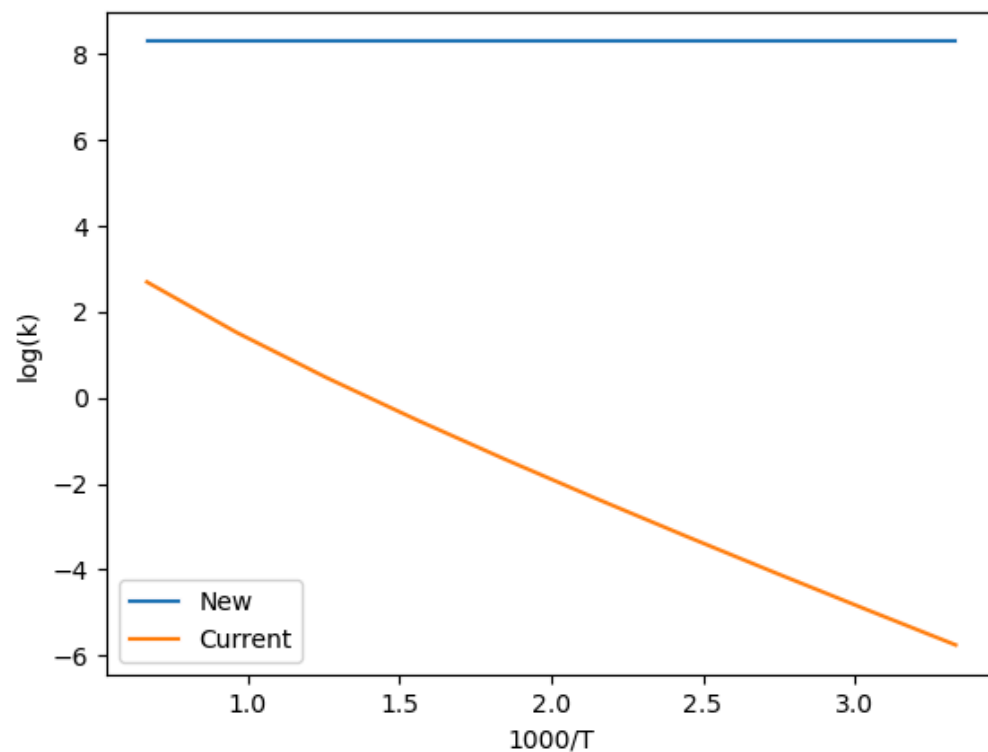
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

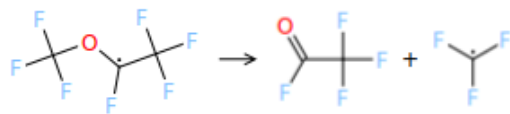
Arrhenius( $A=(1.95 \times 10^8, \text{s}^{-1})$ ,  $n=0$ ,  $E_a=(0, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(1.22525 \times 10^{-5}, \text{m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=2.9005$ ,  $w_0=(393.5, \text{kJ/mol})$ ,  $E_0=(46.1097, \text{kJ/mol})$ ,  $T_{\text{min}}=(300, \text{K})$ ,  $T_{\text{max}}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=0.0, \text{var}=33.13686319048999)$ ,  $T_{\text{ref}}=1000.0$ ,  $N=1$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_N-2R!H->C'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_N-2R!H->C\"\"\"'}$ )



index: 52



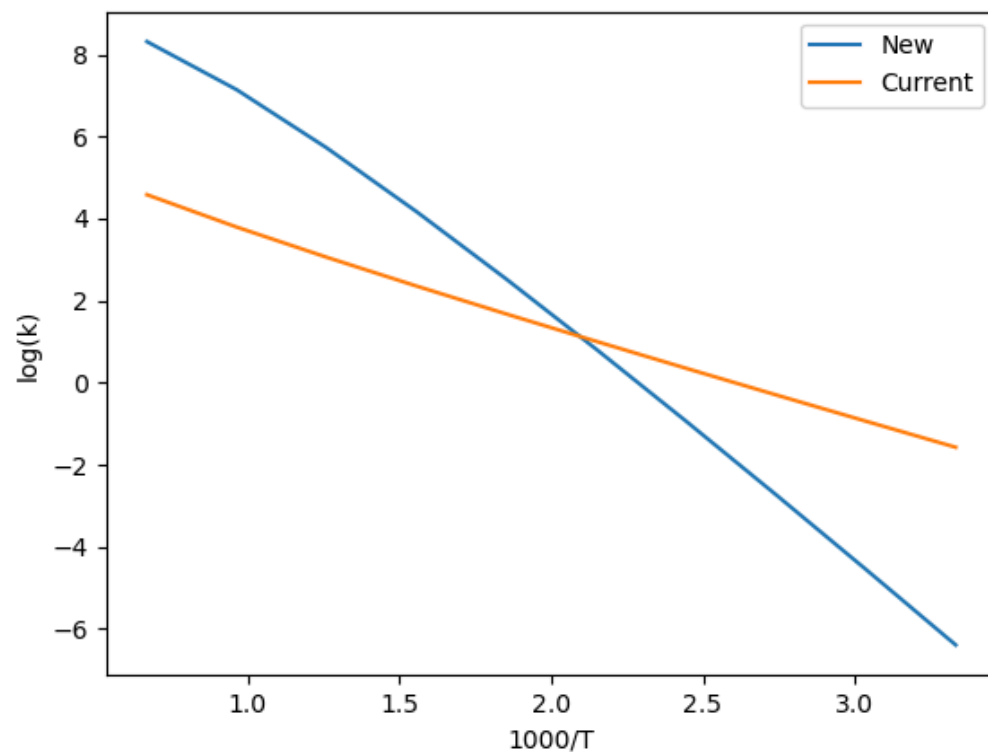
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

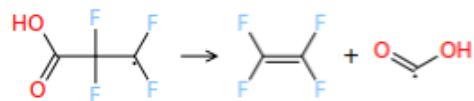
Arrhenius( $A=(6.11\text{e}+30, \text{s}^{-1})$ ,  $n=-5.61$ ,  $E_a=(31960, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(61.188, \text{m}^3/(\text{mol}\cdot\text{s}))$ ,  $n=1.29312$ ,  $w_0=(297.108, \text{kJ/mol})$ ,  $E_0=(37.7031, \text{kJ/mol})$ ,  $T_{\text{min}}=(300, \text{K})$ ,  $T_{\text{max}}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.28976280499384915$ ,  $\text{var}=2.1569028208455543$ ,  $T_{\text{ref}}=1000.0$ ,  $N=37$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-3C-R\_2R!H->C'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_N-Sp-4R!H=3R\_3R->C\_Ext-3C-R\_2R!H->C\"\"\"}'$ )



index: 65



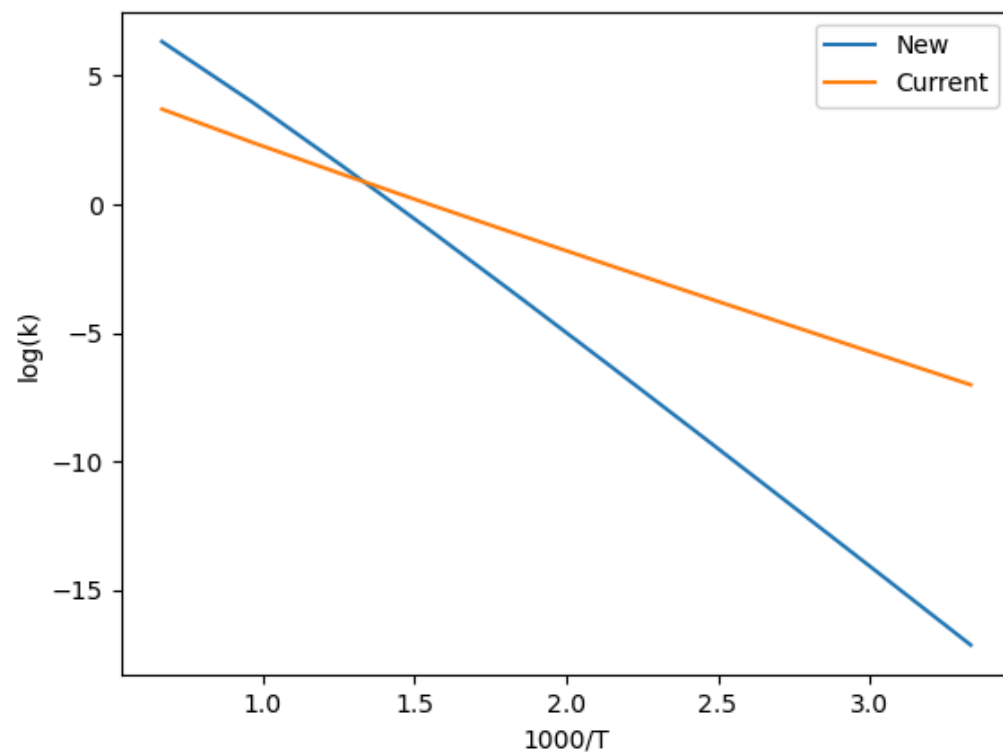
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

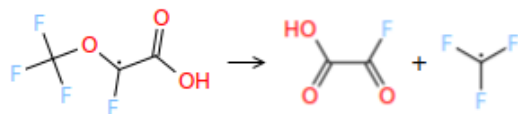
Arrhenius( $A=(1.42e+23, 's^{-1}')$ ,  $n=-3.27$ ,  $E_a=(44170, 'cal/mol')$ ,  $T_0=(1, 'K')$ )

**Current Kinetics**

ArrheniusBM( $A=(306.062, 'm^3/(mol*s)')$ ,  $n=1.16366$ ,  $w_0=(301.402, 'kJ/mol')$ ,  $E_0=(71.0975, 'kJ/mol')$ ,  $T_{min}=(300, 'K')$ ,  $T_{max}=(2000, 'K')$ ,  $uncertainty=RateUncertainty(mu=-0.022037706214473284, var=2.3701416358838845, T_{ref}=1000.0, N=230, data\_mean=0.0, correlation='Root\_N-3R-inRing\_Ext-3R\_Sp-4R!H=3R\_Sp-2R!H=1R!H')$ ,  $comment=""$ Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Sp-4R!H=3R\_Sp-2R!H=1R!H Multiplied by reaction path degeneracy 2.0""")



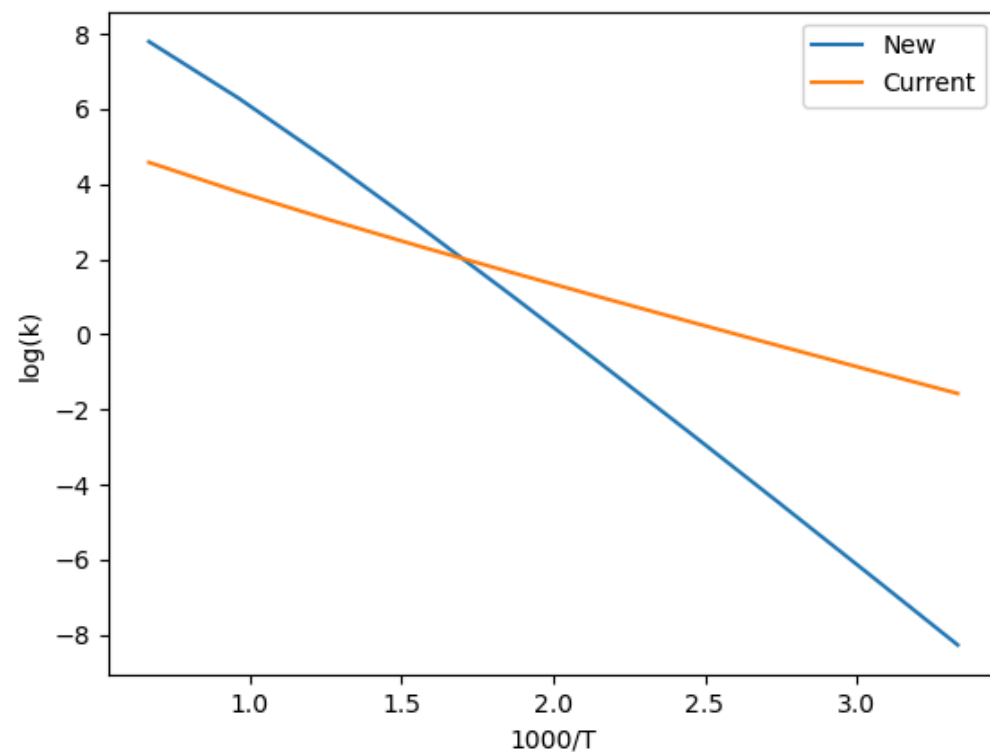
index: 75



**Note: Training reaction written in opposite direction from reaction family.**

## Arrhenius(A=(1.18e+23,'s^-1'), n=-3.36, Ea=(31600,'cal/mol'), T0=(1,'K'))

```
ArrheniusBM(A=(61.188,'m^3/(mol*s)'), n=1.29312, w0=
(297.108,'kJ/mol'), E0=(37.7031,'kJ/mol'), Tmin=(300,'K'), Tmax=
(2000,'K'), uncertainty=RateUncertainty(mu=-0.28976280499384915,
var=2.1569028208455543, Tref=1000.0, N=37, data_mean=0.0,
correlation='Root_N-3R-inRing_Ext-3R-R_N-Sp-4R!H=3R_3R->C_Ext-
3C-R_2R!H->C'), comment="""Estimated from node Root_N-3R-
inRing_Ext-3R-R_N-Sp-4R!H=3R_3R->C_Ext-3C-R_2R!H->C""")
```



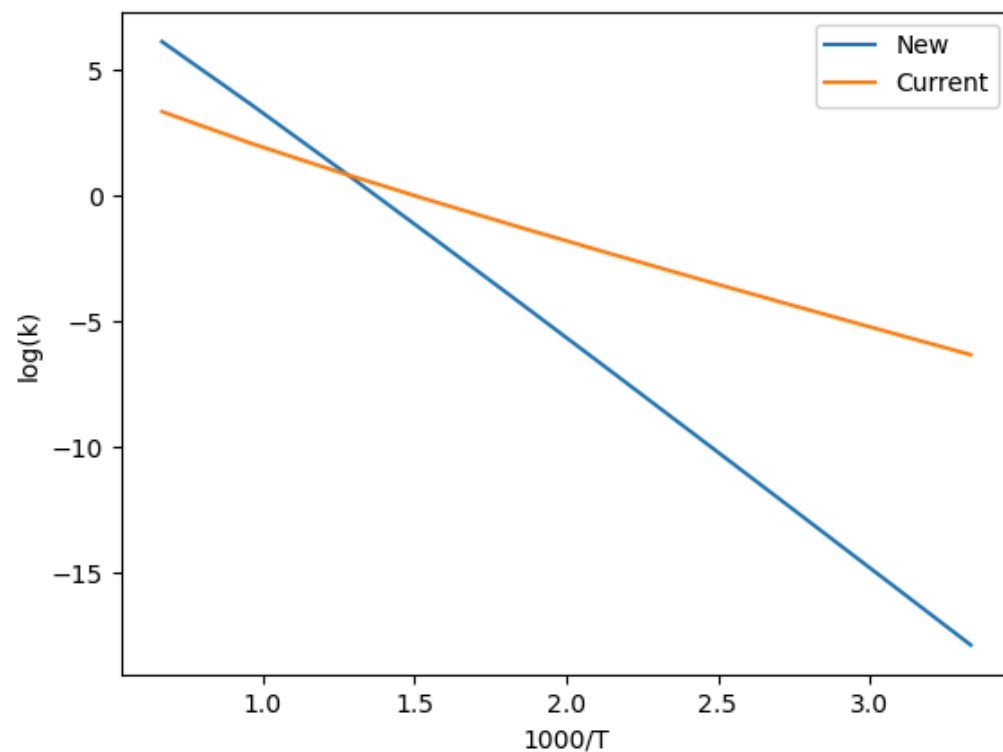
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

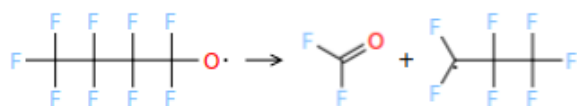
Arrhenius( $A=(1.4\text{e}+18, \text{s}^{-1})$ ,  $n=-1.79$ ,  $E_a=(43360, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(0.00504, \text{m}^3/(\text{mol}\cdot\text{s}))$ ,  $n=2.41$ ,  $w_0=(301, \text{kJ/mol})$ ,  $E_0=(57.3723, \text{kJ/mol})$ ,  $T_{\text{min}}=(300, \text{K})$ ,  $T_{\text{max}}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=0.0, \text{var}=33.13686319048999, T_{\text{ref}}=1000.0, N=1, \text{data\_mean}=0.0, \text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_2R!H->C'})$ ,  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_2R!H->C Multiplied by reaction path degeneracy 2.0\"\"\"}'$ )



index: 100



**Note: Training reaction written in opposite direction from reaction family.**

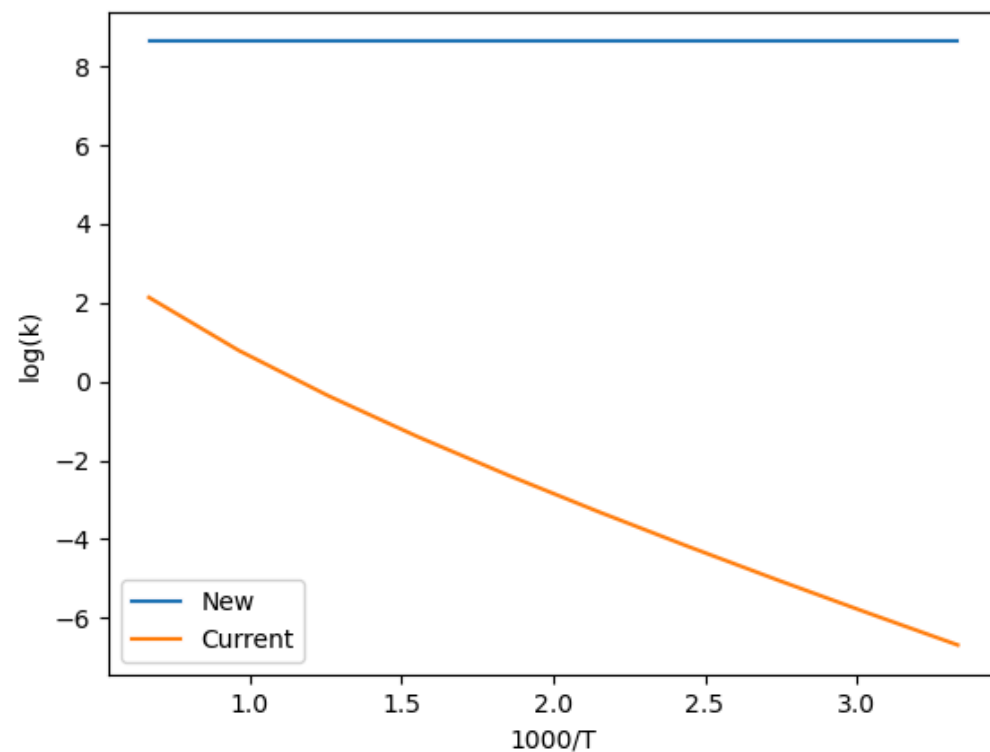


**New Kinetics:**

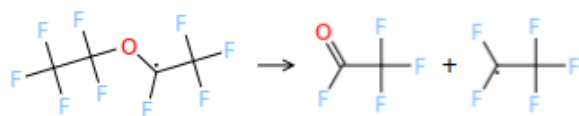
Arrhenius( $A=(4.3\text{e}+08, \text{s}^{-1})$ ,  $n=0$ ,  $E_a=(0, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(2.13223\text{e}-11, \text{m}^3/(\text{mol}\cdot\text{s}))$ ,  $n=4.48095$ ,  $w_0=(299.5, \text{kJ/mol})$ ,  $E_0=(40.9045, \text{kJ/mol})$ ,  $T_{\text{min}}=(300, \text{K})$ ,  $T_{\text{max}}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.6004730311185978$ ,  $\text{var}=1.5705211473983438$ ,  $T_{\text{ref}}=1000.0$ ,  $N=276$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R\_Ext-1R!H-R\_N-8R!H-inRing'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R\_Ext-1R!H-R\_N-8R!H-inRing\"\"\"}'$ )



index: 101



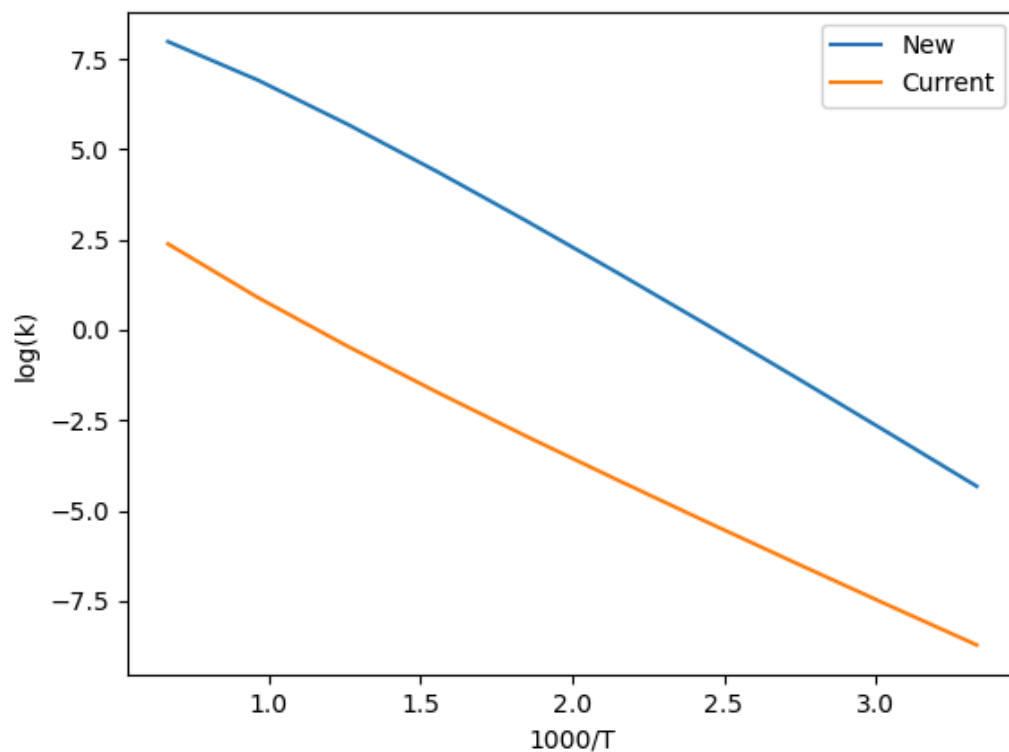
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

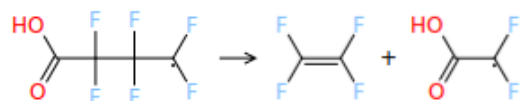
Arrhenius( $A=(2.62 \times 10^{23}, \text{s}^{-1})$ ,  $n=-3.69$ ,  $E_a=(25540, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(9.07578 \times 10^{-6}, \text{m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=3.04336$ ,  $w_0=(299.503, \text{kJ/mol})$ ,  $E_0=(64.4187, \text{kJ/mol})$ ,  $T_{\min}=(300, \text{K})$ ,  $T_{\max}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.3757377757886876, \text{var}=2.242054186761003, T_{\text{ref}}=1000.0, N=1042, \text{data\_mean}=0.0, \text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R'})$ ,  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\"\"\"}'$ )



index: 115



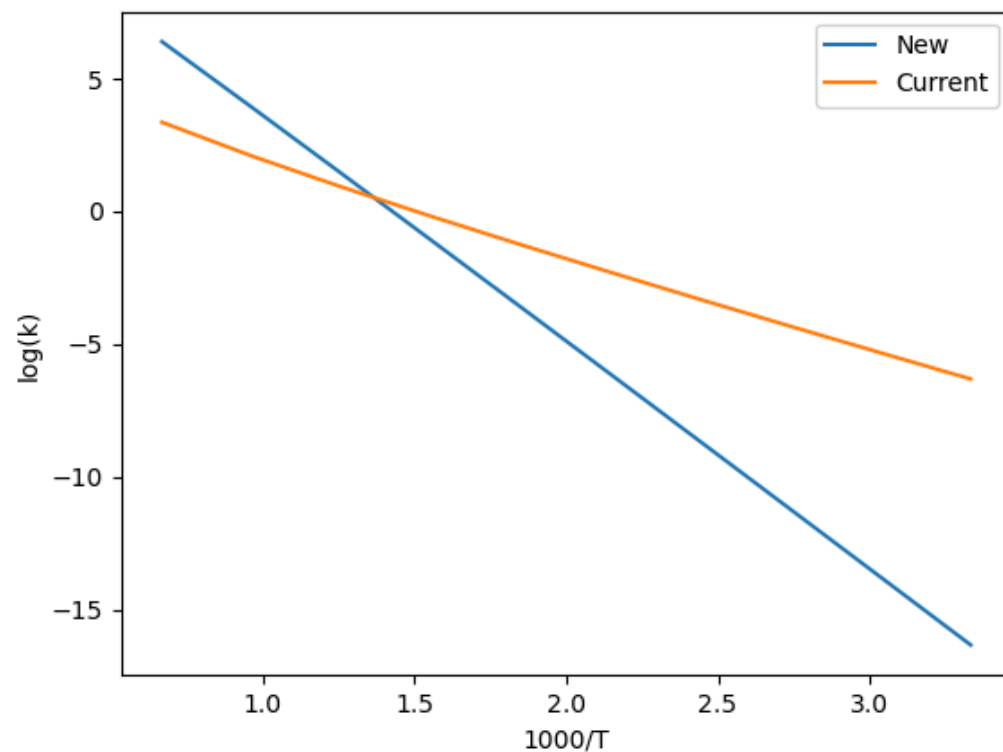
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

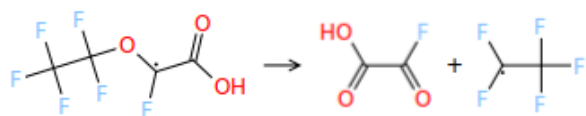
Arrhenius( $A=(1.68\text{e}+14, \text{'s}^{-1}\text{'})$ ,  $n=-0.64$ ,  $E_a=(39780, \text{'cal/mol'})$ ,  $T_0=(1, \text{'K'})$ )

**Current Kinetics**

ArrheniusBM( $A=(0.00504, \text{'m}^3/(\text{mol*s'})$ ),  $n=2.41$ ,  $w_0=(301, \text{'kJ/mol'})$ ,  $E_0=(57.3723, \text{'kJ/mol'})$ ,  $T_{\min}=(300, \text{'K'})$ ,  $T_{\max}=(2000, \text{'K'})$ ,  
 uncertainty=RateUncertainty( $\mu=0.0$ ,  $\text{var}=33.13686319048999$ ,  
 $T_{\text{ref}}=1000.0$ ,  $N=1$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_2R!H->C'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_N-Sp-5R!H=4R!H\_Sp-2R!H=1R!H\_Ext-4R!H-R\_2R!H->C Multiplied by reaction path degeneracy 2.0\"\"\"}'$ )



index: 130



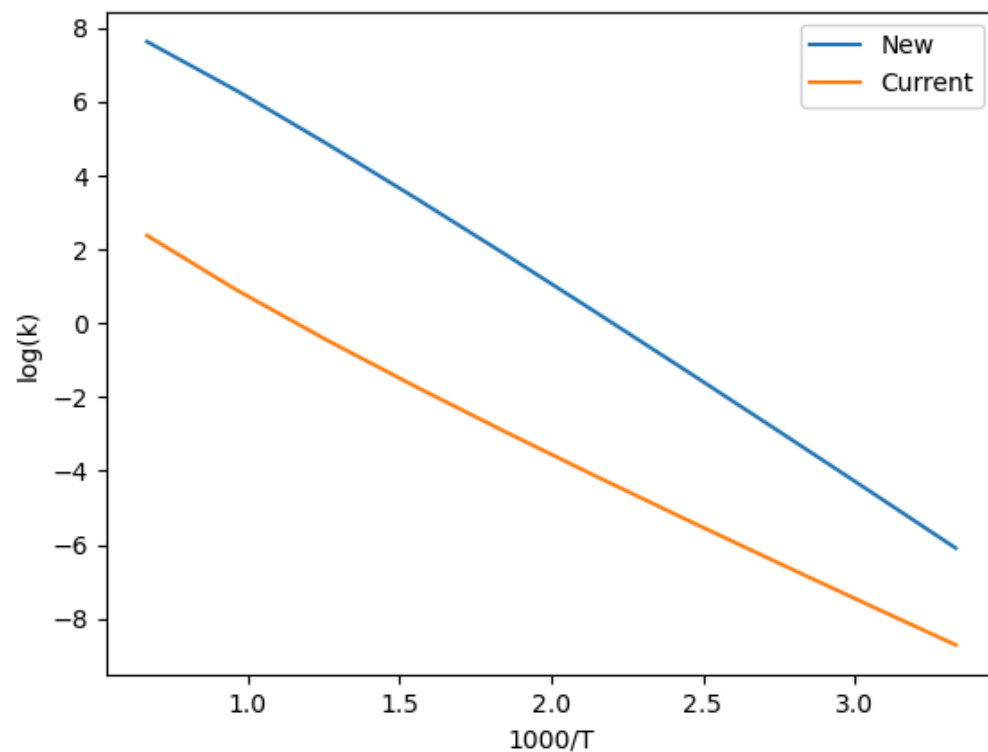
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

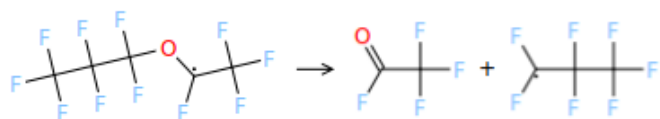
Arrhenius( $A=(1.02\text{e}+19, \text{s}^{-1})$ ,  $n=-2.37$ ,  $E_a=(26400, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(9.07578\text{e}-06, \text{m}^3/(\text{mol}\cdot\text{s}))$ ,  $n=3.04336$ ,  $w_0=(299.503, \text{kJ/mol})$ ,  $E_0=(64.4187, \text{kJ/mol})$ ,  $T_{\text{min}}=(300, \text{K})$ ,  $T_{\text{max}}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.3757377757886876$ ,  $\text{var}=2.242054186761003$ ,  $T_{\text{ref}}=1000.0$ ,  $N=1042$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\"\"\"}'$ )



index: 148



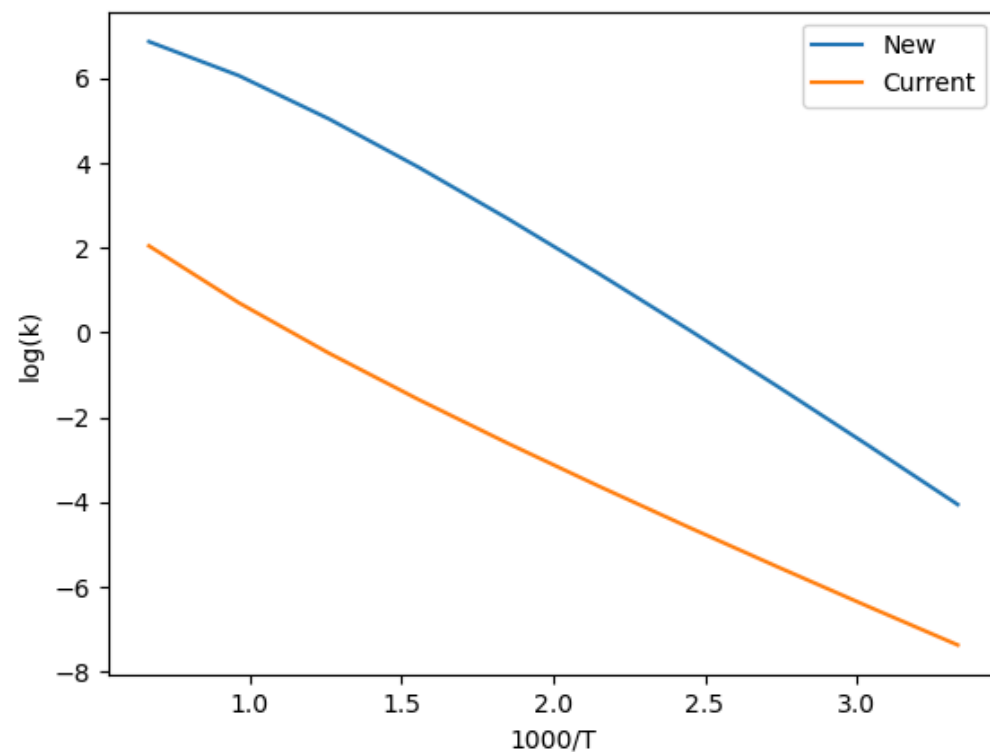
**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

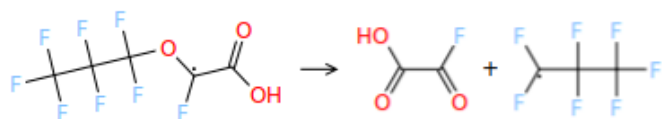
Arrhenius( $A=(2.65 \times 10^{26}, \text{s}^{-1})$ ,  $n=-5.02$ ,  $E_a=(24770, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(2.06973 \times 10^{-8}, \text{m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=3.60774$ ,  $w_0=(299.574, \text{kJ/mol})$ ,  $E_0=(49.539, \text{kJ/mol})$ ,  $T_{\min}=(300, \text{K})$ ,  $T_{\max}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.5239778944948545$ ,  $\text{var}=2.087050032983542$ ,  $T_{\text{ref}}=1000.0$ ,  $N=387$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R\"\"\"}'$ )



index: 172



**Note: Training reaction written in opposite direction from reaction family.**

**New Kinetics:**

Arrhenius( $A=(2.83 \times 10^{26}, \text{s}^{-1})$ ,  $n=-5.06$ ,  $E_a=(26160, \text{cal/mol})$ ,  $T_0=(1, \text{K})$ )

**Current Kinetics**

ArrheniusBM( $A=(2.06973 \times 10^{-8}, \text{m}^3/(\text{mol} \cdot \text{s}))$ ,  $n=3.60774$ ,  $w_0=(299.574, \text{kJ/mol})$ ,  $E_0=(49.539, \text{kJ/mol})$ ,  $T_{\min}=(300, \text{K})$ ,  $T_{\max}=(2000, \text{K})$ ,  $\text{uncertainty}=\text{RateUncertainty}(\mu=-0.5239778944948545$ ,  $\text{var}=2.087050032983542$ ,  $T_{\text{ref}}=1000.0$ ,  $N=387$ ,  $\text{data\_mean}=0.0$ ,  $\text{correlation}=\text{'Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R'}$ ),  $\text{comment}=\text{'\"\"\"Estimated from node Root\_N-3R-inRing\_Ext-3R-R\_Ext-4R!H-R\_Ext-3R-R\_Ext-3R-R\"\"\"}'$ )

