**SUPPLEMENTARY MATERIALS – ДОПОЛНИТЕЛЬНЫЕ МАТЕРИАЛЫ**

**Water – dimethyl sulfoxide solvent composition effect on the stability of glycylglycinate cobalt(II) complexes**

**V. A. Isaevaa, A. S. Molchanovb, M. V. Shishkinb, V. A. Sharnina**

*aIvanovo State University of Chemistry and Technology, Russia, Ivanovo,*

*Sheremetevskiy av., 7, 153000*

*bKostroma State University, Russia, Kostroma, Dzerzhinskiy st., 17, 156005*

**Влияние состава водно-диметилсульфоксидного растворителя на устойчивость комплексов кобальта(II) с глицилглицинат-ионом**

**В. А. Исаеваa, А. С. Молчановb, М. В. Шишкинb,**

**В. А. Шарнинa**

*aИвановский государственный химико-технологический университет, Шереметевский пр-т, 7, Иваново, 153000 Россия*

*bКостромской государственный университет,*

*ул. Дзержинского, 17, Кострома, 156005 Россия*

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Initial data and calculation results of PHMETR-program

(ХDMSO = 0.0 mol. f., Т = 298 К)

Исходные данные и результаты расчета по программе PHMETR

(ХДМСО = 0.0 мол. д., Т = 298 К)

Initial concentrations:

Solution in cell (50.0 ml) – Co(ClO4)2 (2.003×10-2 mol/l), HClO4 (1.002×10-

2 mol/l), I = 0.1 М (NaClO4), titrant solution – NaGG (7.996×10-1 mol/l).

Начальные концентрации:

раствор в ячейке (50.0 ml) – Co(ClO4)2 (2.003×10-2 моль/л), HClO4

(1.002×10-2 моль/л), I = 0.1 М (NaClO4), раствор титранта – NaGG (7.996×10-1

моль/л).

**Table S3.** The data of titration (ХDMSO = 0.0 mol. f.).

**Таблица S3.** Данные титрования (ХДМСО = 0.0 мол. д.)

Volume of

titrant, ml

Е, мV

Total concentration of particles, mol/l

GG–

H+

Co2+

0.699

90.2

1.102×10-2

9.881×10-3

1.975×10-2

0.757

88.3

1.193×10-2

9.871×10-3

1.973×10-2

0.937

69.3

1.473×10-2

9.832×10-3

1.966×10-2

1.116

57.8

1.746×10-2

9.801×10-3

1.959×10-2

1.316

40.2

2.051×10-2

9.763×10-3

1.952×10-2

1.503

29.1

2.333×10-2

9.727×10-3

1.945×10-2

1.691

17.2

2.616×10-2

9.692×10-3

1.937×10-2

1.891

8.6

2.914×10-2

9.655×10-3

1.930×10-2

2.076

-1.5

3.188×10-2

9.621×10-3

1.923×10-2

2.250

-8.3

3.443×10-2

9.589×10-3

1.917×10-2

2.446

-19.2

3.729×10-2

9.552×10-3

1.910×10-2

2.632

-33.4

3.999×10-2

9.519×10-3

1.903×10-2

2.813

-44.3

4.259×10-2

9.486×10-3

1.896×10-2

3.003

-49.1

4.530×10-2

9.452×10-3

1.890×10-2

3.166

-55.3

4.762×10-2

9.423×10-3

1.884×10-2

3.345

-61.6

5.014×10-2

9.392×10-3

1.877×10-2

3.495

-63.7

5.224×10-2

9.365×10-3

1.872×10-2

**Table S4. S**toichiometric coefficients and processes lgK values (ХDMSO = 0.0 mol.

f.).

**Таблица S4.** Стехиометрические коэффициенты и значения lgK процессов

(ХДМСО = 0.0 мол. д.).

**S**toichiometric coefficients

lgK (lgβ)

Product

GG–

H+

Co2+

1

1

0

lgK = 8.12

HGG

1

2

0

lgβ = 11.19

H2GG+

1

0

1

lgK1

[CоGG]+

2

0

1

lgβ2

[CоGG2]

0

-1

0

lgK = -13.90

ОН–

**Table S5.** Calculation results of PHMETR-program (ХDMSO = 0.0 mol. f.).

**Таблица**

д.).

**S5.**

Результаты

расчета

по

программе

PHMETR

(ХДМСО

=

0.0

мол.

lgK1 = 3.4687 ± 0.031, lgβ2 = 6.0547 ± 0.041 (lgК2 = 2.5860)

Equilibrium concentration of products, mol/l

HGG

H2GG+

[CоGG]+

[CоGG2]

ОН–

8.812×10-3

1.721×10-5

2.086×10-3

3.232×10-5

6.014×10-9

8.730×10-3

1.115×10-5

2.988×10-3

7.014×10-5

9.196×10-9

8.447×10-3

4.671×10-6

5.541×10-3

2.907×10-4

2.124×10-8

8.160×10-3

2.167×10-6

7.685×10-3

6.898×10-4

3.762×10-8

7.838×10-3

1.455×10-6

9.530×10-3

1.382×10-3

6.327×10-8

7.538×10-3

9.094×10-7

1.066×10-2

2.288 ×10-3

9.738×10-8

7.239×10-3

5.804×10-7

1.118×10-2

3.468×10-3

1.465×10-7

6.922×10-3

3.663×10-7

1.109×10-2

4.982×10-3

2.220×10-7

6.632×10-3

2.406×10-7

1.047×10-2

6.574×10-3

3.237×10-7

6.361×10-3

1.629×10-7

9.553×10-3

8.151×10-3

4.587×10-7

6.057×10-3

1.051×10-7

8.273×10-3

9.924×10-3

6.772×10-7

5.771×10-3

6.962×10-8

6.989×10-3

1.148×10-2

9.737×10-7

5.495×10-3

4.725×10-8

5.825×10-3

1.279×10-2

1.366×10-6

5.207×10-3

3.213×10-8

4.793×10-3

1.389×10-2

1.904×10-6

4.961×10-3

2.349×10-8

4.064×10-3

1.463×10-2

2.481×10-6

4.694×10-3

1.702×10-8

3.428×10-3

1.524×10-2

3.239×10-6

4.472×10-3

1.321×10-8

3.008×10-3

1.564×10-2

3.976×10-6

Initial data and calculation results of PHMETR-program

(ХDMSO = 0.6 mol. f., Т = 298 К)

Исходные данные и результаты расчета по программе PHMETR

(ХДМСО = 0.6 мол. д., Т = 298 К)

Initial concentrations:

Solution in cell (50.0 ml) – Co(ClO4)2 (2.005×10-2 mol/l), HClO4 (1.001×10-

2 mol/l), I = 0.1 М (NaClO4), titrant solution – NaGG (7.996×10-1 mol/l).

Начальные концентрации:

раствор в ячейке (50.0 ml) – Co(ClO4)2 (2.005×10-2 моль/л), HClO4

(1.001×10-2 моль/л), I = 0.1 М (NaClO4), раствор титранта – NaGG (7.996×10-1

моль/л).

**Table S6.** The data of titration (ХDMSO = 0.6 mol. f.).

**Таблица S6.** Данные титрования (ХДМСО = 0.6 мол. д.)

Volume of titrant, ml

Е, мV

Total concentration of particles, mol/l

GG–

H+

Co2+

0.651

30.8

1.028×10-2

9.870×10-3

1.979×10-2

0.789

23.7

1.242×10-2

9.843×10-3

1.974×10-2

0.961

15.7

1.508×10-2

9.809×10-3

1.967×10-2

1.120

7.1

1.752×10-2

9.778×10-3

1.961×10-2

1.219

2.2

1.903×10-2

9.759×10-3

1.957×10-2

1.402

-5.2

2.181×10-2

9.724×10-3

1.950×10-2

1.596

-11.8

2.473×10-2

9.687×10-3

1.943×10-2

1.762

-17.2

2.722×10-2

9.655×10-3

1.937×10-2

1.994

-24.9

3.067×10-2

9.612×10-3

1.928×10-2

2.190

-32.2

3.355×10-2

9.575×10-3

1.921×10-2

2.396

-38.1

3.656×10-2

9.537×10-3

1.913×10-2

2.552

-42.3

3.883×10-2

9.508×10-3

1.908×10-2

2.654

-44.6

4.030×10-2

9.490×10-3

1.904×10-2

2.775

-46.4

4.204×10-2

9.468×10-3

1.900×10-2

2.990

-50.4

4.512×10-2

9.429×10-3

1.892×10-2

3.106

-57.2

4.677×10-2

9.408×10-3

1.888×10-2

3.248

-69.8

4.877×10-2

9.382×10-3

1.883×10-2

**Table S7. S**toichiometric coefficients and processes lgK values (ХDMSO = 0.6 mol.

f.).

**Таблица S7.** Стехиометрические коэффициенты и значения lgK процессов

(ХДМСО = 0.6 мол. д.).

**S**toichiometric coefficients

lgK (lgβ)

Product

GG–

H+

Co2+

1

1

0

lgK = 8.64

HGG

1

2

0

lgβ = 15.18

H2GG+

1

0

1

lgK1

[CоGG]+

2

0

1

lgβ2

[CоGG2]

0

-1

0

lgK = -19.25

ОН–

**Table S8.** Calculation results of PHMETR-program (ХDMSO = 0.6 mol. f.).

**Таблица**

д.).

**S8.**

Результаты

расчета

по

программе

PHMETR

(ХДМСО

=

0.6

мол.

lgK1 = 3.7734 ± 0.087, lgβ2 = 7.0000 ± 0.071 (lgК2 = 3.2266)

Equilibrium concentration of products, mol/l

HGG

H2GG+

[CоGG]+

[CоGG2]

ОН–

3.586×10-3

3.142×10-3

3.172×10-3

1.737×10-4

2.225×10-13

4.257×10-3

2.793×10-3

4.532×10-3

3.935×10-4

2.971×10-13

4.929×10-3

2.440×10-3

6.026×10-3

8.029×10-4

3.938×10-13

5.444×10-3

2.167×10-3

7.174×10-3

1.313×10-3

4.898×10-13

5.730×10-3

2.014×10-3

7.767×10-3

1.694×10-3

5.545×10-13

6.205×10-3

1.759×10-3

8.621×10-3

2.525×10-3

6.876×10-13

6.651×10-3

1.518×10-3

9.174×10-3

3.578×10-3

8.541×10-13

6.998×10-3

1.329×10-3

9.363×10-3

4.619×10-3

1.027×10-12

7.442×10-3

1.085×10-3

9.187×10-3

6.275×10-3

1.337×10-12

7.784×10-3

8.956×10-4

8.657×10-3

7.838×10-3

1.694×10-12

8.119×10-3

7.089×10-4

7.737×10-3

9.628×10-3

2.233×10-12

8.354×10-3

5.769×10-4

6.828×10-3

1.106×10-2

2.823×10-12

8.500×10-3

4.952×10-4

6.146×10-3

1.200×10-2

3.346×10-12

8.659×10-3

4.046×10-4

5.286×10-3

1.311×10-2

4.172×10-12

8.899×10-3

2.649×10-4

3.730×10-3

1.493×10-2

6.550×10-12

8.996×10-3

2.059×10-4

2.991×10-3

1.573×10-2

8.516×10-12

9.079×10-3

1.516×10-4

2.264×10-3

1.648×10-2

1.168×10-12