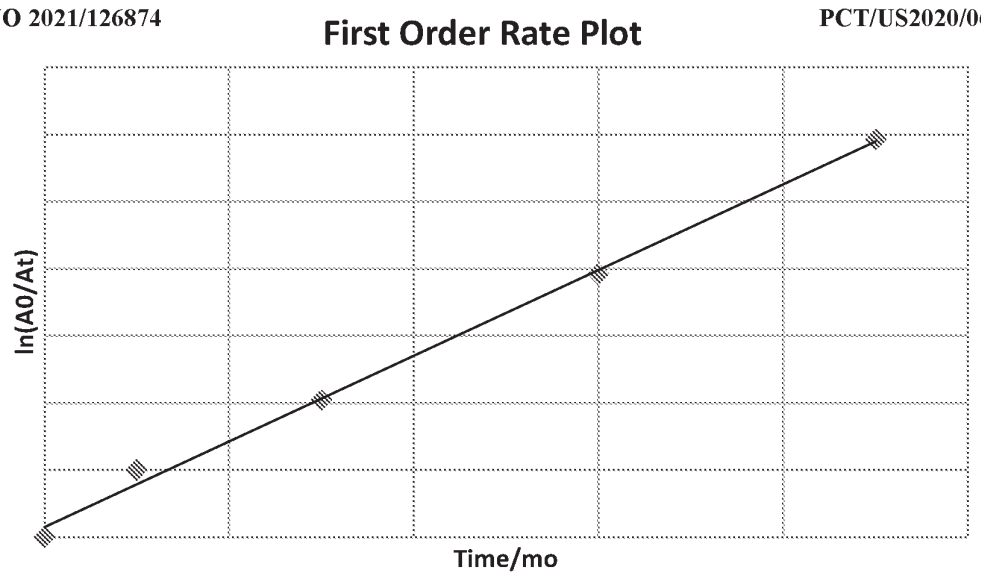


FIG. 1

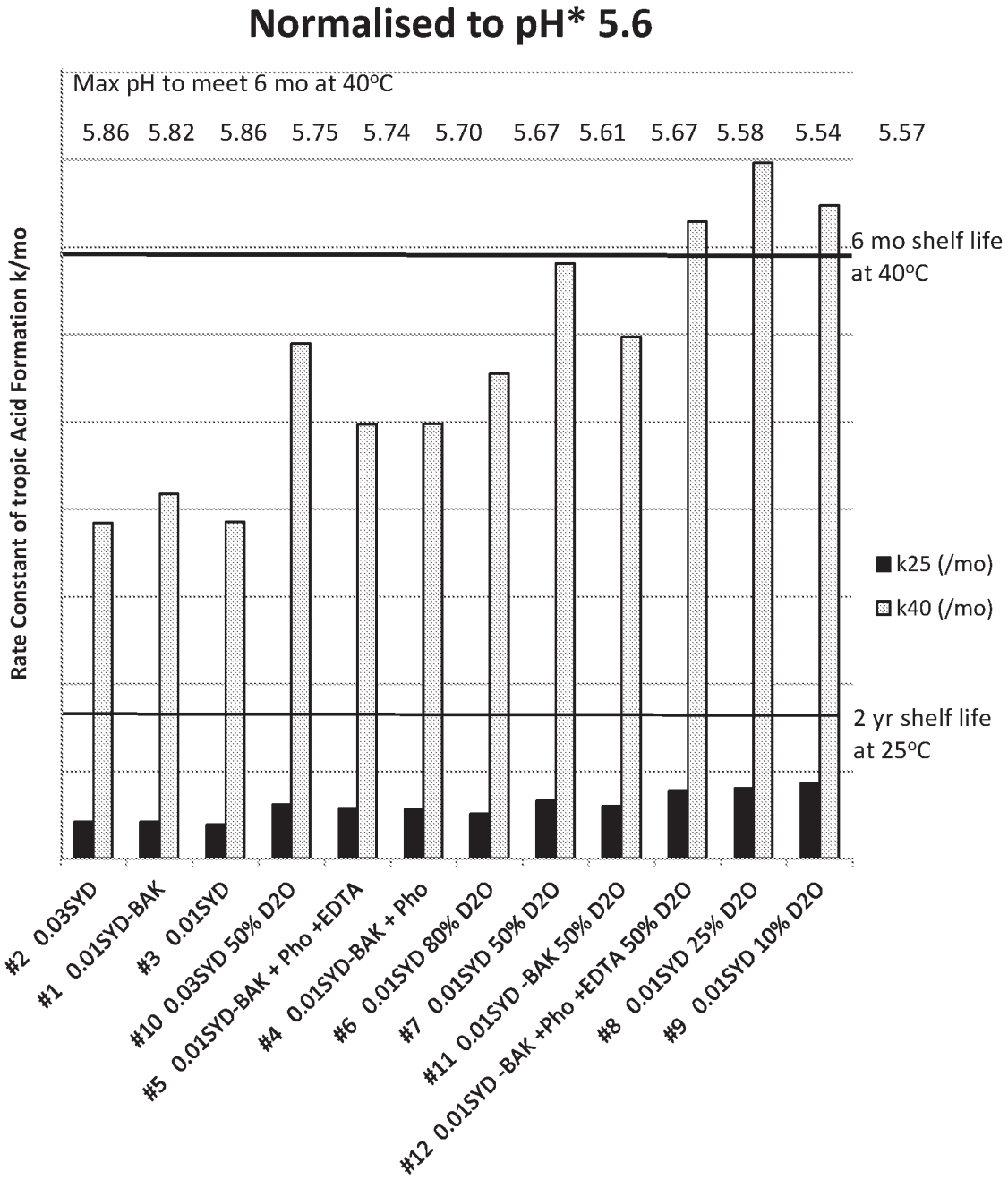

Normalised to pH* 5.6
Max pH to meet 6 mo at 40°C
5.86 5.82 5.86 5.75 5.74 5.70 5.67 5.61 5.67 5.58 5.54 5.57
Rate Constant of tropic Acid Formation k/mo
6 mo shelf life at 40°C
2 yr shelf life at 25°C
k25 (/mo)
k40 (/mo)
#2 0.03SYD
#1 0.01SYD-BAK
#3 0.01SYD
#10 0.03SYD 50% D2O
#5 0.01SYD-BAK + Pho +EDTA
#4 0.01SYD-BAK + Pho
#6 0.01SYD 80% D2O
#7 0.01SYD 50% D2O
#11 0.01SYD -BAK 50% D2O
#12 0.01SYD -BAK +Pho +EDTA 50% D2O
#8 0.01SYD 25% D2O
#9 0.01SYD 10% D2O

FIG. 2

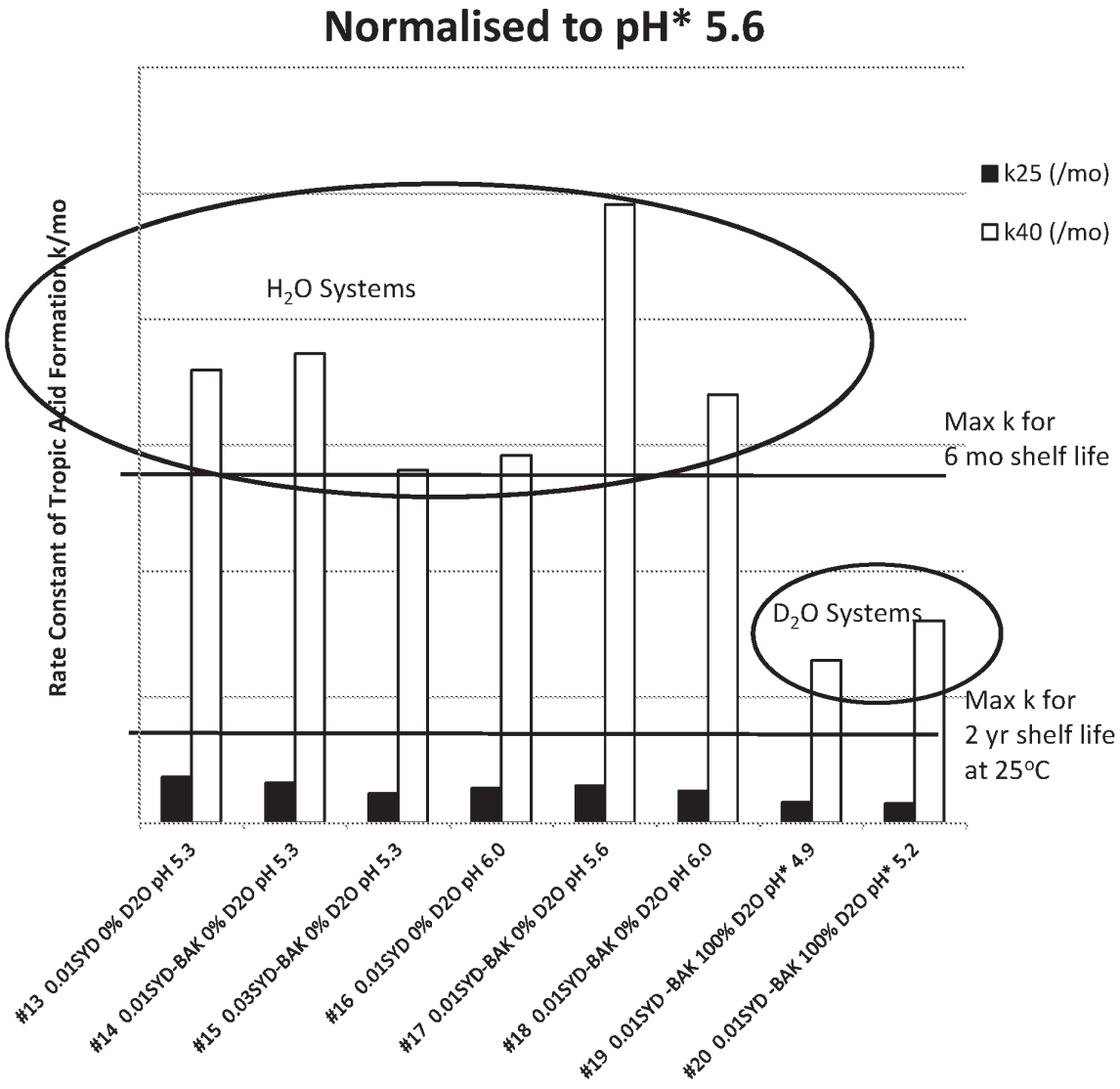

Normalised to pH* 5.6
Rate Constant of Tropic Acid Formation k/mo
k25 (/mo)
k40 (/mo)
H2O Systems
Max k for
6 mo shelf life
D2O Systems
Max k for
2 yr shelf life
at 25°C
#13 0.01SYD 0% D2O pH 5.3
#14 0.01SYD-BAK 0% D2O pH 5.3
#15 0.03SYD-BAK 0% D2O pH 5.3
#16 0.01SYD 0% D2O pH 6.0
#17 0.01SYD-BAK 0% D2O pH 5.6
#18 0.01SYD-BAK 0% D2O pH 6.0
#19 0.01SYD -BAK 100% D2O pH* 4.9
#20 0.01SYD -BAK 100% D2O pH* 5.2

FIG. 3

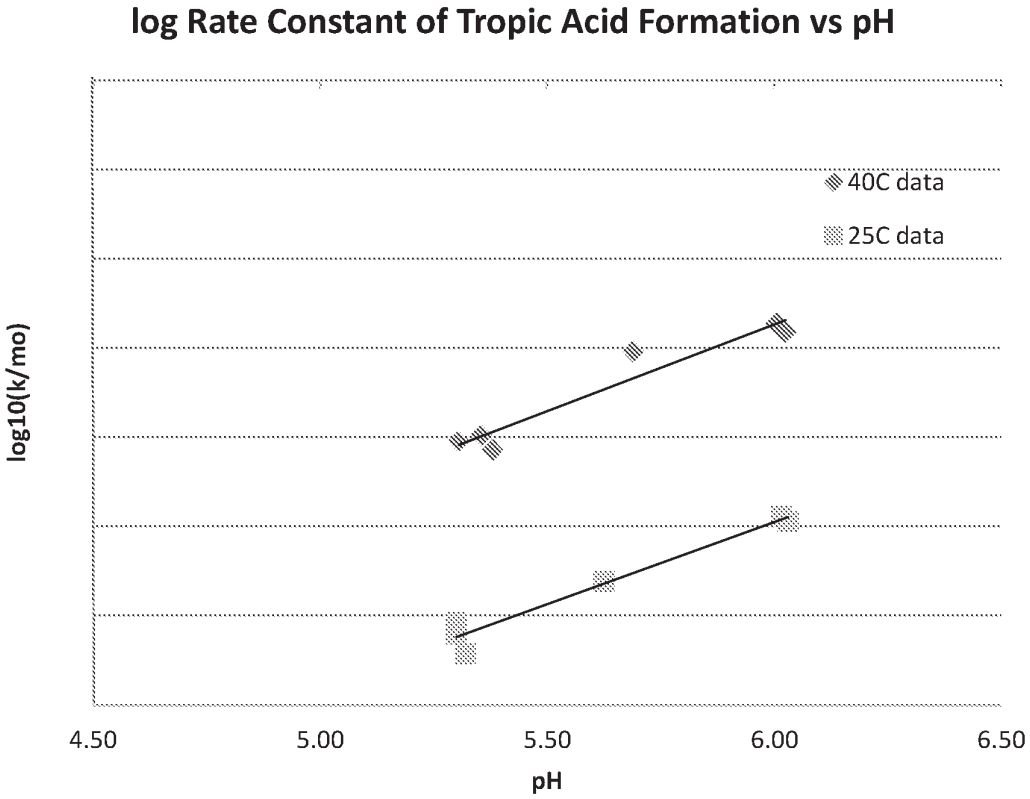

log Rate Constant of Tropic Acid Formation vs pH
40C data
25C data
log10(k/mo)
4.50
5.00
5.50
6.00
6.50
pH

FIG. 4

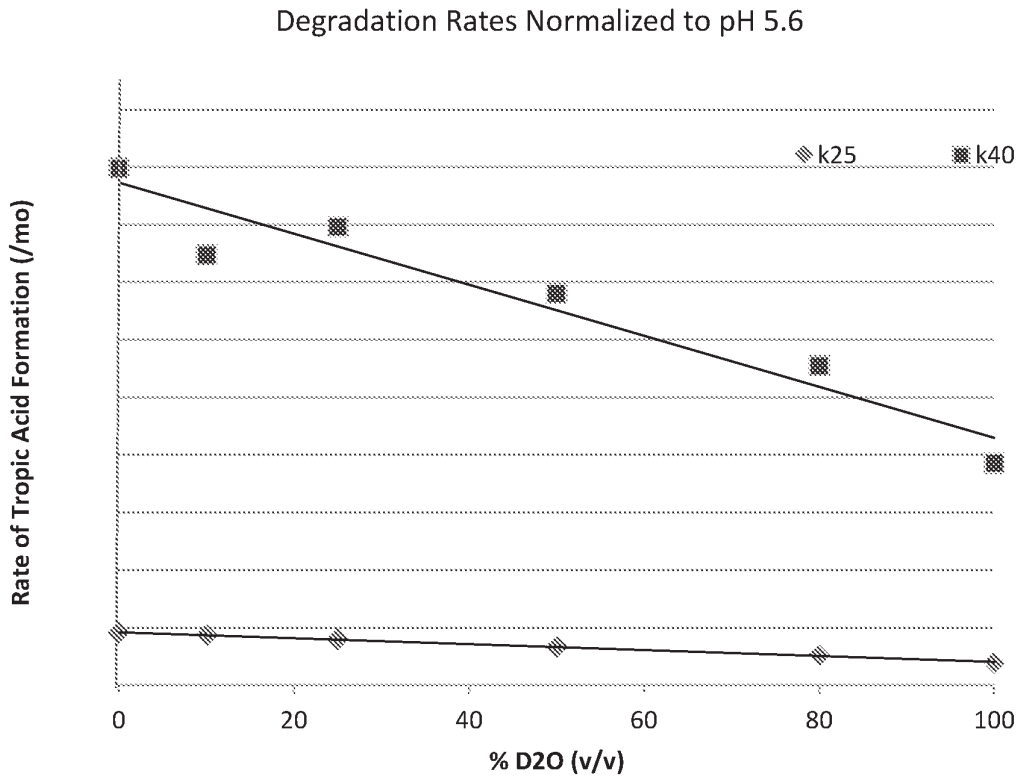

Degradation Rates Normalized to pH 5.6
k25
k40
Rate of Tropic Acid Formation (/mo)
0
20
40
60
80
100
% D2O (v/v)

FIG. 5

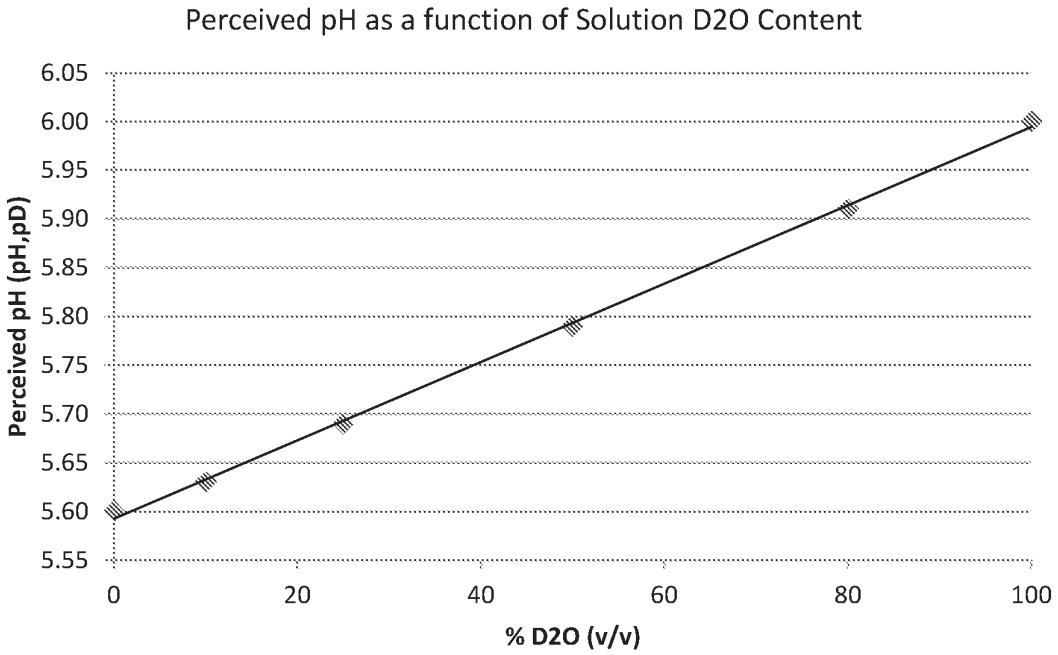
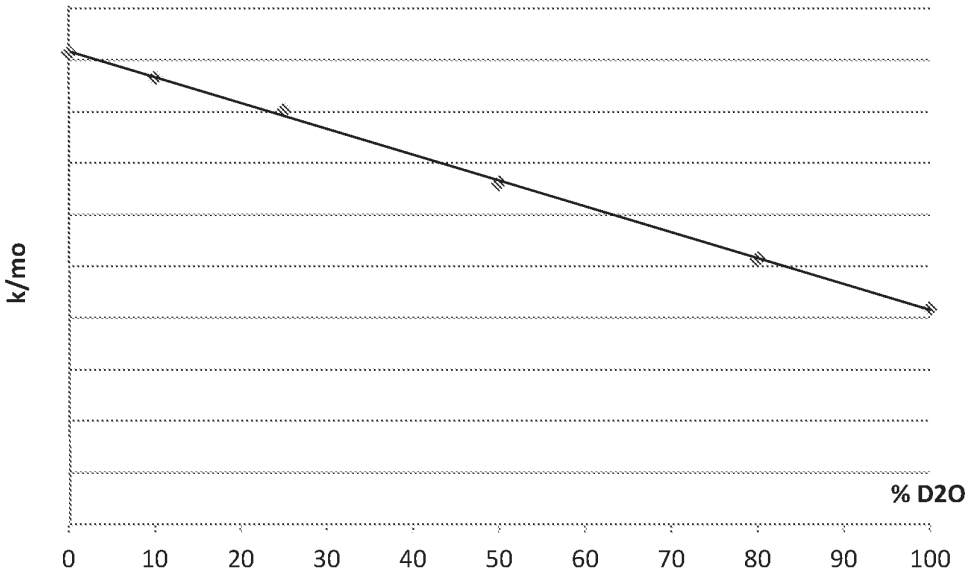


FIG. 6

25C Rate Constant of Tropic Acid Formation as a Function of % D2O (v/v). k adjusted to a measured pH of 5.6



Perceived pH/pD	5.60	5.63	5.67	5.76	5.89	6.01

FIG. 7

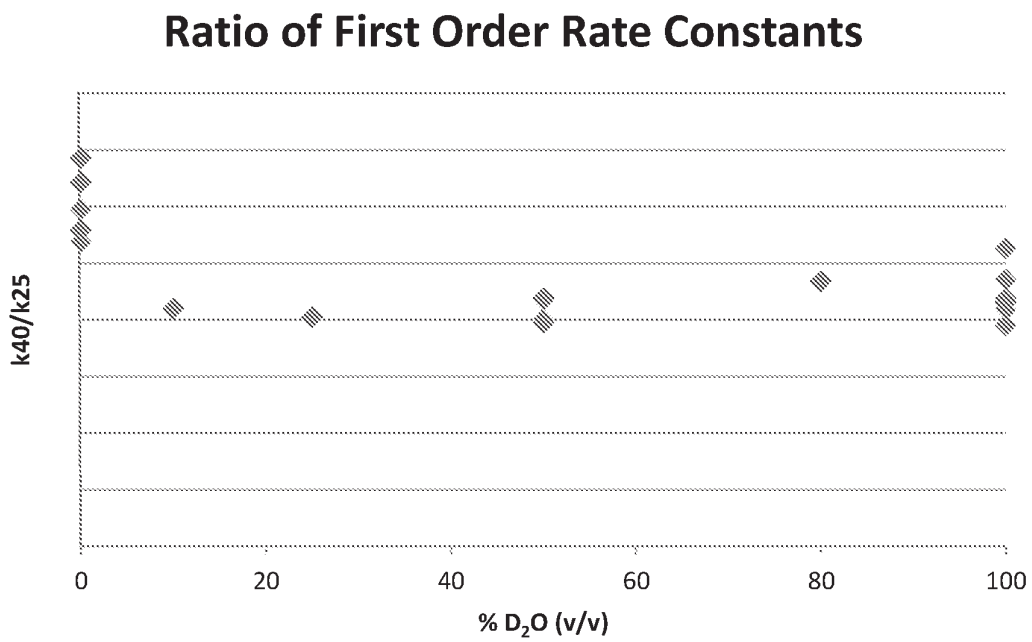

Ratio of First Order Rate Constants
k40/k25
0
20
40
60
80
100
% D2O (v/v)

FIG. 8

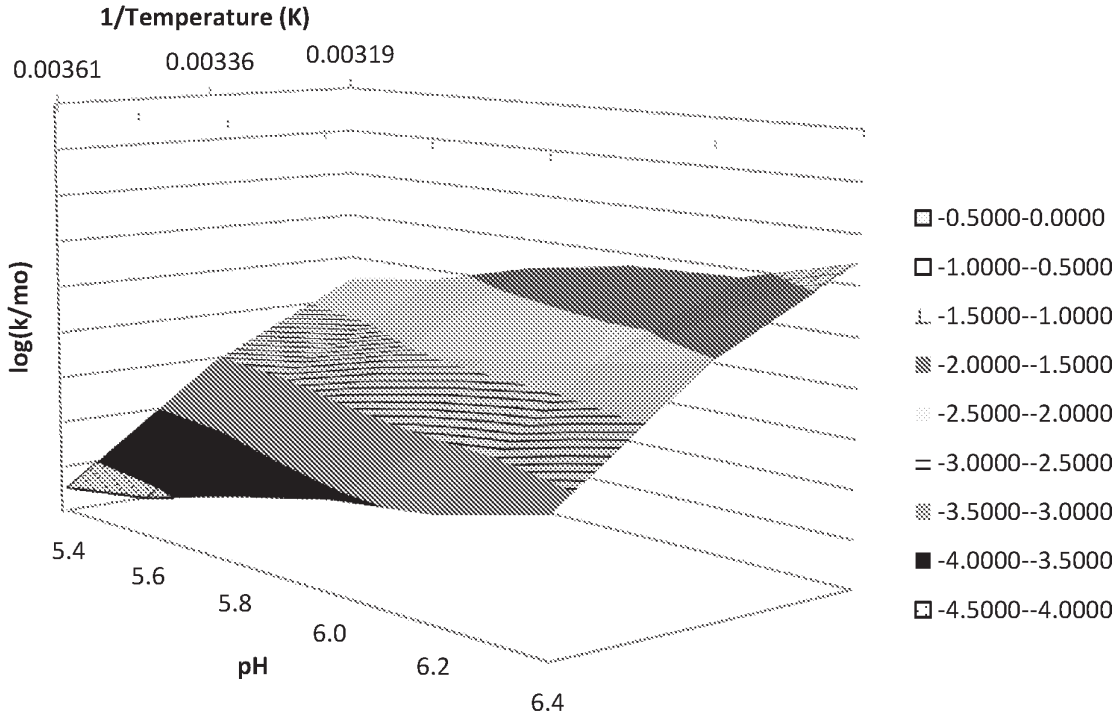

1/Temperature (K)
0.00361
0.00336
0.00319
log(k/mo)
5.4
5.6
5.8
6.0
6.2
6.4
pH
-0.5000-0.0000
-1.0000--0.5000
-1.5000--1.0000
-2.0000--1.5000
-2.5000--2.0000
-3.0000--2.5000
-3.5000--3.0000
-4.0000--3.5000
-4.5000--4.0000

FIG. 9