

## SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 495 experiments for

(no ligands specified)

Metal : Ga+++

(no references specified)

(no experimental details specified)

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e- HL Electron (442)

Electron;

| Metal                    | Mtd | Medium | Temp  | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|--------------------------|-----|--------|-------|------|-----|-------|----|----------|-----------|--------|
| Ga+++                    | EMF | oth/un | 135°C |      | U   |       |    | 1969APa  | (505)     | 1      |
| K(Ga + 2Ga(l)=3Ga+)=13.4 |     |        |       |      |     |       |    |          |           |        |

Medium: (Na,K,Al)Cl

|  |     |        |      |       |   |   |  |         |       |   |
|--|-----|--------|------|-------|---|---|--|---------|-------|---|
| Ga+++  | oth | oth/un | 20°C | 0.06M | U | T |  | 1968KEa | (506) | 2 |
| K(Ga+2Ga(s)=3Ga+)= -11.7   |     |        |      |       |   |   |  |         |       |   |
| Medium: 0.06M GaCl3. K=-10.1(30 C), -9.5(45 C), -9.0(60 C), K=-10.0?(90 C) |     |        |      |       |   |   |  |         |       |   |

|                                 |     |      |      |     |   |  |  |         |       |   |
|---------------------------------|-----|------|------|-----|---|--|--|---------|-------|---|
| Ga+++                           | EMF | none | 25°C | 0.0 | M |  |  | 1967VLc | (507) | 3 |
| K(Ga+3e=Ga(s))=-67.25, -1326 mV |     |      |      |     |   |  |  |         |       |   |

|   |     |      |      |     |   |  |  |         |       |   |
|---|-----|------|------|-----|---|--|--|---------|-------|---|
| Ga+++   | EMF | none | 25°C | 0.0 | U |  |  | 1963C0c | (508) | 4 |
| K=-64.2(-1261 mV)                                       |     |      |      |     |   |  |  |         |       |   |
| K: Ga(OH)4+3e=Ga(s)+4OH. K(Ga+2e=Ga(I))=<-13.5(-400 mV) |     |      |      |     |   |  |  |         |       |   |

|   |     |        |      |     |   |  |  |         |       |   |
|---|-----|--------|------|-----|---|--|--|---------|-------|---|
| Ga+++   | EMF | oth/un | 24°C | var | U |  |  | 1961EGa | (509) | 5 |
| K=-64.2(-1261 mV)   |     |        |      |     |   |  |  |         |       |   |
| Medium: NaOH. K:(Ga(OH)4+3e=Ga(s)+4OH. Plus uncertain values up to 80 C |     |        |      |     |   |  |  |         |       |   |

|  |     |      |      |     |   |   |   |         |       |   |
|--|-----|------|------|-----|---|---|---|---------|-------|---|
| Ga+++  | EMF | none | 25°C | 0.0 | U | T | H | 1953SNb | (510) | 6 |
| K(Ga+3e=Ga(s))=-28.4(-560 mV)  |     |      |      |     |   |   |   |         |       |   |
| DH(K)=211.3 kJ mol-1, DS=164 J K-1 mol-1(25 C). K=-30.9(20 C, -599 mV), -27.8(28 C, -553 mV) |     |      |      |     |   |   |   |         |       |   |

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Br- HL Bromide CAS 10035-10-6 (19)

Bromide;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values           | Reference | ExptNo   |
|-------|-----|--------|------|------|-----|-------|----|--------------------|-----------|----------|
| Ga+++ | cal | non-aq | 25°C | 100% | C   |       |    | K1=1.97<br>B4=9.55 | 1996TSa   | (1939) 7 |

Medium: N,N-Dimethylformamide, 0.20 M Et4NC104.

DH(K1)=19 kJ mol-1, DH(B4)=119.7 kJ mol-1.

|                          |     |        |      |      |   |   |  |         |        |   |
|--------------------------|-----|--------|------|------|---|---|--|---------|--------|---|
| Ga+++                    | nmr | non-aq | 25°C | 100% | U | M |  | 1974BTc | (1940) | 8 |
| K(2GaXL=GaX2L+GaL)=-0.04 |     |        |      |      |   |   |  |         |        |   |

$K(2GaX2L2=GaX3L+GaXL3)=-0.15$

$K(2GaX3L=GaX4+GaX2L2)=-0.08$

Medium: MeCN. Method: nmr. X=Cl or I; values near statistical

-----  
Ga+++ dis NaClO4 20°C 0.69M U K1=-0.10 1967MAd (1941) 9  
Medium: HClO4; or K1=-0.24, B2=-0.5  
-----

Ga+++ oth NaClO4 80°C 7.50M U TIH 1962NPb (1942) 10  
B4=-3.0

Method: Raman spectra. 50-95 C. DH(B4)=47.7 kJ mol<sup>-1</sup>, DS=77 J K<sup>-1</sup> mol<sup>-1</sup>(80 C)  
In 14.9 M HClO4 B4=-3.5, DH(B4)=34, DS=32 (80 C). At 25 C: B4=-4.3

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C6N6Fe---- H4L (2191)

Hexacyanoferrate (II); Fe(II)(CN)6----

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ sol oth/un 25°C var U 1956TGb (3568) 11  
Kso=-33.82

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Cl- HL Chloride CAS 7647-01-0 (50)  
Chloride;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ cal non-aq 25°C 100% C K1=7 1996TSa (4917) 12  
B4=28

Medium: N,N-Dimethylformamide, 0.20 M Et4NClO4.  
DH(K1)=11 kJ mol<sup>-1</sup>, DH(B4)=57.0 kJ mol<sup>-1</sup>

-----  
Ga+++ ISE non-aq 300°C 100% U 1985BAa (4918) 13  
K4=6.02

Medium: fused KCl/AlCl3

-----  
Ga+++ ix NaCl 25°C var U K1=-0.64 B2=-2.18 1974MId (4919) 14  
B3=-3.90  
B4=-5.74

Medium: HCl

-----  
Ga+++ dis non-aq 25°C 100% U 1972G0c (4920) 15  
K(GaL4+H)=1.9

Medium: nitrobenzene

-----  
Ga+++ oth oth/un ? var U 1971SCc (4921) 16  
K3=-2.0  
K4=-1.7

Method: ionophoresis

-----  
Ga+++ dis NaClO4 20°C 0.69M U K1=0.01 1967MAd (4922) 17  
-----

Ga+++ ix none 25°C 0.0 U K1=-0.6 B2=-2.3 1958MAb (4923) 18  
 K3=-2.2  
 K4=-1.3

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F- HL Fluoride CAS 7644-39-3 (201)  
 Fluoride;

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| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

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Ga+++ ISE KNO3 25°C 0.10M C M K1=4.49 B2=7.99 1987YHa (6903) 19  
 K(GaA+F)= 3.37(H3A=NTA), 3.15(H3A=HEDTA), 2.3(H4A=EDTA), 2.1(H4A=CDTA)

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Ga+++ gl KNO3 25°C 0.50M M 1985TZb (6904) 20  
 K'=-1.72  
 K'=K(Ga(OH)4+HL=Ga(OH)2L+OH+H2O). No mixed S-Al-OH complexes

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Ga+++ nmr oth/un ? var U 1974BPc (6905) 21  
 K(Ga+GaF2=2GaF)=0.40  
 K(GaF+GaF3=2GaF2)=0.64  
 K(GaF2+GaF4=2GaF3)=0.57

Medium: (H,NH4)F. Method: nmr

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Ga+++ oth NaClO4 25°C 1.0M U K1=3.33 1974MGa (6906) 22  
 K(Ga+HF)=1.79

Medium: (Na,H)ClO4. Method: current-voltage studies

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Ga+++ EMF NaClO4 25°C 1.0M U H 1971WTa (6907) 23  
 K(Ga+HF=GaF+H)=1.43  
 K(GaF+HF=GaF2+H)=0.83

Method: quinhydrone electrode. By calorimetry: DH(K1)=10.5 kJ mol<sup>-1</sup>,  
 DS=119 J K<sup>-1</sup> mol<sup>-1</sup>

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Ga+++ EMF NaClO4 25°C 0.50M U H 1967AHa (6908) 24  
 DH(K1)=7.5 kJ mol<sup>-1</sup>, DS=108.7 J K<sup>-1</sup> mol<sup>-1</sup>. At I=0 corr: DH(K1)=7.9, DS=142

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Ga+++ EMF NaClO4 25°C 0.50M U I 1964PCa (6909) 25  
 K(Ga+HF=GaF+H)=1.55  
 K(GaF+HF=GaF2+H)=0.57  
 K(GaF2+HF=GaF3+H)=-0.47

At I=0 corr: K1=5.86

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Ga+++ sp none 20°C 0.0 U K1=4.5 1960KLa (6910) 26  
 pH 2.7

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Ga+++ sp oth/un ? var U K1=4.5 1959BSg (6911) 27

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Ga+++ EMF NaClO4 25°C 0.50M U T H 1955YAa (6912) 28  
 K(Ga+HF=GaF+H)=1.54  
 K(GaF+HF=GaF2+H)=0.60  
 K(GaF2+HF=GaF3+H)=-0.44

At 5 C: \*K1=1.63, \*K2=0.76, \*K3=0.00. 50 C: \*K1=1.50, \*K2=0.60, \*K3=-0.70  
DH(\*K1)=-5.4 kJ mol<sup>-1</sup>, DS=39 J K<sup>-1</sup> mol<sup>-1</sup>; DH(\*K2)=-6, DS=6; DH(\*K3)=-23, DS=-85

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Ga+++ sp NaClO4 25°C 0.50M U K1=5.02 1952WTa (6913) 29  
K(Ga+HF=GaF+H)=2.08

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I- HL Iodide CAS 10034-85-2 (20)  
Iodide;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ con non-aq 140°C 100% U 1967BNc (8027) 30  
K(GaI3+I2=I+GaI4)=-1.89

Medium: liquid I2

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Ga+++ dis NaClO4 20°C 0.69M U K1=-0.24 1967MAd (8028) 31  
Medium:HClO4. Alternatively K1=-0.41, B2=-0.6

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MoO4-- H2L Molybdate (443)  
Molybdate;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ EMF NaClO4 25°C 1.00M U 1971ROa (8732) 32  
K(Ga+6H+6MoO4)=48

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NH3 L Ammonia CAS 7664-41-7 (414)  
Ammonia

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ gl R4N.X 25°C 5.00M U K1=4.1 1985MMa (9158) 33

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NO2- HL Nitrite CAS 7782-77-6 (635)  
Nitrite;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaClO4 25°C 1.00M U K1=2.1 1990EAa (9372) 34

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N3- HL Azide CAS 7782-79-8 (441)  
Azide;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaClO4 25°C 1.00M C H K1=3.48 1982AVb (10228) 35  
DH1=-23 kJ mol<sup>-1</sup>

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OH- HL Hydroxide (57)  
Hydroxide;

| Metal  | Mtd | Medium | Temp  | Conc  | Cal   | Flags | Lg K values   | Reference       | ExptNo |
|--|-----|--------|-------|-------|-------|-------|---|-----------------|--------|
| Ga+++  | gl  | NaCl   | 25°C  | 0.60M | C     |       | *K1=-4.02<br>*B(13,32)=-67.14   | 2002C0a (11485) | 36     |
| Ga+++  | sol | none   | 25°C  | dil   | C T H |       | *Kso(Ga(OH)3)=17.4  | 1998DCa (11486) | 37     |
| Self medium, 0.01-0.07 M. Values extraoplated from data for 40-150 C.<br>At 40 C, *Kso=16.1. DH(*Kso)=-136.45 kJ mol-1, DS=-124.0 J K-1 mol-1. |     |        |       |       |       |       |   |                 |        |
| Ga+++  | EMF | NaCl   | 25°C  | 0.0   | C TIH |       | *K1=-2.88   | 1998U0a (11487) | 38     |
| Method: Pt/H2 electrode. Data for 25-100 C. DH(*K1)=38.2 kJ mol-1,<br>DS(*K1)=73 J K-1 mol-1. In 1.0 M NaCl, *K1=-3.78.                        |     |        |       |       |       |       |   |                 |        |
| Ga+++  | sol | none   | 25°C  | 0.0   | M T   |       | *K1=-2.85<br>*B2=-7.28<br>*B3=-11.94<br>*B4=-15.66                                | 1997BDb (11488) | 39     |
| Calculated from solubility data for alpha-GaOOH at 150-250 C in 0.025 M NaCl.  |     |        |       |       |       |       |   |                 |        |
| Ga+++  | sol | none   | 25°C  | 0.0   | M T   |       | *Kso(GaOOH)=1.50<br>K(GaOOH(s)+H=Ga(OH)2)=-5.78<br>K(GaOOH(s)+H2O=Ga(OH)3)=-10.44 | 1997BDb (11489) | 40     |
| Calculated from solubility data for alpha-GaOOH at 150-250 C in 0.025 M NaCl. K(GaOOH(s)+2H=Ga(OH)+H2O)=-1.35 (*Ks2)                           |     |        |       |       |       |       |   |                 |        |
| Ga+++  | sol | none   | 25°C  | 0.0   | M T   |       |   | 1997DPb (11490) | 41     |
| Calculated from solubility of alpha-GaOOH in dilute buffer solutions at 25-250 C. K(GaOOH(s)+2H2O=Ga(OH)4+H)=-14.14. At 50C, K=-13.33.         |     |        |       |       |       |       |   |                 |        |
| Ga+++  | sol | NaCl   | 100°C | 0.0   | C I   |       |   | 1997U0a (11491) | 42     |
| Ks(GaOOH+3H)=-0.60.  |     |        |       |       |       |       |   |                 |        |
| Ga+++  | gl  | NaClO4 | 25°C  | 0.10M | C I   |       | *K1=-3.11<br>*B(5,15)=-35.83  | 1992PSb (11492) | 43     |
| Data for 0.01-1.0 M NaNO3 and NaClO4. In 0.10 M NaNO3, *K1=-2.94,<br>*B(5,15)=-35.51.  |     |        |       |       |       |       |   |                 |        |
| Ga+++  | nmr | oth/un | 25°C  | var   | C     |       | *K1=-2.6  | 1989AKc (11493) | 44     |
| Method:71Ga nmr. Medium: 0.3 or 1.0 M HClO4, 0.008-0.09 M Ga(ClO4)3.   |     |        |       |       |       |       |   |                 |        |
| Ga+++  | gl  | KCl    | 25°C  | 1.00M | C     |       |   | 1989BHa (11494) | 45     |

\*B4=-17.5

\*K1=-3.16

\*B2=-7.07

|       |    |                        |                 |    |
|-------|----|------------------------|-----------------|----|
| Ga+++ | gl | NaCl04 25°C 0.50M C TI | 1985CTa (11496) | 47 |
|-------|----|------------------------|-----------------|----|

\*K1=-3.69

\*K2=-3.74

|       |    |        |      |       |   |   |   |                 |    |
|-------|----|--------|------|-------|---|---|---|-----------------|----|
| Ga+++ | sp | NaClO4 | 25°C | 0.50M | U | T | H | 1984YIa (11497) | 48 |
|-------|----|--------|------|-------|---|---|---|-----------------|----|

\*K1=-2.89

Ga+++ sp NaCl04 25°C 0.10M U I K1=11.13 B2=21.46 1973BNc (11498) 49

$$B3=30.93$$

|       |     |        |   |       |   |                 |    |
|-------|-----|--------|---|-------|---|-----------------|----|
| Ga+++ | EMF | NaClO4 | ? | 1.00M | U | 1973G0a (11499) | 50 |
|-------|-----|--------|---|-------|---|-----------------|----|

\*K1=-3.56

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Ga+++      gl  NaCl04 50°C 1.00M U                                1971GIb (11500)  51
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$$*K_{so}(GaOOH(s) + 3H = Ga + 2H_2O) = 4.29$$

|       |                 |   |                 |    |
|-------|-----------------|---|-----------------|----|
| Ga+++ | kin oth/un 25°C | U | 1970HRb (11501) | 52 |
|-------|-----------------|---|-----------------|----|

\*K1=-4.2

Ga+++ kin NaCl04 25°C 0.50M U 19700Ea (11502) 53

$$K(2\text{GaOH}=\text{Ga}_2(\text{OH})_2)=1.70$$

|       |    |        |      |       |   |         |         |    |
|-------|----|--------|------|-------|---|---------|---------|----|
| Ga+++ | gl | NaCl04 | 25°C | 0.30M | U | 1970PTc | (11503) | 54 |
|-------|----|--------|------|-------|---|---------|---------|----|

\*K1=-5.45

$$*B(2,2)=-8.33$$

\*K1:  $\text{Me}_2\text{Ga} + \text{H}_2\text{O} = \text{Me}_2\text{GaOH} + \text{H}$ . \*B(2,2):  $2\text{Me}_2\text{Ga} + 2\text{H}_2\text{O} = (\text{Me}_2\text{Ga})_2(\text{OH})_2 + 2\text{H}$

Ga+++ gl NaCl04 50°C 1.00M U TI 1969CTa (11504) 55

$$*K_s(\text{Ga}(\text{OH})_3(\text{s}) + 3\text{H} = \text{Ga} + 3\text{H}_2\text{O}) = 3.7$$

\*K<sub>so</sub>=2.8(75 °C). In dilute soln. \*K<sub>so</sub>=3.2(50 °C), 2.2(75 °C)

|       |    |        |      |       |   |         |         |    |
|-------|----|--------|------|-------|---|---------|---------|----|
| Ga+++ | gl | NaCl04 | 60°C | 3.00M | U | 1969GAa | (11505) | 56 |
|-------|----|--------|------|-------|---|---------|---------|----|

$$K = -1.7 - 11.55n$$
$$\text{K: } (3n+1)\text{Ga} + 8n\text{H}_2\text{O} = \text{Ga}(\text{Ga}_3(\text{OH})_8)_n + 8n\text{H}$$

|       |     |        |       |       |   |                                  |    |
|-------|-----|--------|-------|-------|---|----------------------------------|----|
| Ga+++ | sp  | oth/un | 25°C  | 0.10M | U | 1968NAd (11506)                  | 57 |
|       |     |        |       |       |   | *K1=-2.9                         |    |
|       |     |        |       |       |   | *K2=-3.7                         |    |
|       |     |        |       |       |   | *K3=-4.4                         |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | gl  | NaCl04 | 25°C  | 0.30M | U | 1968TSb (11507)                  | 58 |
|       |     |        |       |       |   | *K1(Me2Ga) < -5.38               |    |
|       |     |        |       |       |   | *K2(Me2Ga) < -8.82               |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | sol | NaCl04 | 60°C  | 3.00M | U | 1967GSe (11508)                  | 59 |
|       |     |        |       |       |   | *Kso(alpha-Ga00H(s)+3H)=3.66     |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | gl  | KCl    | 25°C  | 3.00M | U | 1967HCa (11509)                  | 60 |
|       |     |        |       |       |   | B(40,100)=-213                   |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | ISE | none   | 25?°C | 0.0   | U | 1967VLc (11510)                  | 61 |
|       |     |        |       |       |   | B4=38.7                          |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | dis | NaCl   | 20°C  | 1.00M | U | 1965AKc (11511)                  | 62 |
|       |     |        |       |       |   | *K1=-1.40                        |    |
|       |     |        |       |       |   | *K2=-1.75                        |    |
|       |     |        |       |       |   | *K3=-2.12                        |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | dis | NaCl04 | 20°C  | 0.10M | U | 1965SAh (11512)                  | 63 |
|       |     |        |       |       |   | *K1=-0.44                        |    |
|       |     |        |       |       |   | *K2=-0.80                        |    |
|       |     |        |       |       |   | *K3=-1.05                        |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | sol | none   | 25°C  | 0.0   | U | 1964PCa (11513)                  | 64 |
|       |     |        |       |       |   | Kso=-39.10                       |    |
|       |     |        |       |       |   | *Kso=2.90                        |    |
|       |     |        |       |       |   | Ks(Ga(OH)3+OH)=0.33              |    |
|       |     |        |       |       |   | *Ks(Ga(OH)3+2H=Ga(OH)+2H)=0.3    |    |
|       |     |        |       |       |   | *Ks(Ga(OH)3+H=Ga(OH)2+H2O)=-3.15 |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | EMF | oth/un | 20°C  | var   | U | 1962INb (11514)                  | 65 |
|       |     |        |       |       |   | *K(Ga(OH)3+H2O)=-6.85            |    |
|       |     |        |       |       |   | K4=7.15                          |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | oth | none   | 25°C  | 0.0   | U | 1958VPa (11515)                  | 66 |
|       |     |        |       |       |   | *Kso=2.23(Ga203)                 |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | vlt | none   | 20°C  | 0.0   | U | 1957K0d (11516)                  | 67 |
|       |     |        |       |       |   | Kso(Ga(OH)3)=-34.0               |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | sol | oth/un | 19°C  | var   | U | 1952LAb (11517)                  | 68 |
|       |     |        |       |       |   | Kso(Ga(OH)3)=-36.3               |    |
|       |     |        |       |       |   | *Ks(Ga(OH)3+OH=Ga(OH)4)=-15      |    |
| ----- |     |        |       |       |   |                                  |    |
| Ga+++ | sp  | NaCl04 | 25°C  | 0.50M | U | 1952WTa (11518)                  | 69 |

$$*K1(Ga+H2O=GaOH+H)=-2.92$$

Ga+++ gl oth/un 25°C var U T 1950MKa (11519) 70  
Kso(Ga(OH)3)=-35.15  
\*K1=-3.4

$$K_{SO} = -36.0(10 \text{ C}), -34.03(40 \text{ C})$$

|                    |    |      |      |     |   |                 |    |
|--------------------|----|------|------|-----|---|-----------------|----|
| Ga+++              | gl | none | 18°C | 0.0 | U | 1949Lac (11520) | 71 |
| Kso(Ga(OH)3)=-36.5 |    |      |      |     |   |                 |    |

Ga+++      gl   oth/un 25°C   dil   U      19380Ka (11521)   72

Kso(Ga(OH)3(s))=-35.4

\*Ks(Ga(OH)3+OH)=-10.59

|       |     |      |      |     |   |                               |    |
|-------|-----|------|------|-----|---|-------------------------------|----|
| Ga+++ | EMF | none | 18°C | 0.0 | C | 1928FMa (11522)               | 73 |
|       |     |      |      |     |   | *K1(Ga+H2O=GaOH+H)=-2.8       |    |
|       |     |      |      |     |   | *K(GaOH+H2O=Ga(OH)2+H)=-3.5   |    |
|       |     |      |      |     |   | *K(Ga(OH)4+H2O=Ga(OH)5)=-10.3 |    |
|       |     |      |      |     |   | *K(Ga(OH)5+H2O=Ga(OH)6)=-11.7 |    |

Method: H electrode

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|            |     |           |               |       |
|------------|-----|-----------|---------------|-------|
| P04---     | H3L | Phosphate | CAS 7664-38-2 | (176) |
| Phosphate; |     |           |               |       |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      con oth/un 25°C 0.06M U      1978RPa (13196) 74  
K(Ga+H2PO4)=3.07

|       |    |                     |                 |    |
|-------|----|---------------------|-----------------|----|
| Ga+++ | ix | NaClO4 25°C 1.00M U | 1975MGa (13197) | 75 |
|       |    | K(Ga+HL)=7.26       |                 |    |
|       |    | K(Ga+H2L)=1.48      |                 |    |

Ga+++ ix R4N.X ? 0.20M U 1974FGC (13198) 76  
 K(2Ga+H2L=Ga2HL+2H)=-1.10

Ga+++      sol NaClO4 25°C    1.0M U      Kso=-21.0      1964TCC (13199)    77

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P207---- H4L Pyrophosphate CAS 2466-09-3 (198)  
Diphosphate; from  $(\text{HO})_2\text{PO.O.PO}(\text{OH})_2$

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

|       |    |       |      |       |   |   |  |                |                 |    |
|-------|----|-------|------|-------|---|---|--|----------------|-----------------|----|
| Ga+++ | sp | NaN03 | 20°C | 0.10M | U | I |  | K(Ga+HL)=10.23 | 1971BSm (13592) | 78 |
|-------|----|-------|------|-------|---|---|--|----------------|-----------------|----|

$$K(\text{Ga}+\text{HL})=12.23(I=0)$$

\*\*\*\*\*

P3010----- H5L CAS 10380-08-2 (1001)  
 Tripolyphosphate; from (HO)2PO.O.PO(OH).O.PO(OH)2



| Metal  | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg K values  | Reference                | ExptNo |
|--|-----|--------|------|-------------|-----|-------|--|--------------------------|--------|
| Ga+++  | sp  | oth/un | 20°C | 0.10M       | U   | I     | K1=16.7<br>K(Ga+2H2L)=9.95<br>K(Ga+HL)=9.53<br>K(Ga+2HL)=18.36 | 1971SBe (13860)          | 79     |
| At I=0 corr: K1=19.00, K(Ga+H2L)=12.35, K(Ga+2H2L)=20.24                   |     |        |      |             |     |       |  |                          |        |
| *****  |     |        |      |             |     |       |  |                          |        |
| SCN-   |     |        | HL   | Thiocyanate |     |       | CAS 463-56-9   | (106)                    |        |
| Thiocyanate;   |     |        |      |             |     |       |  |                          |        |
| Metal  | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg K values  | Reference                | ExptNo |
| Ga+++  | cal | non-aq | 25°C | 100%        | C   | IH    | K1=3.7<br>K3=2.3<br>K4=1.6                                     | B2= 6.70 1996TSa (15010) | 80     |
| Medium: N,N-Dimethylformamide,0.20 M Et4NClO4. Also data at 0.4 M Et4NClO4 |     |        |      |             |     |       |  |                          |        |
| DH(K1)=6.7 kJ mol-1, DH(K2)=5.0, DH(K3)=3.2, DH(K4)=0.7.                   |     |        |      |             |     |       |  |                          |        |
| Ga+++  | sp  | non-aq | 25°C | 100%        | U   | IH    | K1=3.50  | 1986PGa (15011)          | 81     |
| Medium: DMSO. DH=11.1 kJ mol-1; DS=104 J K-1 mol-1                         |     |        |      |             |     |       |  |                          |        |
| Ga+++  | sp  | NaClO4 | 25°C | 0.50M       | U   |       | K1=1.32  | 1985CTa (15012)          | 82     |
| Ga+++  | vlt | NaClO4 | 20°C | 6.00M       | U   |       | K1=1.48<br>B2=2.72<br>B3=2.67                                  | 1985KBa (15013)          | 83     |
| Ga+++  | vlt | NaClO4 | 25°C | 0.26M       | U   | I     | K1=1.54  | 1974TMb (15014)          | 84     |
| K1=1.35(I=0.56), 1.21(I=0.76), 1.33(I=1.06), 1.43(I=2.06)                  |     |        |      |             |     |       |  |                          |        |
| In 1 M HClO4, K1=1.60(I=0.26), 1.37(I=0.56), 1.36(I=2.06). I=0, K1=2.3     |     |        |      |             |     |       |  |                          |        |
| Ga+++  | sp  | oth/un | 30°C | 0.0         | U   | T     | K1=2.15  | 1968DDa (15015)          | 85     |
| Medium: 0 corr. Using ISE: K1=2.26(35 C)                                   |     |        |      |             |     |       |  |                          |        |
| Ga+++  | sp  | NaClO4 | 20°C | 0.60M       | U   |       | K1=1.18  | 1964KSe (15016)          | 86     |
| *****  |     |        |      |             |     |       |  |                          |        |
| SO4--  |     |        | H2L  | Sulfate     |     |       | CAS 7664-93-9  | (15)                     |        |
| Sulfate;   |     |        |      |             |     |       |  |                          |        |
| Metal  | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg K values  | Reference                | ExptNo |
| Ga+++  | kin | NaClO4 | 25°C | 0.10M       | U   |       | K1=1.94<br>K(GaOH+SO4)=1.11                                    | 1977PSa (16211)          | 87     |
| Ga+++  | ix  | NaClO4 | 20°C | 1.0M        | U   |       | K1=1.1   | 1974SCa (16212)          | 88     |
| Ga+++  | kin | oth/un | 25°C | dil         | U   |       | K1=3.2<br>K1out=3.11<br>K1in=-0.5                              | 1971KKa (16213)          | 89     |

-----  
 Ga+++ cal none 25°C 0.0 U H K1=2.77 B2=5.06 1969IEa (16214) 90  
 DH(K1)=19.7 kJ mol<sup>-1</sup>, DS=118.7 J K<sup>-1</sup> mol<sup>-1</sup>, DH(K2)=-7.2, DS=20.1  
 -----

Ga+++ sp oth/un 30°C 0.0 U K1=2.99 1962NAc (16215) 91  
 \*\*\*\*\*  
 CH4O L Methyl alcohol CAS 67-56-1 (597)  
 Methanol; CH3.OH  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----

Ga+++ EMF alc/w 20°C 100% U 1964GUa (17880) 92  
 K(Ga+H-1L)=10.2  
 Method: H electrode. Medium: MeOH, 1.0 M Me4NCl  
 \*\*\*\*\*  
 C2H2O4 H2L Oxalic acid CAS 144-62-7 (24)  
 Ethanedioic acid; (COOH)<sub>2</sub>  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----

Ga+++ gl NaClO4 20°C 0.10M U K1=9.20 1985SAa (18904) 93  
 -----

Ga+++ sp NaClO4 20°C 1.00M U M 1977ZKa (18905) 94  
 K(Ga(NTA)+L)=4.38  
 -----

Ga+++ vlt NaClO4 25°C 1.00M U K1=7.06 1972MGf (18906) 95  
 Method : amperometry  
 -----

Ga+++ dis NaClO4 20°C 0.10M U 1963STc (18907) 96  
 B3=17.98  
 -----

Ga+++ gl KNO3 32°C 1.0M U 1957DSa (18908) 97  
 K3=4.55  
 \*\*\*\*\*  
 C2H4O2 HL Acetic acid CAS 64-19-7 (36)  
 Ethanoic acid; CH3.COOH  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----

Ga+++ gl NaCl 25°C 0.60M C 2002COa (19971) 98  
 K(Ga+HL=GaL+H)=-2.08  
 K(2Ga+HL+2H2O=Ga2(OH)2L+3H)=-5.65.  
 -----

Ga+++ gl NaClO4 20°C 0.10M U K1=3.68 1985SAa (19972) 99  
 \*\*\*\*\*  
 C2H4O2S H2L Thioglycolic CAS 68-11-1 (596)  
 Mercaptoethanoic acid; HS.CH2.COOH  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----

Ga+++      gl   KNO3    25°C 0.50M M      K1=11.20   B2=22.34   1984TZa (20321) 100  
B3=29.67  
B4=31.91

-----  
Ga+++      gl   NaClO4   25°C 0.02M U T      K1=11.75   B2=22.83   1976AMd (20322) 101  
K3=7.18

At 45 C, K1=11.48, K2=10.74, K3=7.48

\*\*\*\*\*

C2H4O3                      HL   Glycolic acid    CAS 79-14-1   (33)  
2-Hydroxyethanoic acid; HO.CH2.COOH

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo

-----  
Ga+++      gl   NaClO4   25°C 0.02M U T      K1=3.39   B2=6.53   1976AMd (20543) 102  
2.67

At 45 C, K1=3.45, K2=3.20, K3=2.98

\*\*\*\*\*

C2H5NO2                      HL   Glycine                      CAS 56-40-6   (85)  
2-Aminoethanoic acid; H2N.CH2.COOH

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo

-----  
Ga+++      gl   NaClO4   20°C 0.10M U      K1=9.71      1985SAa (21557) 103

-----  
Ga+++      gl   KNO3      35°C 0.10M U      M      1980KHb (21558) 104  
B(GaL(tripolyphosphate))=7.96

-----  
Ga+++      gl   NaClO4   25°C    3.0M U      K1=9.60      1975BHb (21559) 105  
K(Ga+HL)=2.11

-----  
Ga+++      EMF   KNO3    22°C 0.10M U      K1=9.33      1968ZKb (21560) 106

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C2H5NO2                      HL   Acetohydroxamic   CAS 546-88-3   (2766)  
Acetohydroxamic acid, N-Hydroxyacetamide; CH3.CO.NHOH

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo

-----  
Ga+++      gl   KCl      25°C 0.20M C      K1=9.51   B2=18.42   1995FKa (21812) 107  
B3=26.21

\*\*\*\*\*

C2H7NS                      HL                                      CAS 60-23-1   (588)  
2-Aminoethanethiol; H2N.CH2.CH2.SH

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo

-----  
Ga+++      gl   KCl      25°C 0.10M C      K1=14.82      1995LMa (22491) 108  
B(GaHL)=18.49

-----  
Ga+++      dis   NaClO4   20°C 1.00M U      1985MKc (22492) 109  
K(Ga+H2L)=1.90

K(Ga+HL)=5.50

Extraction by bis(2-ethylhexyl)phosphoric acid and TTA

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C2H8N2 L Ethylenediamine CAS 107-15-7 (23)

1,2-Diaminoethane; H2N.CH2.CH2.NH2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|-----------------|--------|
| Ga+++ | gl  | NaNO3  | 25°C | 0.10M | U   |       | K1=12.72<br>K(GaL+OH)=6.70<br>K(GaH-1L+OH=GaH-2L)=6.33 | 1991DMb (23161) | 110    |

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C2H8O7P2 H4L HEDPA CAS 2809-21-4 (436)

1-Hydroxyethane-1,1-diphosphonic acid; CH3.C(OH)(PO3H2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                                | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | U   |       | K1=18.52<br>K(GaL+H)=3.04<br>*K(GaL)=-5.00 | 1980MMd (23373) | 111    |

|       |    |        |      |     |   |  |  |                 |     |
|-------|----|--------|------|-----|---|--|--|-----------------|-----|
| Ga+++ | sp | oth/un | 20°C | dil | U |  | K1=19.50<br>K(Ga+HL)=11.43<br>K(Ga+H2L)=5.69 | 1971CAf (23374) | 112 |
|-------|----|--------|------|-----|---|--|--|-----------------|-----|

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C2H16N5O4Co HL (231)

Pentaammineoxalatocobalt(III); Co(NH3)5(HC2O4)

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | sp  | NaClO4 | 28°C | 0.30M | U   |       | K1=2.68     | 1974NDa (23474) | 113    |

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C3H4O4 H2L Malonic acid CAS 141-82-2 (79)

Propanedioic acid; CH2(COOH)2

| Metal | Mtd | Medium | Temp | Conc  | Cal   | Flags | Lg K values      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-------|-------|------------------|-----------------|--------|
| Ga+++ | vlt | NaClO4 | 25°C | 0.20M | C T H |       | K1=7.00 B2=12.46 | 1984MAb (24458) | 114    |

Also data for 35 and 45 C. DH and DS values reported.

|       |    |        |      |   |   |  |                     |                 |     |
|-------|----|--------|------|---|---|--|---------------------|-----------------|-----|
| Ga+++ | gl | oth/un | 35°C | ? | U |  | K3=2.67<br>B3=13.67 | 1958DBb (24459) | 115 |
|-------|----|--------|------|---|---|--|---------------------|-----------------|-----|

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C3H6NO2Cl HL (8169)

3-Chloroalanine;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|------------------|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=4.51 B2= 8.39 | 1981TMe (24760) | 116    |

B3=10.34

Also data for the schiff based formed with pyridoxal.

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C3H6O2S H2L Thiolactic acid CAS 79-42-5 (366)

2-Mercaptopropanoic acid; CH3.CH(SH).COOH

| Metal                                | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values      | Reference       | ExptNo |
|--------------------------------------|-----|--------|------|-------|-----|-------|------------------|-----------------|--------|
| Ga+++                                | gl  | NaClO4 | 25°C | 0.02M | U T |       | K1=11.60 B2=6.47 | 1976AMd (25144) | 117    |
| At 45 C, K1=12.02, K2=11.48, K3=7.25 |     |        |      |       |     |       |                  |                 |        |

\*\*\*\*\*

C3H6O3 HL L-Lactic acid CAS 79-33-4 (82)

L-2-Hydroxypropanoic acid; CH3.CH(OH).COOH

| Metal                              | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values             | Reference       | ExptNo |
|------------------------------------|-----|--------|------|-------|-----|-------|-------------------------|-----------------|--------|
| Ga+++                              | gl  | NaClO4 | 20°C | 0.10M | U   |       | K1=4.33                 | 1985SAa (25446) | 118    |
| Ga+++                              | gl  | NaClO4 | 25°C | 0.02M | U T |       | K1=3.28 B2=6.37 K3=2.92 | 1976AMd (25447) | 119    |
| At 45 C, K1=3.51, K2=3.26, K3=2.97 |     |        |      |       |     |       |                         |                 |        |

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C3H7NO2 HL Alanine CAS 56-41-7 (86)

2-Aminopropanoic acid; H2N.CH(CH3).COOH

| Metal                         | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------------------------------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++                         | gl  | KNO3   | 35°C | 0.10M | U M |       |             | 1980KHb (26178) | 120    |
| B(GaL(tripolyphosphate))=8.94 |     |        |      |       |     |       |             |                 |        |

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C3H7NO2S H2L Cysteine CAS 52-90-4 (96)

2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values                        | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|------------------------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 3.0M | C   |       | K1=16.1 K(Ga+H2L)=2.4 K(Ga+HL)=8.3 | 1976BHb (26781) | 121    |

\*\*\*\*\*

C3H7NO3 HL Serine CAS 56-45-1 (49)

2-Amino-3-hydroxypropanoic acid; H2N.CH(CH2.OH)COOH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values         | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|---------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 3.0M | C   |       | K1=9.0 K(Ga+HL)=1.8 | 1976BHb (27134) | 122    |

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C3H8NO5P H3L 3-Phosphono-Ala CAS 20263-06-3 (1509)

2-Amino-3-phosphonatopropanoic acid; (H2O3P)CH2.CH(NH2).COOH

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| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values               | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 1.00M | C   | M     | K1=14.55<br>K(InL+H)=2.52 | 1985SMd (27351) | 123    |

ternary complexes with pyridoxal-5'-phosphoric acid

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C3H8N05P                      H3L                      CAS 23052-80-4 (1508)  
3-Amino-3-phosphonatopropanoic acid; (H2O3P)(NH2)CH.CH2.COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values               | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 1.00M | C   |       | K1=13.37<br>K(GaL+H)=2.91 | 1989MSb (27362) | 124    |

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C3H8N06P                      H3L      Phosphoserine      CAS 17885-08-4 (1865)  
Serine dihydrogenphosphate, O-Phosphoserine; NH2.CH(CH2.OP03H2).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values         | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=6.18    B2= 9.87 | 1981TMe (27469) | 125    |

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C3H9NS                      HL                      CAS 462-47-5 (1566)  
3-Aminopropane-1-thiol; H2N.CH2.CH2.CH2.SH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                     | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------------------|-----------------|--------|
| Ga+++ | dis | NaClO4 | 20°C | 1.00M | U   |       | K(Ga+H2L)=2.90<br>K(Ga+HL)=7.20 | 1985MKc (27953) | 126    |

Extraction by bis(2-ethylhexyl)phosphoric acid and TTA

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C3H11N06P2                      H4L                      (6772)  
(Dimethylamino)-N-methylenediphosphonic acid; (CH3)2N.CH(P03H2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---|-----------------|--------|
| Ga+++ | gl  | NaNO3  | 24°C | 0.20M | C   |       | K1=25.8    B2=33.7<br>K(GaL+H)=1.5<br>K(GaHL+H)=1.5<br>K(GaH2L2+H)=5.4<br>K(GaH3L2+H)=4.0 | 1993BRa (28411) | 127    |

K(GaH4L2+H)=2.0, K(GaH5L2+H)=2.0

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C4H6O4S                      H3L      Thiomalic acid      CAS 70-49-5 (109)  
2-Mercaptosuccinic acid, 2-Sulfanyl-1,4-butanedioic acid; H00C.CH(SH).CH2.COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values          | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 0.02M | U   | T     | K1=13.08    B2=20.60 | 1976AMd (30333) | 128    |

At 45 C, K1=14.41, K2=8.52

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C4H6O5                      H2L      Malic acid                      CAS 617-48-1 (393)  
2-Hydroxybutane-1,4-dioic acid, Hydroxy-succinic acid; HOOC.CH2.CH(OH).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|-------------------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 0.02M | U   | T     |    | K1=5.87    B2=9.94<br>K3=3.04 | 1976AMd (30631) | 129    |

At 45 C, K1=6.19, K2=4.36, K3=2.96

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C4H6O6                      H2L      L-Tartaric acid                      CAS 87-69-4 (92)  
L-Tartaric acid, L-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 20°C | 0.10M | U   |       |    | B(GaH-1L)=4.10<br>K(Ga+H-1L)=18.50         | 1985SAa (31256) | 130    |
| Ga+++ | dis | NaClO4 | 25°C | 1.00M | U   |       |    | K1=5.55    B2=9.33<br>K(Ga+2HL)=5.23       | 1975KLb (31257) | 131    |
| Ga+++ | oth | oth/un | 25°C | 1.00M | U   |       |    | K1=4.93<br>K(Ga+HL)=2.44<br>K(Ga+H2L)=1.23 | 1972GMc (31258) | 132    |

Method is amperometry

|       |     |        |      |       |   |  |  |                          |                 |     |
|-------|-----|--------|------|-------|---|--|--|--------------------------|-----------------|-----|
| Ga+++ | EMF | oth/un | 25°C | 1.00M | U |  |  | K1=4.93<br>K(Ga+HL)=2.45 | 1972GMc (31259) | 133 |
|-------|-----|--------|------|-------|---|--|--|--------------------------|-----------------|-----|

|       |     |        |      |       |   |  |  |         |                 |     |
|-------|-----|--------|------|-------|---|--|--|---------|-----------------|-----|
| Ga+++ | dis | NaClO4 | 20°C | 0.10M | U |  |  | B2=9.76 | 1963STc (31260) | 134 |
|-------|-----|--------|------|-------|---|--|--|---------|-----------------|-----|

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C4H7NO4                      H2L      Aspartic acid                      CAS 56-84-8 (21)  
Aminobutanedioic acid; H2N.CH(CH2.COOH).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                       | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--------------------------------|-----------------|--------|
| Ga+++ | gl  | KNO3   | 35°C | 0.10M | U   | M     |    | B(GaHL(tripolyphosphate))=8.31 | 1980KHb (31857) | 135    |
| Ga+++ | gl  | NaClO4 | 25°C | 0.02M | U   | T     |    | K1=3.28    B2=6.18<br>K3=2.84  | 1976AMd (31858) | 136    |

At 45 C, K1=3.55, K2=3.23, K3=3.03 (ligand may be HL, not L ?)

|       |     |      |      |       |   |  |  |          |                 |     |
|-------|-----|------|------|-------|---|--|--|----------|-----------------|-----|
| Ga+++ | EMF | KNO3 | 22°C | 0.10M | U |  |  | K1=11.17 | 1968ZKb (31859) | 137 |
|-------|-----|------|------|-------|---|--|--|----------|-----------------|-----|

\*\*\*\*\*

C4H7NO4                      H2L      IDA                      CAS 142-73-4 (118)  
Iminodiethanoic acid; HN(CH2.COOH)2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|   |     |        |      |       |            |                              |   |                     |
|---|-----|--------|------|-------|------------|------------------------------|---|---------------------|
| Ga+++   | sp  | oth/un | 25°C | 0.10M | U          | K1=12.76                     | 1997YSa (32259)   | 138                 |
| Ga+++   | gl  | NaCl04 | 20°C | 0.10M | U          | K1=10.60                     | 1985SAa (32260)   | 139                 |
| Ga+++   | gl  | KNO3   | 25°C | 0.10M | C          | K1=12.76<br>K(GaL(OH)+H)=3.5 | 1976HMd (32261)   | 140                 |
| *****   |     |        |      |       |            |                              |   |                     |
| C4H8NO2Cl   |     | HL     |      |       |            | (8170)                       |   |                     |
| 3-Chloro-2-aminobutanoic acid;  |     |        |      |       |            |                              |   |                     |
| Metal   | Mtd | Medium | Temp | Conc  | Cal        | Flags                        | Lg K values   | Reference ExptNo    |
| Ga+++   | gl  | KNO3   | 25°C | 0.10M | C          |                              | K1=4.89 B2= 9.00  | 1981TMe (32469) 141 |
| *****   |     |        |      |       |            |                              |   |                     |
| C4H8N2O3  |     | HL     |      |       | Asparagine |                              | CAS 70-47-3 (17)  |                     |
| 2-Aminobutanedioic acid 4-amide; H2N.CH(CH2.CO.NH2).COOH                        |     |        |      |       |            |                              |   |                     |
| Metal   | Mtd | Medium | Temp | Conc  | Cal        | Flags                        | Lg K values   | Reference ExptNo    |
| Ga+++   | EMF | KNO3   | 22°C | 0.10M | U          |                              | K1=11.17  | 1968ZKb (32699) 142 |
| *****   |     |        |      |       |            |                              |   |                     |
| C4H8N2O3  |     | HL     |      |       | Gly-Gly    |                              | CAS 556-50-3 (54)   |                     |
| Glycyl-glycine; H2N.CH2.CO.NH.CH2.COOH  |     |        |      |       |            |                              |   |                     |
| Metal   | Mtd | Medium | Temp | Conc  | Cal        | Flags                        | Lg K values   | Reference ExptNo    |
| Ga+++   | gl  | KNO3   | 35°C | 0.10M | U          | M                            |   | 1980KHb (33025) 143 |
| B(GaHL(tripolyphosphate))=3.91  |     |        |      |       |            |                              |   |                     |
| Ga+++   | EMF | KNO3   | 22°C | 0.10M | U          |                              | K1=7.57   | 1968ZKb (33026) 144 |
| *****   |     |        |      |       |            |                              |   |                     |
| C4H8N2O4  |     | H2L    |      |       |            |                              | (6369)  |                     |
| N(1)-Hydroxyasparagine, aspartyl-beta-hydroxamic acid; H2N.CH(CH2.CO.NHOH).COOH |     |        |      |       |            |                              |   |                     |
| Metal   | Mtd | Medium | Temp | Conc  | Cal        | Flags                        | Lg K values   | Reference ExptNo    |
| Ga+++   | gl  | KCl    | 25°C | 0.20M | C          |                              | B2=24.23<br>B(GaHL)=18.33<br>B(GaH2L2)=35.53<br>B(GaHL2)=31.61<br>B(GaH-1L2)=15.6 | 1995FKa (33136) 145 |
| *****   |     |        |      |       |            |                              |   |                     |
| C4H9NO3   |     | HL     |      |       | Threonine  |                              | CAS 72-19-5 (48)  |                     |
| 2-Amino-3-hydroxybutanoic acid; H2N.CH(CH(OH).CH3)COOH                          |     |        |      |       |            |                              |   |                     |
| Metal   | Mtd | Medium | Temp | Conc  | Cal        | Flags                        | Lg K values   | Reference ExptNo    |
| Ga+++   | gl  | KNO3   | 35°C | 0.10M | U          | M                            |   | 1980KHb (34302) 146 |
| B(GdL(tripolyphosphate))=7.21   |     |        |      |       |            |                              |   |                     |



\*\*\*\*\*  
 C4H11NO8P2                      H5L                      CAS 2439-99-8 (2129)  
 N-Carboxymethyl-N,N-bis(methylenephosphonic acid); HOOC.CH2.N(CH2.PO3H2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | U   |       |    | K1=21.93<br>K(GaL+H)=4.09<br>K(GaHL+H)=2.51<br>*K(GaL)=-6.61 | 1980MMd (35108) | 147    |

\*\*\*\*\*  
 C4H13NO6P2S                      H5L                      CAS 78014-43-4 (2649)  
 2-Mercaptoethylamine-N,N-bis(methylphosphonic acid); HS.CH2.CH2.N(CH2.PO3H2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---------------|-----------------|--------|
| Ga+++ | dis | NaClO4 | 20°C | 1.00M | U   |       |    | K(Ga+H3L)=6.4 | 1983KDd (35610) | 148    |

\*\*\*\*\*  
 C4H13NO9P2S                      H5L                      CAS 58480-01-6 (2650)  
 2-Sulfoethylamine-N,N-di(methylphosphonic acid); HSO3.CH2.CH2.N(CH2.PO3H2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values       | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|----------------|-----------------|--------|
| Ga+++ | dis | NaClO4 | 20°C | 1.00M | U   |       |    | K(Ga+H3L)=10.4 | 1983KDd (35620) | 149    |

\*\*\*\*\*  
 C4H14N2O6P2                      H2L                      EDDPO                      CAS 1733-49-9 (2435)  
 1,2-Diaminoethane-N,N'-bis(methylenephosphonic) acid; (H2O3P.CH2.NH.CH2)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values       | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|----------------|-----------------|--------|
| Ga+++ | dis | NaClO4 | 20°C | 1.00M | U   |       |    | K(Ga+H2L)=10.9 | 1983KDd (35880) | 150    |

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | U   |       |    | K1=19.84<br>K(GaL+H)=5.0<br>K(GaHL+H)=1.5<br>*K(GaL)=-7.2 | 1980MMd (35881) | 151    |

\*\*\*\*\*  
 C5H20F6                      HL                      HFA                      CAS 1522-22-1 (195)  
 1,1,1,5,5,5-Hexafluoropentane-2,4-dione; F3C.CO.CH2.CO.CF3

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------------|--------|
| Ga+++ | nmr | non-aq | 25°C | 100% | U   | H     |    |          | 1964PCa (35926) | 152    |

Method:NMR, medium:CHCl3. DG(trans-GaL3=cis-GaL3)=3.9 kJ mol<sup>-1</sup>, DH=2, DS=-8

\*\*\*\*\*  
 C5H5NO2                      HL                      CAS 13161-30-3 (5582)  
 1-Hydroxypyridin-2(1H)-one, 2-Hydroxypyridine 1-oxide;

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Ga+++      gl  KCl      25°C 0.10M U      K1=9.12  B2=16.72  1993LMc (36755) 153
*****
C5H5NO3      H2L      CAS 99110-85-7 (2195)
1,4-Dihydroxy-2-pyridinone;

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Ga+++      gl  KCl      25°C 0.10M C      B2=22.48      1992CMc (36844) 154
                        B3=25.96
                        B(GaHL)=17.7
                        B(GaH2L)=29.00
                        B(GaH2L2)=34.25

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B(GaHL3)=29.53
*****
C5H8O2      HL      Acetylacetone      CAS 123-54-6 (164)
Pentane-2,4-dione; CH3.CO.CH2.CO.CH3

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Ga+++      vlt diox/w 25°C 5% C T H      K1=9.87  B2=18.23  1984MAb (37976) 155
Medium: 5% dioxane/H2O, 0.20 M NaClO4. Also data for 35 and 45 C.
DH and DS values reported.

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Ga+++      gl  oth/un 30°C 0.0 U      K1=9.5  B2=17.90  1955IFa (37977) 156
                        K3=5.7
*****
C5H9NO2      HL      Proline      CAS 147-85-3 (44)
Pyrrolidine-2-carboxylic acid; C4H8N.CO0H

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Ga+++      gl  KNO3      35°C 0.10M U      M      1980KHb (38615) 157
                        B(GaL(tripolyphosphate))=8.53
*****
C5H9NO3      HL      Hydroxyproline      CAS 51-35-4 (416)
4-Hydroxy-2-pyrrolidinecarboxylic acid; C4H7N(OH)(COOH)

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Ga+++      gl  KNO3      35°C 0.10M U      M      1980KHb (38732) 158
                        B(GaL(tripolyphosphate))=7.55
*****
C5H9NO4      H2L      Glutamic acid      CAS 56-86-0 (22)
2-Aminopentanedioic acid; H2N.CH(CH2.CH2.CO0H)COOH

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----

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Ga+++ gl KNO3 35°C 0.10M U M 1980KHb (39084) 159  
B(GaHL(tripolyphosphate))=7.99

Ga+++ gl NaClO4 25°C 3.0M C K1=11.30 1976BHb (39085) 160  
K(Ga+HL)=4.30  
K(Ga+H2L)=2.30

Ga+++ EMF KNO3 22°C 0.10M U K1=11.15 1968ZKb (39086) 161  
\*\*\*\*\*  
C5H10NO7P H4L PMIDA CAS 5994-61-6 (2433)  
N-(Phosphonomethyl)iminodiethanoic acid; H2O3P.CH2.N(CH2.COOH)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
Ga+++ gl KNO3 25°C 0.10M U K1=19.50 1980MMd (39675) 162  
K(GaL+H)=3.10  
\*K(GaL)=-5.95

\*\*\*\*\*  
C5H10N2O4 HL CAS 1955-67-5 (6736)  
2-Aminopentanoic-5-hydroxamic acid; HOOC.CH(NH2).CH2.CH2.CO.NOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
Ga+++ gl KCl 25°C 0.20M C B2=24.2 1995FKa (40080) 163  
B(GaHL)=18.5  
B(GaH2L2)=35.0  
B(GaHL2)=30.8

\*\*\*\*\*  
C5H11NO2 HL Valine CAS 72-18-4 (43)  
2-Amino-3-methylbutanoic acid; H2N.CH(CH(CH3)2)COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
Ga+++ gl KNO3 35°C 0.10M U M 1980KHb (40708) 164  
B(GaL(tripolyphosphate))=7.96

Ga+++ gl KNO3 22°C 0.10M U K1=9.02 1968ZKb (40709) 165  
\*\*\*\*\*  
C5H11NO2S HL Methionine CAS 63-68-3 (42)  
2-Amino-4-(methylthio)butanoic acid; H2N.CH(CH2.CH2.S.CH3)COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
Ga+++ gl NaClO4 25°C 3.0M C K1=8.9 1976BHb (41095) 166  
K(Ga+HL)=1.8

\*\*\*\*\*  
C6H5NCl2 L Dichloroaniline CAS 608-27-5 (762)  
2,3-Dichloroaniline; H2N.C6H3(Cl)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

-----  
Ga+++ sp diox/w 25°C 100% U 1976BSa (42343) 167  
K(GaCl3+L)=0.73

\*\*\*\*\*  
C6H5NC12 L Dichloroaniline CAS 554-00-7 (761)  
2,4-Dichloroaniline; H2N.C6H3(Cl)2  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp diox/w 25°C 100% U 1976BSa (42348) 168  
K(GaCl3+L)=1.08

\*\*\*\*\*  
C6H5NC12 L Dichloroaniline CAS 95-76-1 (759)  
3,4-Dichloroaniline; H2N.C6H3(Cl)2  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp diox/w 25°C 100% U T H 1976BSa (42353) 169  
K(GaCl3+L)=2.33

At 10 - 50 C. DH = -22.5 kJ mol-1; DS = -31.3 J K-1 mol-1.

\*\*\*\*\*  
C6H5NC12 L Dichloroaniline CAS 626-43-7 (760)  
3,5-Dichloroaniline; H2N.C6H3(Cl)2  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp diox/w 25°C 100% U T H 1976BSa (42357) 170  
K(GaCl3+L)=1.69

At 10-50 C. DH = -21.7 kJ mol-1; DS = -40.9 J K-1 mol-1.

\*\*\*\*\*  
C6H5NO3 H2L CAS 609-71-2 (5910)  
2-Hydroxypyridine-3-carboxylic acid;  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaCl 25°C 0.16M C 1998S0b (42723) 171  
K(Ga+HL)=6.78

K(Ga+2HL)=12.43

K(Ga+3HL)=16.20

\*\*\*\*\*  
C6H5NO3 H2L CAS 874-24-8 (4356)  
3-Hydroxypyridine-2-carboxylic acid; C5H3N.(OH)(COOH)  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaCl 25°C 0.16M C 1998S0b (42750) 172  
K(Ga+HL)=7.04

K(Ga+2HL)=13.09

K(Ga+3HL)=17.74

\*\*\*\*\*

C6H5NO3                      HL      4-Nitrophenol                      CAS 100-02-7    (454)  
4-Nitrohydroxybenzene; HO.C6H4.NO2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

Ga+++ sp NaClO4 25°C 0.10M C 2000MAa (42806) 173  
K(Ga+H2L=GaL+2H)=-1.47

Medium: LiClO<sub>4</sub>.

\*\*\*\*\*

C6H5N2O2Cl L CAS 635-22-3 (763)  
3-Nitro-4-chloroaniline; H2N.C6H3(Cl)(NO2)

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ sp diox/w 25°C 100% U T H 1976BSa (42978) 174  
K(GaCl3+L)=1.42

At 10 - 50 C.  $\Delta H = -21.3 \text{ kJ mol}^{-1}$ ;  $\Delta S = -44.3 \text{ J K}^{-1} \text{ mol}^{-1}$ .

\*\*\*\*\*

C6H6NBr L 3-Bromoaniline CAS 591-19-5 (758)  
3-Bromoaniline; H2N.C6H4.Br

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ sp diox/w 25°C 100% U T H 1976BSa (43176) 175  
K(GaCl3+L)=2.85

At 10 - 50 C.  $\Delta H = -27.6 \text{ kJ mol}^{-1}$ ;  $\Delta S = -38.4 \text{ J K}^{-1} \text{ mol}^{-1}$ .

\*\*\*\*\*

C6H6N2O2                    L        m-Nitroaniline        CAS 99-09-2    (464)  
3-Nitroaminobenzene; H2N.C6H4.NO2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ sp diox/w 25°C 100% U T H 1976BSa (43388) 176  
K(GaCl3+L)=2.01

At 10 -50 C.  $\Delta H = -24.6 \text{ kJ mol}^{-1}$ ;  $\Delta S = -44.3 \text{ J K}^{-1} \text{ mol}^{-1}$ .

\*\*\*\*\*

C6H6O2                      H2L                      Catechol                      CAS 120-80-9                      (534)  
1,2-Dihydroxybenzene, pyrocatechol; HO.C6H4.OH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ g1 KNO3 22°C 0.10M U K1=18.88 1968ZKb (43760) 177

Ga+++      vlt KCl      ?   0.10M U      1966ZKa (43761) 178  
K(Ga+2H2L=GaL2+4H)=4.84    (?)

\*\*\*\*\*

C6H6O3                      H3L      Pyrogallol                      CAS 87-66-1    (696)  
1,2,3-Trihydroxybenzene; C6H3(OH)3

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

\*\*\*\*\*

|        |    |           |                      |
|--------|----|-----------|----------------------|
| C6H6O3 | HL | Isomaltol | CAS 3420-59-5 (5885) |
|--------|----|-----------|----------------------|

1-(3-Hydroxy-2-furanyl)ethanone;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

\*\*\*\*\*

C6H608S2                      H4L              Tiron                      CAS 149-45-1    (104)

4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)<sub>2</sub>.C<sub>6</sub>H<sub>2</sub>(SO<sub>3</sub>H)<sub>2</sub>

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      sp   NaClO4   25°C   0.50M   U   T      1984YIa (44444) 181  
K(Ga+H2L=GaL+2H)=-1.182

Ga+++ g1 KNO3 25°C 0.10M U K1=19.24 B2=34.90 1980Lmb (44445) 182  
K3=10.70

Ga+++ g1 NaCl04 25°C 0.10M U K1=19.26 1972GKc (44446) 183

Ga+++ gl oth/un 25°C 0.20M U K1=18.4 B2=33.90 1968ASa (44447) 184

Ga+++ sp oth/un 23°C 0.20M U TIH K1=4.51 1965DAa (44448) 185

$K_1 = 5.24 (I=0), 4.97 (I=0.02), 4.80 (I=0.05), 4.65 (I=0.1)$ . At  $I=0.1$  M:  $K_1 = 4.63 (17C)$

4.72(40 °C); at 25 °C:  $\Delta H(K1) = -1.6 \text{ kJ mol}^{-1}$ ,  $\Delta S = 88 \text{ J K}^{-1} \text{ mol}^{-1}$

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C6H7N02                      HL                      CAS 19365-01-6    (6771)

1-Methyl-3-hydroxy-2-pyridinone;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

\*\*\*\*\*

C6H7N02                      HL                      CAS 17184-19-9    (5888)

3-Hydroxy-2-methylpyridin-4(1H)-one;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |      |              |                      |          |                 |     |
|-------|----|------|--------------|----------------------|----------|-----------------|-----|
| Ga+++ | g1 | NaCl | 25°C 0.15M M | K1=18.19<br>B3=37.96 | B2=29.51 | 1990CLa (45050) | 187 |
|-------|----|------|--------------|----------------------|----------|-----------------|-----|

\*\*\*\*\*

|        |   |                |                |       |
|--------|---|----------------|----------------|-------|
| C6H8N2 | L | 2-Picolylamine | CAS 29722-36-9 | (502) |
|--------|---|----------------|----------------|-------|

2-(Aminomethyl)pyridine;  $C_5H_4N.CH_2NH_2$

| Metal   | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg  | K values  | Reference       | ExptNo |
|---|-----|--------|------|-------------|-----|-------|-----|---|-----------------|--------|
| Ga+++   | gl  | NaNO3  | 25°C | 0.10M       | U   |       |     | K1=8.40<br>B2=15.98<br>K3=4.86                      | 1991DMb (45355) | 188    |
| *****   |     |        |      |             |     |       |     |   |                 |        |
| C6H8O7  |     | H3L    |      | Citric acid |     |       | CAS | 77-92-9 (95)  |                 |        |
| 2-Hydroxypropane-1,2,3-tricarboxylic acid; HOOCCH2.CH(OH)(COOH).CH2COOH |     |        |      |             |     |       |     |   |                 |        |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Metal   | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg  | K values  | Reference       | ExptNo |
| Ga+++   | gl  | NaClO4 | 20°C | 0.10M       | U   |       |     | B(GaH-1L)=6.07<br>K(Ga+H-1L)=22.07                  | 1985SAa (46114) | 189    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | gl  | KNO3   | 25°C | 0.10M       | C   |       |     | K1=10.02<br>K(GaL(OH)+H)=2.9                        | 1976HMd (46115) | 190    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | EMF | NaClO4 | 25°C | 1.0M        | C   |       |     | K1=7.96<br>K(Ga+OH+L)=9.21                          | 1975KBc (46116) | 191    |
| *****   |     |        |      |             |     |       |     |   |                 |        |
| C6H9NO6   |     | H3L    |      | NTA         |     |       | CAS | 139-13-9 (191)                                      |                 |        |
| Nitrilotriethanoic acid; N(CH2.COOH)3                                   |     |        |      |             |     |       |     |   |                 |        |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Metal   | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg  | K values  | Reference       | ExptNo |
| Ga+++   | gl  | KNO3   | 25°C | 0.10M       | C   |       |     | K1=16.20<br>K(GaL(OH)+H)=4.27<br>K(GaL(OH)2+H)=7.64 | 1976HMd (46825) | 192    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | sp  | oth/un | 20°C | ?           | U   |       |     | K1=17.7   | 1969CAd (46826) | 193    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | vlt | KNO3   | 22°C | 0.10M       | U   | T     |     | K1=13.95  | 1968ZKb (46827) | 194    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | EMF | NaClO4 | 20°C | 0.10M       | U   | T     |     | K1=13.6   | 1967BAc (46828) | 195    |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Ga+++   | dis | NaClO4 | 20°C | 0.10M       | U   |       |     | B2=25.81  | 1963STc (46829) | 196    |
| *****   |     |        |      |             |     |       |     |   |                 |        |
| C6H11NO5  |     | H2L    |      | HIMDA       |     |       | CAS | 93-62-9 (192)                                       |                 |        |
| N-(2-Hydroxyethyl)iminodiethanoic acid; HO.CH2.CH2.N(CH2.COOH)2         |     |        |      |             |     |       |     |   |                 |        |
| -----   |     |        |      |             |     |       |     |   |                 |        |
| Metal   | Mtd | Medium | Temp | Conc        | Cal | Flags | Lg  | K values  | Reference       | ExptNo |
| Ga+++   | gl  | KNO3   | 25°C | 0.10M       | C   |       |     | K1=11.33<br>K(GaL(OH)+H)=3.25<br>K(GaL(OH)2+H)=5.48 | 1976HMd (48733) | 197    |
| *****   |     |        |      |             |     |       |     |   |                 |        |
| C6H12N2O4   |     | H2L    |      | EDDA        |     |       | CAS | 5657-17-0 (119)                                     |                 |        |
| 1,2-Diaminoethane-N,N'-diethanoic acid; HOOC.CH2.NH.CH2.CH2.NH.CH2.COOH |     |        |      |             |     |       |     |   |                 |        |

| Metal  | Mtd | Medium | Temp | Conc          | Cal | Flags | Lg K values  | Reference       | ExptNo |
|--|-----|--------|------|---------------|-----|-------|--|-----------------|--------|
| Ga+++  | gl  | KNO3   | 25°C | 0.10M         | C   |       | K1=18.15<br>K(GaL(OH)+H)=4.70<br>K(GaL(OH)2+H)=7.6     | 1976Hmd (49240) | 198    |
| *****  |     |        |      |               |     |       |  |                 |        |
| C6H12N2O4  |     | H2L    |      | N,N-EDDA      |     |       | CAS 5835-29-0  | (2333)          |        |
| 1,2-Diaminoethane-N,N-diethanoic acid; H2N.CH2.CH2.N(CH2.COOH)2          |     |        |      |               |     |       |  |                 |        |
| -----  |     |        |      |               |     |       |  |                 |        |
| Ga+++  | gl  | KNO3   | 25°C | 0.10M         | C   |       | K1=16.75<br>K(GaL(OH)+H)=3.96<br>K(GaL(OH)2+H)=7.6     | 1976Hmd (49302) | 199    |
| *****  |     |        |      |               |     |       |  |                 |        |
| C6H12O7  |     | HL     |      | Gluconic acid |     |       | CAS 526-95-4   | (904)           |        |
| D-Gluconic acid, 2,3,4,5,6-Pentahydroxyhexanoic acid; HO.CH2(CHOH)4.COOH |     |        |      |               |     |       |  |                 |        |
| -----  |     |        |      |               |     |       |  |                 |        |
| Ga+++  | gl  | NaNO3  | 25°C | 0.10M         | C   |       | B(GaH-2L)=-2.83<br>B(GaH-3L)=-8.94<br>B(GaH-4L)=-16.45 | 1995EOa (49718) | 200    |
| *****  |     |        |      |               |     |       |  |                 |        |
| C6H13NO2   |     | HL     |      | Isoleucine    |     |       | CAS 73-32-5  | (424)           |        |
| 2-Amino-3-methylpentanoic acid; CH3.CH2.CH(CH3).CH(NH2).COOH             |     |        |      |               |     |       |  |                 |        |
| -----  |     |        |      |               |     |       |  |                 |        |
| Ga+++  | gl  | NaClO4 | 25°C | 3.0M          | U   |       | K1=9.60<br>K(Ga+HL)=2.04                               | 1975BHb (49902) | 201    |
| *****  |     |        |      |               |     |       |  |                 |        |
| C6H13NO4   |     | HL     |      | Bicine        |     |       | CAS 150-25-4   | (2124)          |        |
| N,N-Bis(2-hydroxyethyl)glycine; (HO.CH2.CH2)2N.CH2.COOH                  |     |        |      |               |     |       |  |                 |        |
| -----  |     |        |      |               |     |       |  |                 |        |
| Ga+++  | gl  | NaNO3  | 25°C | 0.10M         | U   |       | B2=13.75<br>B(GaH-2L)=22.52<br>B(GaH-4L2)=23.4         | 1991DMb (50364) | 202    |
| *****  |     |        |      |               |     |       |  |                 |        |
| C6H15N3O2  |     | HL     |      | DTMA          |     |       | CAS 55682-20-7   | (2334)          |        |
| N,N-Bis(2-aminoethyl)glycine; (H2N.CH2.CH2)2N.CH2.COOH                   |     |        |      |               |     |       |  |                 |        |
| -----  |     |        |      |               |     |       |  |                 |        |
| Ga+++  | gl  | KNO3   | 25°C | 0.10M         | C   |       | K(GaLOH+H)=2.6<br>K(GaHL+H)=4.51                       | 1976Hmd (51438) | 203    |



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C6H15N3O3 L (6613)  
1,3,5-Triamino-1,3,5-trideoxy-cis-inositol,5-Amino-5-deoxy-streptamine;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=16.5 B2=25.7<br>B(GaHL)=19.4<br>*K(GaL2)=-7.4<br>*K(GaH-1L2)=-8.7<br>*K(GaH-2L2)=-9.5 | 1993HGa (51451) | 204    |

\*K(GaH-3L2)=-9.5, \*K(GaH-4L2)=-11.6

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C6H20N2O12P4 H8L EDTPA CAS 1429-50-1 (434)  
Ethane-1,2-bis(iminobis(methylenephosphonic acid)); ((H2O3PCH2)2NCH2.)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                        | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|------------------------------------|-----------------|--------|
| Ga+++ | sp  | NaCl04 | 20°C | 1.00M | U   |       | K(Ga+H5L)=10.78<br>K(Ga+H3L)=15.84 | 1985KVa (52334) | 205    |

|       |     |        |      |       |   |  |                |                 |     |
|-------|-----|--------|------|-------|---|--|----------------|-----------------|-----|
| Ga+++ | dis | NaCl04 | 20°C | 1.00M | U |  | K(Ga+H5L)=11.4 | 1983KDd (52335) | 206 |
|-------|-----|--------|------|-------|---|--|----------------|-----------------|-----|

|       |    |      |      |       |   |  |   |                 |     |
|-------|----|------|------|-------|---|--|---|-----------------|-----|
| Ga+++ | gl | KNO3 | 25°C | 0.10M | U |  | K1=31.83<br>K(GaL+H)=6.65<br>K(GaHL+H)=5.10<br>K(GaH2L+H)=3.29<br>K(GaH3L+H)=2.46 | 1980MMd (52336) | 207 |
|-------|----|------|------|-------|---|--|---|-----------------|-----|

\*K(GaL)=-10.06.

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C7H4N2O7 H2L CAS 609-99-4 (400)  
3,5-Dinitrosalicylic acid; (O2N)2.C6H2(OH).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal   | Flags | Lg K values      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-------|-------|------------------|-----------------|--------|
| Ga+++ | vlt | NaCl04 | 25°C | 0.20M | C T H |       | K1=7.24 B2=14.12 | 1984MAb (52479) | 208    |

Also data for 35 and 45 C. DH and DS values reported.

|       |    |        |      |       |   |  |                     |                 |     |
|-------|----|--------|------|-------|---|--|---------------------|-----------------|-----|
| Ga+++ | sp | NaCl04 | 25°C | 0.20M | C |  | K(Ga+HL=GaL+H)=1.41 | 1982CSb (52480) | 209 |
|-------|----|--------|------|-------|---|--|---------------------|-----------------|-----|

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C7H5NO5 H2L Nitrosalicylic CAS 96-97-9 (148)  
2-Hydroxy-5-nitrobenzoic acid; HO.C6H3(NO2).COOH

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values         | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------|-----------------|--------|
| Ga+++ | sp  | NaCl04 | 25°C | 0.20M | C   |       | K(Ga+HL=GaL+H)=1.40 | 1982CSb (53049) | 210    |



2,4-Dihydroxybenzoic acid, b-Resorcylic acid; C<sub>6</sub>H<sub>3</sub>(OH)<sub>2</sub>.COOH

| Metal  | Mtd | Medium             | Temp | Conc           | Cal | Flags | Lg | K values   | Reference       | ExptNo |
|--|-----|--------------------|------|----------------|-----|-------|----|--|-----------------|--------|
| Ga+++  | gl  | NaClO <sub>4</sub> | 25°C | 0.20M          | U T |       |    | K <sub>1</sub> =9.59 B <sub>2</sub> =17.89<br>K <sub>3</sub> =7.31 | 1981AMa (54528) | 219    |
| Temp range 25-45. K <sub>1</sub> at 45 C = 9.14; K <sub>2</sub> at 45 C = 8.18   |     |                    |      |                |     |       |    |  |                 |        |
| *****  |     |                    |      |                |     |       |    |  |                 |        |
| C <sub>7</sub> H <sub>6</sub> O <sub>4</sub>                                     |     | H <sub>3</sub> L   |      | Protocatechuic |     |       |    | CAS 99-50-3  | (875)           |        |
| 3,4-Dihydroxybenzoic acid; C <sub>6</sub> H <sub>3</sub> (OH) <sub>2</sub> .COOH |     |                    |      |                |     |       |    |  |                 |        |

| Metal   | Mtd | Medium             | Temp | Conc        | Cal | Flags | Lg | K values  | Reference       | ExptNo |
|---|-----|--------------------|------|-------------|-----|-------|----|---|-----------------|--------|
| Ga+++   | gl  | NaClO <sub>4</sub> | 25°C | 0.20M       | U T |       |    | K <sub>1</sub> =10.40 B <sub>2</sub> =17.96<br>K <sub>3</sub> =6.45 | 1981AMa (54675) | 220    |
| Temp range 25-45. K <sub>1</sub> at 45 C =10.79; K <sub>2</sub> at 45 C = 7.76      |     |                    |      |             |     |       |    |   |                 |        |
| *****   |     |                    |      |             |     |       |    |   |                 |        |
| C <sub>7</sub> H <sub>6</sub> O <sub>5</sub>  |     | H <sub>4</sub> L   |      | Gallic acid |     |       |    | CAS 149-91-7  | (446)           |        |
| 3,4,5-Trihydroxybenzoic acid; C <sub>6</sub> H <sub>2</sub> (OH) <sub>3</sub> .COOH |     |                    |      |             |     |       |    |   |                 |        |

| Metal  | Mtd | Medium             | Temp | Conc  | Cal | Flags | Lg | K values  | Reference       | ExptNo |
|--|-----|--------------------|------|-------|-----|-------|----|---|-----------------|--------|
| Ga+++  | gl  | NaClO <sub>4</sub> | 25°C | 0.20M | U T |       |    | K <sub>1</sub> =18.43 B <sub>2</sub> =30.17<br>K <sub>3</sub> =7.59 | 1981AMa (54752) | 221    |
| Temp range 25-45. K <sub>1</sub> at 45 C =19.66; K <sub>2</sub> at 45 C =12.36                             |     |                    |      |       |     |       |    |   |                 |        |
| *****  |     |                    |      |       |     |       |    |   |                 |        |
| C <sub>7</sub> H <sub>6</sub> O <sub>6</sub> S   |     | H <sub>3</sub> L   |      |       |     |       |    | CAS 5965-83-3   | (399)           |        |
| 5-Sulfosalicylic acid, 2-Hydroxy-5-sulfobenzoic; H <sub>3</sub> OS.C <sub>6</sub> H <sub>3</sub> (OH).COOH |     |                    |      |       |     |       |    |   |                 |        |

| Metal  | Mtd | Medium             | Temp | Conc        | Cal  | Flags | Lg | K values                                    | Reference       | ExptNo |
|--|-----|--------------------|------|-------------|------|-------|----|---|-----------------|--------|
| Ga+++  | ix  | NaCl               | 20°C | 1.0M        | C    |       |    | K <sub>1</sub> =11.73<br>K(Ga+HL)=2.28      | 1989DOa (55004) | 222    |
| Ga+++  | gl  | NaClO <sub>4</sub> | 20°C | 0.10M       | U    |       |    | K <sub>1</sub> =12.70                       | 1985SAa (55005) | 223    |
| Ga+++  | gl  | KNO <sub>3</sub>   | 25°C | 0.10M       | U    |       |    | K <sub>1</sub> =12.50 B <sub>2</sub> =22.50 | 1980LMb (55006) | 224    |
| Ga+++  | gl  | NaNO <sub>3</sub>  | 25°C | 0.20M       | U    |       |    | K <sub>1</sub> =12.55 B <sub>2</sub> =22.70 | 1968ASa (55007) | 225    |
| Ga+++  | sp  | NaClO <sub>4</sub> | 29°C | 0.20M       | U IH |       |    | K(Ga+HL=GaL+H)=0.98                         | 1963NAa (55008) | 226    |
| K=1.61(I=0.02),1.48(I=0.05),1.20(I=0.10). Recalculated values. In 0.05 M NaClO <sub>4</sub> : K=1.32(20 C),1.39(29 C),1.52(40 C). DH=17.8 kJ mol <sup>-1</sup> |     |                    |      |             |      |       |    |   |                 |        |
| *****  |     |                    |      |             |      |       |    |   |                 |        |
| C <sub>7</sub> H <sub>7</sub> N <sub>2</sub> O <sub>2</sub>  |     | HL                 |      | Anthranilic |      |       |    | CAS 118-92-3                                | (1589)          |        |
| 2-Aminobenzoic acid, Anthranilic acid; H <sub>2</sub> N.C <sub>6</sub> H <sub>4</sub> .COOH  |     |                    |      |             |      |       |    |   |                 |        |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ vlt NaClO4 25°C 0.20M C T K1=4.03 1984MAb (55225) 227  
Also data for 35 and 45 C.

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C7H7NO2 HL CAS 495-18-1 (184)

Benzohydroxamic acid; C6H5.CO.NH.OH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values                   | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 3.0M | U   |       | K1=9.2<br>B2=18.00<br>B3=25.3 | 1977BHa (55501) | 228    |

Additional method: spectrophotometry.

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C7H7NS L Thiobenzamide CAS 2227-79-4 (1660)

Thiobenzamide; C6H5.CS.NH2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values     | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|-----------------|-----------------|--------|
| Ga+++ | sp  | non-aq | 25°C | 100% | U   |       | K(GaCl3+L)=2.32 | 1977SWa (55704) | 229    |

Medium: Et2O

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C7H8N2O2 L CAS 99-52-5 (470)

2-Methyl-4-nitro-aminobenzene; CH3.C6H3(NO2).NH2

| Metal | Mtd | Medium | Temp | Conc | Cal   | Flags | Lg K values     | Reference       | ExptNo |
|-------|-----|--------|------|------|-------|-------|-----------------|-----------------|--------|
| Ga+++ | sp  | diox/w | 25°C | 100% | U T H |       | K(GaCl3+L)=1.27 | 1976BSa (55881) | 230    |

At 10 - 50 C. DH = -15.9 kJ mol<sup>-1</sup>; DS = -28.8 kJ mol<sup>-1</sup>.

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C7H8N2O2 L CAS 119-32-4 (467)

3-Nitro-4-methylaminobenzene; CH3.C6H3(NO2).NH2

| Metal | Mtd | Medium | Temp | Conc | Cal   | Flags | Lg K values     | Reference       | ExptNo |
|-------|-----|--------|------|------|-------|-------|-----------------|-----------------|--------|
| Ga+++ | sp  | diox/w | 25°C | 100% | U T H |       | K(GaCl3+L)=2.45 | 1976BSa (55904) | 231    |

At 10 -50 C. DH = -20.9 kJ mol<sup>-1</sup>; DS = -23.4 J K<sup>-1</sup> mol<sup>-1</sup>.

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C7H9NO2 HL CAS 30652-11-0 (2458)

3-Hydroxy-1,2-dimethylpyridin-4(1H)-one; (OH)(CH3)(O:)C5H2N.CH3

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----------------------------------|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=13.17<br>B2=25.43<br>B3=35.76 | 2004SGc (56435) | 232    |
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=13.17<br>B2=25.43<br>K3=10.33 | 1994MRa (56436) | 233    |

Ga+++ gl KCl 25°C 0.10M C K1=13.17 B2=25.43 1992Cmb (56437) 234  
K3=10.33

Ga+++ gl NaCl 25°C 0.15M M K1=17.07 B2=29.26 1990CLa (56438) 235  
B3=38.42

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C8H5O2F3S HL TTA CAS 326-91-0 (165)  
4,4,4-Trifluoro-1-(2-thienyl)butane-1,3-dione; F3C.CO.CH2.CO.C4H3S

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ dis non-aq 25°C 100% C 1999YSa (58623) 236  
K(Ga+3HL=GaL3(org)+3H)=0.12

Medium: toluene. Method: distribution between 0.10 M NaClO4 and toluene.

K: Ga(aq)+3HL(org)=GaL3(org)+3H(aq)

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C8H6O4 H2L Phthalic acid CAS 88-99-3 (113)  
Benzene-1,2-dicarboxylic acid; C6H4(COOH)2

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ EMF KNO3 22°C 0.10M U K1=5.15 1968ZKb (58970) 237

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C8H8O3 HL Mandelic Acid CAS 611-72-3 (80)  
2-Phenyl-2-hydroxyethanoic acid; C6H5.CH(OH).COOH

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ vlt NaClO4 25°C 0.20M C T K1=3.49 B2= 6.69 1984MAb (59832) 238  
Also data for 35 and 45 C.

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C8H9NO2 L CAS 1849-49-6 (5907)  
5'-Deoxypyridoxal

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ gl KCl 25°C 1.00M C K1=8.54 1989MSb (60247) 239

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C8H9NO3 HL Pyridoxal CAS 65-22-5 (110)  
3-Hydroxy-5-(hydroxymethyl)-2-methyl-4-pyridinecarboxaldehyde;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl KNO3 25°C 0.10M C K1=2.67 1981TMe (60427) 240

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C8H10N06P H3L Codecarboxylase CAS 41468-25-1 (2555)  
Pyridoxal-5-phosphoric acid;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++      gl   KCl      25°C 1.00M C      M      K1=14.61      1985SMd (60703) 241  
K(GaL+H)=3.43

ternary complexes with 2-amino-3-phosphonopropionic acid

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C8H11NO2      HL      CAS 30652-12-1 (5889)

3-Hydroxy-2-methyl-1-ethylpyridin-4-one;

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      gl   NaCl      25°C 0.15M M      K1=17.24      B2=29.31      1990CLa (61092) 242  
B3=38.19

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C8H16N2O4S2      H4L      (6947)

2,7-Dicarboxy-3,6-diaza-1,8-octanedithiol;

HS.CH2.CH(COOH)NH.CH2CH2.NH.CH(COOH)CH2.SH

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      gl   KCl      25°C 0.10M C      K1=31.5      1996LMa (62548) 243  
B(GaHL)=35.89  
B(Ga(OH)L)=22.12  
B(Ga(OH)2L)=11.61

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C8H18N2O10P2      H6L      EDDADPO      CAS 2310-83-0 (2436)

1,2-Diaminoethane-N,N'-diethanoic-N,N'-dimethylphosphonic acid;

(-CH2.N(CH2.COOH)(CH2.PO3H2))2

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
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Ga+++      gl   KNO3      25°C 0.10M U      K1=26.82      1980MMd (62901) 244  
K(GaL+H)=5.10  
K(GaHL+H)=2.24  
\*K(GaL)=-8.42

\*\*\*\*\*

C8H24N2O12P4S      H8L      CAS 33424-58-7 (2648)

1,7-Diaza-4-thiaheptane-1,1,7,7-tetra(methylphosphonic acid);

S(CH2.CH2.N(CH2.PO3H2)2)2

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      dis   NaClO4      20°C 1.00M U      1983KDd (63485) 245  
K(Ga+H5L)=10.3

\*\*\*\*\*

C8H24N2O13P4      H8L      CAS 25007-19-4 (2647)

1,7-Diaza-4-oxaheptane-1,1,7,7-tetra(methylphosphonic acid);

O(CH2.CH2.N(CH2.PO3H2)2)2

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      dis   NaClO4      20°C 1.00M U      1983KDd (63493) 246

K(Ga+H5L)=10.3

\*\*\*\*\*

C9H6NOF HL CAS 387-97-3 (3283)  
5-Fluoro-8-hydroxyquinoline;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp NaCl04 25°C 0.10M C K1=12.35 1998JHa (63674) 247  
By 19F nmr in 20% v/v D2O/H2O, 0.10 M NaCl04, K1=12.6, B2=24.1,  
B3=34.3

\*\*\*\*\*

C9H6NO4BrS H2L CAS 3062-37-1 (3889)  
7-Bromo-8-hydroxyquinoline-5-sulfonic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ oth oth/un 20°C 0.20M U K1=13.6 1972ABb (63696) 248  
Acetate buffer. pH=4

\*\*\*\*\*

C9H6NO4ClS H2L CAS 3062-36-0 (3888)  
7-Chloro-8-hydroxyquinoline-5-sulfonic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ oth oth/un 20°C 0.20M U K1=13.5 1972ABb (63715) 249  
Acetate buffer. pH= 4

\*\*\*\*\*

C9H6NO4IS H2L Ferron CAS 547-91-1 (275)  
7-Iodo-8-hydroxyquinoline-5-sulfonic acid; (HO)(HO3S)C9H4NI

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl KNO3 25°C 0.10M U K1=14.7 B2=23.9 1974M0a (63800) 250  
B3=29.6  
B(Ga(OH)2L)=32.3  
B(Ga(OH)L2)=31.0  
K(Ga+HL)=11.3

-----  
Ga+++ sp oth/un ? dil U K1=12.6 1971BRf (63801) 251

\*\*\*\*\*

C9H7NO HL Oxine CAS 148-24-3 (504)  
8-Hydroxyquinoline (8-quinolinol);

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaCl04 20°C 0.10M U K1=12.31 1985SAa (64270) 252

Ga+++ gl diox/w 25°C 50% U K1=15.67 B2=29.09 1978THc (64271) 253  
B3=41.6

-----

Ga+++ sp alc/w ? 20% U 1971BRf (64272) 254  
B3=32.97

Medium: 20% EtOH

-----  
Ga+++ dis NaCl04 20°C 0.10M U K1=14.51 B2=28.01 1965SAf (64273) 255  
K3=12.49  
-----

Ga+++ oth none ? 0.0 U 1957PKa (64274) 256  
Kso=-32.06

\*\*\*\*\*  
C9H7N03S2 H2L CAS 58447-10-2 (4675)  
8-Mercaptoquinoline-5-sulfonic acid;  
-----

| Metal  | Mtd | Medium    | Temp | Conc | Cal | Flags | Lg K values       | Reference       | ExptNo |
|--|-----|-----------|------|------|-----|-------|-------------------|-----------------|--------|
| Ga+++  | sp  | oth/un    | ?    | ?    | U   |       | K1=10.0 B2=19.50  | 1968ABa (64424) | 257    |
| *****  |     |           |      |      |     |       |                   |                 |        |
| C9H7N04S                                     | H2L | Sulfoxine |      |      |     |       | CAS 84-88-8 (448) |                 |        |
| 8-Hydroxyquinoline-5-sulfonic acid;<br>----- |     |           |      |      |     |       |                   |                 |        |

| Metal            | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values       | Reference       | ExptNo |
|------------------|-----|--------|------|-------|-----|-------|-------------------|-----------------|--------|
| Ga+++            | gl  | KNO3   | 25°C | 0.10M | U   |       | K1=11.97 B2=23.44 | 1980LMb (64544) | 258    |
| K3=9.95<br>----- |     |        |      |       |     |       |                   |                 |        |

Ga+++ sp oth/un ? ? U K1=13.3 B2=24.50 1973BIb (64545) 259  
\*\*\*\*\*  
C9H7N3O2S H2L TAR CAS 2246-46-0 (707)  
4-(2'-Thiazolylazo)-resorcinol; C3H2NS.N:N.C6H3(OH)2  
-----

| Metal                 | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-----------------------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++                 | sp  | NaCl04 | ?    | 0.10M | U   |       | K1=12.8     | 1969HSd (64705) | 260    |
| K(Ga+HL)=9.1<br>----- |     |        |      |       |     |       |             |                 |        |

Ga+++ sp alc/w 25°C 50% U 1967NPb (64706) 261  
K(Ga+HL)=12.0

Medium: 50% MeOH, 0.1 M NaCl04

\*\*\*\*\*  
C9H8N2O3S H2L CAS 148292-08-4 (7219)  
Nordesferri-ferrithiocin; (HO)C5NH3.C3NSH3(COOH)  
-----

| Metal   | Mtd | Medium        | Temp | Conc  | Cal | Flags | Lg K values     | Reference       | ExptNo |
|---|-----|---------------|------|-------|-----|-------|-----------------|-----------------|--------|
| Ga+++   | sp  | KCl           | 25°C | 0.10M | C   |       | B2=27.8         | 1996LHa (64816) | 262    |
| *****   |     |               |      |       |     |       |                 |                 |        |
| C9H11NO2  | HL  | Phenylalanine |      |       |     |       | CAS 63-91-2 (2) |                 |        |
| 2-Amino-3-phenylpropanoic acid; H2N.CH(CH2.C6H5)COOH<br>----- |     |               |      |       |     |       |                 |                 |        |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|



Ga+++      g1   KN03   35°C 0.10M U      M      1980KHb (65939) 263  
B(GaL(tripolyphosphate))=7.21

C9H11NO3                      H2L      Tyrosine                      CAS 60-18-4    (4)  
2-Amino-3-(4-hydroxyphenyl)propanoic acid; HO.C6H4.CH2.CH(NH2).COOH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      gl   KNO<sub>3</sub>    35°C 0.10M U      M                          1980KHb (66220) 264  
B(GaHL(tripolyphosphate))=7.62

Ga+++      gl   NaClO4 25°C   3.0M C      1976BHb (66221) 265  
K(Ga+HL)=8.7  
K(Ga+H2L)=2.3

C9H11N04                      HL                      CAS 95215-59-1    (8724)  
1-(2'-Carboxyethyl)-2-methyl-3-hydroxy-4-pyridinone;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |      |      |       |   |                 |          |                 |     |
|-------|----|------|------|-------|---|-----------------|----------|-----------------|-----|
| Ga+++ | g1 | KN03 | 25°C | 0.10M | C | K1=16.84        | B2=29.02 | 2002SGb (66304) | 266 |
|       |    |      |      |       |   | B3=37.77        |          |                 |     |
|       |    |      |      |       |   | B(GaHL2)=32.27  |          |                 |     |
|       |    |      |      |       |   | B(GaH2L2)=35.15 |          |                 |     |

C9H11NO6S H3L CAS 73487-23-7 (5467)  
N,N-Dimethyl-2,3-dihydroxy-5-sulfonatobenzamide; HS03.C6H2(OH)2.CONMe2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++ g1 KNO3 25°C 0.10M U K1=15.5 B2=29 1982PwA (66463) 267  
B3=30

|                                    |   |        |
|------------------------------------|---|--------|
| C9H13NO2                           | L | (7151) |
| 1,2-Diethyl-3-hydroxy-4-pyridinone |   |        |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      gl    KCl      25°C 0.10M C      K1=14.58    B2=26.21    1994MRa (66795) 268  
K3=9.84

C9H15N07P2                      H2L                      HBIDPO                      CAS 73199-04-9                      (2434)  
(2-Hydroxybenzyl)iminobis(methylenephosphonic) acid; HO.C6H4.CH2.N(CH2.PO3H2)2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |      |              |                |                     |
|-------|----|------|--------------|----------------|---------------------|
| Ga+++ | gl | KN03 | 25°C 0.10M U | K1=23.78       | 1980MMd (67474) 269 |
|       |    |      |              | K(GaL+H)=5.60  |                     |
|       |    |      |              | K(GaHL+H)=3.30 |                     |

\*K(GaL)=-6.95

\*\*\*\*\*

C9H24N3O9P3                      H6L       NOTPH                      CAS 83843-39-3 (224)  
1,4,7-Triazacyclononane-N,N',N''-tris(methylenephosphonic acid);

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            gl    KNO3    25°C 1.00M U                      K1=30.2                      1990BSd (68320) 270

\*\*\*\*\*

C9H28N3O15P5                      10L       DTPPH                      CAS 15827-60-8 (2921)  
Diethylenetriamine-N,N,N',N'',N''-penta(methylphosphonic acid);  
H2O3PCH2.N(CH2CH2.N(CH2PO3H2)2)2 H

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            sp    NaClO4 20°C 1.00M U                      1985KV a (68409) 271

K(Ga+H6L)=6.64

\*\*\*\*\*

C10H7N08S2                      H3L       Nitroso-R acid    CAS 525-05-3 (1811)  
1-Nitroso-2-hydroxynaphthalene-3,6-disulfonic acid;

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            vlt    NaClO4 25°C 0.20M C T                      K1=6.28                      1984MAb (69010) 272

Also data for 35 and 45 C.

\*\*\*\*\*

C10H8N2                      L       2,2'-Bipyridyl    CAS 366-18-7 (25)  
2,2'-Bipyridine; (C5H4N)2

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            ISE oth/un 25°C 1.0M U                      K1=4.54    B2=7.71    1972KMf (69576) 273

Medium: 1.0 M sodium acetate. Mixed complexes with acetate ion likely.

By spectrophotometry: K1=4.49, B2=7.69

\*\*\*\*\*

C10H8O5S                      H3L       DHNSA                      (877)  
2,3-Dihydroxynaphthalene-6-sulfonic acid;

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            gl    NaClO4 25°C 0.20M U T                      K1=17.67    B2=31.93    1981AMa (69846) 274

K3=9.41

Temp range 25-45. K1 at 45 C = 17.06; K2 at 45 C =13.84

\*\*\*\*\*

C10H8O8S2                      H4L       Chromotropic ac    CAS 148-25-4 (1875)  
1,8-Dihydroxynaphthalene-3,6-disulfonic acid;

-----  
Metal            Mtd Medium Temp Conc Cal Flags Lg K values                      Reference ExptNo  
-----

Ga+++            gl    KNO3    25°C 0.10M U                      K1=15.62    B2=28.12    1980LMb (69950) 275

-----  
Ga+++ gl NaNO3 25°C 0.20M U K1=17.80 B2=31.40 1968ASa (69951) 276  
\*\*\*\*\*

C10H9NO3S2 HL (7206)

6-Methyl-5-sulfo-8-mercaptoquinoline;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp oth/un 20°C 0.10M U K1=10.4 B2=20.30 1985DAb (70176) 277  
\*\*\*\*\*

C10H10N2O3S H2L CAS 76045-30-2 (7218)

Desferri-ferrithiocin,

2-(3-Hydroxypyridin-2-yl)-4-methyl-4,5-dihydrothiazole-4-carboxylic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp KCl 25°C 0.10M C B2=29.2 1996LHa (70562) 278  
\*\*\*\*\*

C10H10O2 HL Benzoylacetone CAS 93-91-4 (197)

1-Phenylbutane-1,3-dione; C6H5.CO.CH2.CO.CH3

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ vlt diox/w 25°C 5% C T H K1=9.86 B2=18.72 1984MAb (70730) 279

Medium: 5% dioxane/H2O, 0.20 M NaClO4. Also data for 35 and 45 C.

DH and DS values reported.

\*\*\*\*\*

C10H13NO4 HL CAS 137528-47-3 (8725)

1-(3'-Carboxypropyl)-2-methyl-3-hydroxy-4-pyridinone;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl KNO3 25°C 0.10M C K1=16.54 B2=28.20 2002Sgb (71757) 280

B3=36.19

B(GaHL2)=32.02

\*\*\*\*\*

C10H16N2O8 H4L EDTA CAS 60-00-4 (120)

1,2-Diaminoethane-N,N,N',N'-tetraethanoic acid, Sequestic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ EMF KNO3 25°C 0.10M C K1=22.01 1997DFa (73793) 281

K(GaL+H)=2.30

K(Ga(OH)L+H)=5.57

-----  
Ga+++ gl KNO3 25°C 0.50M C M 1989TBa (73794) 282

K(GaL+H)=1.69

\*K(GaL)=-5.55

K(GaL+F)=1.9

K(GaL+S)=10.6

|   |     |        |      |       |     |       |    |  |                 |        |
|---|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++   | gl  | KN03   | 25°C | 0.50M | C   | M     |    |  | 1986TBa (73795) | 283    |
| K(GaL+H)=1.69<br>*K(GaL)=-5.55<br>K(GaL+F)=1.9<br>K(Ga(OH)L+HS=GaLS)=10.6 |     |        |      |       |     |       |    |  |                 |        |
| Ga+++   | gl  | NaCl04 | 20°C | 0.10M | U   |       |    | K1=20.90                                     | 1985SAa (73796) | 284    |
| Ga+++   | gl  | KN03   | 35°C | 0.10M | U   |       |    | K1=20.04                                     | 1980KHb (73797) | 285    |
| Ga+++   | gl  | KN03   | 25°C | 0.10M | C   |       |    | K1=21.7<br>K(GaL+H)=1.7<br>K(GaL(OH)+H)=5.52 | 1976HMD (73798) | 286    |
| Ga+++<br>pH=2   | sp  | NaCl04 | 20°C | 0.01M | U   |       |    | K1=21.7                                      | 1969CAe (73799) | 287    |
| Ga+++   | EMF | NaCl04 | 20°C | 0.10M | U   |       |    | K1=21.1<br>K(GaL+H)=1.83<br>K(GaL+OH)=8.36   | 1967BAc (73800) | 288    |
| Ga+++   | ISE | KN03   | 20°C | 0.10M | U   |       |    | K1=20.5<br>K(GaL+H)=1.91                     | 1966MCA (73801) | 289    |
| Ga+++   | dis | NaCl04 | 20°C | 0.10M | U   |       |    | B(GaL(OH))=34.0                              | 1963STc (73802) | 290    |
| Medium: KCl04   |     |        |      |       |     |       |    |  |                 |        |
| Ga+++   | gl  | KN03   | 15°C | 0.10M | U   |       |    | K1=20.25<br>K(GaL+H)=1.41<br>K(GaLOH+H)=5.92 | 1956STa (73803) | 291    |
| Ga+++   | vlt | KN03   | 20°C | 0.10M | U   |       |    | K1=20.27                                     | 1954SGa (73804) | 292    |
| *****   |     |        |      |       |     |       |    |  |                 |        |
| C10H18N2O7 H3L HEDTA CAS 150-39-0 (392)                                   |     |        |      |       |     |       |    |  |                 |        |
| N-(Hydroxyethyl)diaminoethane-N,N',N'-triethanoic acid;                   |     |        |      |       |     |       |    |  |                 |        |
| Metal   | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                     | Reference       | ExptNo |
| Ga+++   | gl  | KN03   | 35°C | 0.10M | U   |       |    | K1=18.72                                     | 1980KHb (75395) | 293    |
| Ga+++   | gl  | KN03   | 25°C | 0.10M | C   |       |    | K1=17.2<br>K(GaL(OH)+H)=4.38                 | 1976HMD (75396) | 294    |
| Ga+++   | sp  | NaCl04 | 25°C | 0.10M | U   |       |    | K1=19.4                                      | 1973NKA (75397) | 295    |
| Ga+++   | ISE | KN03   | 20°C | 0.10M | U   |       |    | K1=16.9<br>K(GaL+H)=4.17                     | 1966MCA (75398) | 296    |
| *****   |     |        |      |       |     |       |    |  |                 |        |

C10H20N2O4S2                      H4L              EDDASS                      (6912)  
 N,N'-Bis(2-mercaptoethyl)diaminoethane-N,N'-diethanoic acid;  
 (-CH2.N(CH2.CH2.SH)CH2.COOH)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                                  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=35.6<br>K(GaL+H)=2.4<br>K(Ga(OH)L+H)=11.1 | 1996SAb (75811) | 297    |

|       |    |     |      |       |   |  |   |                 |     |
|-------|----|-----|------|-------|---|--|---|-----------------|-----|
| Ga+++ | gl | KCl | 25°C | 0.10M | C |  | K1=35.6<br>B(GaHL)=38.0<br>B(GaH-1L)=24.5 | 1995SMa (75812) | 298 |
|-------|----|-----|------|-------|---|--|---|-----------------|-----|

|       |    |     |      |       |   |  |   |                 |     |
|-------|----|-----|------|-------|---|--|---|-----------------|-----|
| Ga+++ | gl | KCl | 25°C | 0.10M | C |  | K1=35.6<br>K(GaL+H)=2.4<br>K(GaL=Ga(OH)L+H)=-11.1 | 1995SMb (75813) | 299 |
|-------|----|-----|------|-------|---|--|---|-----------------|-----|

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C10H22N2O3                      L              Cryptand 2,1              CAS 31249-95-3 (835)  
 4,7,13-Trioxa-1,10-diazacyclopentadecane (Trioxa(2,1)cryptand);

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | gl  | R4N.X  | 25°C | 0.05M | U   |       | K1=12.7     | 1999BDb (76317) | 300    |

Medium: Et4NClO4

\*\*\*\*\*

C10H24N2S2                      H2L                      (7871)  
 N,N'-Bis(2,2-dimethyl-2-mercaptoethyl)diaminoethane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|-----------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=24.7<br>K(Ga(OH)L+H)=3.09<br>K(Ga(OH)2L+H)=11.3 | 1996SAb (76597) | 301    |

\*\*\*\*\*

C11H8N6O7S2                      H4L                      CAS 35322-95-7 (909)  
 3-Hydroxy-4-(1H-tetrazol-5-ylazo)-2,7-naphthalenedisulfonic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values            | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|------------------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 0.0  | C   | I     | K(Ga+H2L=GaL+2H)=-0.75 | 1992PSb (76937) | 302    |

Derived from data for 0.008-2.42 M NaClO4 media.

\*\*\*\*\*

C11H8N6O8S2                      H5L                      CAS 74385-48-1 (897)  
 2-(1H-Tetrazol-5-ylazo)chromotropic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------------|--------|
| Ga+++ | gl  | NaClO4 | 25°C | 0.0  | C   | I     |             | 1992PSb (76950) | 303    |

$K(2Ga+H3L=Ga2(OH)L+4H)=-3.48$

$K(Ga+H3L=GaL+3H)=-6.06$

Derived from data for 0.085-2.32 M NaClO4 media.

\*\*\*\*\*

C11H8O4                      HL                      CAS 6724-42-1 (6183)  
8-Formyl-7-hydroxy-4-methyl-2H-1-benzopyran-2-one; CO.C9H3O(:O)(CH3)(OH)

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values         | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|---------------------|-----------------|--------|
| Ga+++ | gl  | alc/w  | 35°C | 70%  | U   |       | K1=7.26    B2=14.18 | 1988KRc (77200) | 304    |

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C11H9N3O2                      H2L                      PAR                      CAS 1141-59-9 (636)  
4-(2'-Pyridylazo)-1,3-dihydroxybenzene; C5H4N.N:N.C6H3(OH)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | sp  | NaCl   | 25°C | 0.15M | C   |       |             | 1999XLa (77540) | 305    |

B2eff=10.3

Medium: 0.15 M NaCl plus phosphate buffer, pH 7.2.

|       |    |        |      |       |   |   |  |                 |     |
|-------|----|--------|------|-------|---|---|--|-----------------|-----|
| Ga+++ | sp | NaClO4 | 25°C | 0.80M | U | I |  | 1985MBa (77541) | 306 |
|-------|----|--------|------|-------|---|---|--|-----------------|-----|

$B(Ga+H3L=GaHL+2H)=-0.51$

Also data for 5-35% CH3CN, Me2SO and DMF and 5-50% CH3OH.

|       |    |     |      |       |   |  |  |                 |     |
|-------|----|-----|------|-------|---|--|--|-----------------|-----|
| Ga+++ | gl | KCl | 21°C | 0.10M | U |  |  | 1978KYb (77542) | 307 |
|-------|----|-----|------|-------|---|--|--|-----------------|-----|

$K(Ga+HL)=8.34$

|       |    |        |      |       |   |  |          |                 |     |
|-------|----|--------|------|-------|---|--|----------|-----------------|-----|
| Ga+++ | sp | oth/un | 25°C | 0.10M | U |  | B2=25.96 | 1972BNb (77543) | 308 |
|-------|----|--------|------|-------|---|--|----------|-----------------|-----|

$K(GaOH+L)=18.84$

|       |    |        |      |   |   |  |  |                 |     |
|-------|----|--------|------|---|---|--|--|-----------------|-----|
| Ga+++ | sp | oth/un | 25°C | ? | U |  |  | 1966DMf (77544) | 309 |
|-------|----|--------|------|---|---|--|--|-----------------|-----|

$K(?)=10.3$

|       |    |        |      |       |   |  |         |                 |     |
|-------|----|--------|------|-------|---|--|---------|-----------------|-----|
| Ga+++ | sp | NaClO4 | 20°C | 0.20M | U |  | B2=30.3 | 1963HSc (77545) | 310 |
|-------|----|--------|------|-------|---|--|---------|-----------------|-----|

$K(Ga+HL)=14.6$

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C11H11N3O2S                      H2L                      (6578)  
4-(4'-Methyl-2'-thiazolylazo)-2-methyl-resorcinol; (OH)2(CH3)C6H2.N:N.C3HNS(CH3)

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | sp  | NaNO3  | rt   | 0.25M | U   |       | K1=13.65    | 1990JJa (77919) | 311    |

$B(GaHL)=19.08$

$B(GaH2L2)=37.03$

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C11H13NO5                      H3L                      HBIDA                      CAS 7372-13-6 (1603)  
N-(2-Hydroxybenzyl)iminodiethanoic acid; HO.C6H4.CH2.N(CH2.COOH)2

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

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$$K(\text{Ga+HI})=8.81$$
$$K(\text{Ga}+2\text{HL})=16.99$$

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$$K(\text{Ga} + \text{H}_2\text{I} = \text{GaI} + \text{H}) = 0.61$$
$$K(\text{GaL} + \text{H}_2\text{L} = \text{GaL}_2 + 2\text{H}) = 5.2(?)$$

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$$K(\text{GaOH} + 2\text{H}^+) = 17.54$$

Medium: 20% EtOH, 0.1 M

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$$K(\text{Ga+HI})=15.66$$
$$K(\text{GaOH} + 2\text{HL}) = 30.63$$

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| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values       | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------------|-----------------|--------|
| Ga+++ | sp  | oth/un | 20°C | 0.10M | U   |       |                   | 1967NVa (80732) | 323    |
|       |     |        |      |       |     |       | K(GaOH+2HL)=18.19 |                 |        |

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|   |   |                |        |
|---|---|----------------|--------|
| C12H11NO2   | L | CAS 49744-73-2 | (1602) |
| 3-Hydroxy-2-methyl-1-phenyl-4-pyridone; (O)(CH3)(OH).C5H2N-C6H5 |   |                |        |

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values     | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-----------------|-----------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.15M | C   |       | K1=17.5 B2=28.8 | 1991ZRa (80822) | 324    |
|       |     |        |      |       |     |       | B3=36.3         |                 |        |
|       |     |        |      |       |     |       | B3(eff)=30.3    |                 |        |

B3(eff) in 0.15M NaCl, pH 7.4

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|  |     |                |        |
|--|-----|----------------|--------|
| C12H18N2O5S                                      | H2L | CAS 80459-15-0 | (1595) |
| 2-Nitroso-5-(N-propyl-3-sulfopropylamino)phenol; |     |                |        |

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values      | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|------------------|-----------------|--------|
| Ga+++ | gl  | KN03   | 25°C | 0.10M | C   |       | K1=9.19 B2=17.47 | 1988YSc (81811) | 325    |

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|   |     |       |              |        |
|---|-----|-------|--------------|--------|
| C12H20N2O8S   | H4L | TEDTA | CAS 923-74-0 | (3394) |
| 2,2'-Thiobis(ethyliminodiethanoic acid); S(CH2.CH2.N(CH2.COOH)2)2 |     |       |              |        |

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values    | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----------------|-----------------|--------|
| Ga+++ | EMF | NaCl04 | 20°C | 0.10M | U   |       | K1=17.3        | 1967BAc (82457) | 326    |
|       |     |        |      |       |     |       | K(GaL+H)=3.2   |                 |        |
|       |     |        |      |       |     |       | K(GaL+OH)=7.14 |                 |        |

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|   |     |       |              |        |
|---|-----|-------|--------------|--------|
| C12H20N2O9  | H4L | EEDTA | CAS 923-73-9 | (2112) |
| Oxa-bis(ethyleneimino)diethanoic acid; ((HOOC.CH2)2N.CH2.CH2)2O |     |       |              |        |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values    | Reference       | ExptNo |
|-------|-----|--------|------|------|-----|-------|----------------|-----------------|--------|
| Ga+++ | sp  | none   | 19°C | 0.0  | U   |       | K1=22.35       | 1971CAe (82535) | 327    |
|       |     |        |      |      |     |       | K(Ga+HL)=14.55 |                 |        |

|       |     |        |      |       |   |  |                 |                 |     |
|-------|-----|--------|------|-------|---|--|-----------------|-----------------|-----|
| Ga+++ | EMF | NaCl04 | 20°C | 0.10M | U |  | K1=21.0         | 1967BAc (82536) | 328 |
|       |     |        |      |       |   |  | K(GaL+H)=1.54   |                 |     |
|       |     |        |      |       |   |  | K(GaL+2OH)=11.9 |                 |     |

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|  |     |      |        |
|--|-----|------|--------|
| C12H21N3O6   | H3L | NOTA | (5589) |
| 1,4,7-Triazacyclononane-N,N',N''-triethanoic acid; |     |      |        |

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=30.98      | 1991CMd (82734) | 329    |
|       |     |        |      |       |     |       | *K(GaL)=-9.70 |                 |        |

\*\*\*\*\*  
 C12H22O12 HL Lactobionic acid CAS 96-82-2 (2487)  
 4-O-Beta-D-Galactopyranosyl-D-gluconic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                         | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------------------------------|-----------------|--------|
| Ga+++ | gl  | NaNO3  | 25°C | 0.10M | C   |       |                                     | 1995EOa (82930) | 330    |
|       |     |        |      |       |     |       | B(GaH-3L)=-8.95<br>B(GaH-4L)=-16.40 |                 |        |

\*\*\*\*\*  
 C12H26N2O4 L Cryptand 2,2 CAS 23978-55-4 (925)  
 4,7,13,16-Tetraoxa-1,10-diazacyclooctadecane;

| Metal | Mtd | Medium           | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|------------------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | gl  | R4N.X            | 25°C | 0.05M | U   |       | K1=12.8     | 1999BDb (83840) | 331    |
|       |     | Medium: Et4NClO4 |      |       |     |       |             |                 |        |

\*\*\*\*\*  
 C12H27N3O3 L (6685)  
 1,3,5-Trideoxy-1,3,5-tris(dimethylamino)-cis-inositol;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                         | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------------------------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=16.74 B2=30.25<br>B(GaHL2)=34.57 | 1995HKb (84071) | 332    |

Other models also considered., e.g. K1=16.62, B2=30.22, B(GaH-1L)12.53

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 C12H27N3S3 HL TACN-TM (6952)  
 1,4,7-Tris(2-mercaptoethyl)-1,4,7-triazacyclononane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values             | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=34.2<br>B(GaHL)=43.8 | 1995Mwa (84099) | 333    |

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 C13H9N3O7S3 H3L CAS 2172-27-2 (5007)  
 1-(2-Thiazolylazo)-2-naphthol-3,6-disulfonic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|-----------------|--------|
| Ga+++ | sp  | NaClO4 | ?    | 0.10M | U   |       | K1=8.20     | 1972BZa (84651) | 334    |

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 C13H10N2O4 H3L CAS 18924-02-2 (4012)  
 2-Carboxy-3',4'-dihydroxyazobenzene; HOOC.C6H4.N:N.C6H3(OH)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values         | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------|-----------------|--------|
| Ga+++ | sp  | oth/un | 20°C | 0.10M | U   |       |                     | 1968OYa (84865) | 335    |
|       |     |        |      |       |     |       | K(Ga(OH)2+H2L)=7.15 |                 |        |

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C13H11NO2 HL CAS 304-88-1 (181)  
N-Phenylbenzohydroxamic acid; C6H5.CO.N(C6H5).OH

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      gl   diox/w 25°C   50%   U      B2=19.42      1972GDb (85151) 336  
B3=28.47

Medium: 50% dioxan, 0.25 M NaCl<sub>04</sub>

Ga+++      dis oth/un 20°C    1.0M U      K1=10.22    B2=20.21    1965AKb (85152) 337  
K3=9.83

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C14H8O7S                      H3L                      DASA                      CAS 83-61-4 (950)  
1,2-Dihydroxyanthraquinone-3-sulfonic acid, Alizarin Red S;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      sp   NaClO4   rt   0.10M U      1971NOc (86728) 338  
K(Ga+2H2L)=11.6

Ga+++ sp oth/un 25°C 0.10M U K(Ga+2HL)=9.57 1968BNa (86729) 339

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C14H10O7S H5L CAS 30782-99-1 (5045)  
1,2,5,10-Tetrahydroxyanthracene-3-sulfonic acid (Leucoalizarin red S)

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |        |   |         |               |                     |
|-------|----|--------|---|---------|---------------|---------------------|
| Ga+++ | sp | NaClO4 | ? | 0.10M U |               | 1971NPb (86935) 340 |
|       |    |        |   |         | K(Ga+H3L)=9.0 |                     |
|       |    |        |   |         | K(Ga+H4L)=6.2 |                     |

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C14H16N2O5S                      H2L                      CAS 390426-77-4    (8803)  
1-n-Butyl-5-sulfo-8-hydroxyquinoline-7-carboxamide;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      sp   none   25°C   0.0   C      K1=11.6   B2=22.70   2001LAa (87906) 341  
B3=32.7

Method: spectrophotometric titration.

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|  |     |      |              |       |
|--|-----|------|--------------|-------|
| C14H22N2O8   | H4L | CDTA | CAS 482-54-2 | (200) |
| trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraethanoic acid; |     |      |              |       |

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

Ga+++      EMF KNO3      25°C 0.10M C      K1=24.38      1997DFa (88659) 342  
K(GaL+H)=2.08  
K[Ga(OH)L+H]=6.8

|   |     |        |                |       |     |  |                           |                  |
|---|-----|--------|----------------|-------|-----|--|---------------------------|------------------|
| Ga+++   | gl  | KNO3   | 35°C           | 0.10M | U   | K1=21.99                                     | 1980KHb (88660)           | 343              |
| Ga+++   | gl  | KNO3   | 25°C           | 0.10M | C   | K1=22.34<br>K(GaL+H)=2.7<br>K(GaL(OH)+H)=2.7 | 1976HMD (88661)           | 344              |
| Ga+++   | EMF | NaClO4 | 20°C           | 0.10M | U   | K1=23.10<br>K(GaL+OH)=6.46                   | 1967BAC (88662)           | 345              |
| Ga+++   | oth | oth/un | ?              | 0.10M | U   | I  | K1=22.293                 | 1966GJa (88663)  |
| Method: amperometric titration. I=1.0, K1=21.753                        |     |        |                |       |     |  |                           |                  |
| Ga+++   | ISE | KNO3   | 20°C           | 0.10M | U   | K1=22.5<br>K(GaL+H)=2.43                     | 1966MCA (88664)           | 347              |
| Ga+++   | dis | NaClO4 | 20°C           | 0.10M | U   |  | 1963STc (88665)           | 348              |
| Medium: KClO4   |     |        |                |       |     |  | B(GaL(OH))=35.6           |                  |
| Ga+++   | vlt | KNO3   | 20°C           | 0.10M | U   | K1=22.91                                     | 1954SGa (88666)           | 349              |
| *****   |     |        |                |       |     |  |                           |                  |
| C14H22N2O8  |     | H4L    | trans-1,4-CDTA |       | CAS | 92681-26-0                                   | (2843)                    |                  |
| trans-1,4-Diaminocyclohexane-N,N,N',N'-tetraethanoic acid;              |     |        |                |       |     |  |                           |                  |
| Metal   | Mtd | Medium | Temp           | Conc  | Cal | Flags  | Lg K values               | Reference ExptNo |
| Ga+++   | gl  | KCl    | 25°C           | 1.00M | U   |  | K1=8.56                   | 1984MFB (88855)  |
| *****   |     |        |                |       |     |  |                           |                  |
| C14H22N4O10   |     | H4L    | DGENTA         |       | CAS | 29725-86-8                                   | (2371)                    |                  |
| N,N-Diglycyldiaminoethane-tetraethanoic acid;(-CH2.HNCOCH2N(CH2COOH)2)2 |     |        |                |       |     |  |                           |                  |
| Metal   | Mtd | Medium | Temp           | Conc  | Cal | Flags  | Lg K values               | Reference ExptNo |
| Ga+++   | gl  | KNO3   | 25°C           | 0.10M | C   |  | K1=13.26<br>K(GaL+H)=3.75 | 1976HMD (88951)  |
| *****   |     |        |                |       |     |  |                           |                  |
| C14H23N3O8  |     | H4L    | NODASA         |       | CAS | 210217-93-9                                  | (8716)                    |                  |
| 1,4,7-Triazacyclononane-1-succinic acid-4,7-diethanoic acid;            |     |        |                |       |     |  |                           |                  |
| Metal   | Mtd | Medium | Temp           | Conc  | Cal | Flags  | Lg K values               | Reference ExptNo |
| Ga+++   | gl  | KNO3   | 37°C           | 0.50M | U   |  | K1=30.9                   | 1998AMA (89009)  |
| *****   |     |        |                |       |     |  |                           |                  |
| C14H23N3O10   |     | H5L    | DTPA           |       | CAS | 67-43-6                                      | (238)                     |                  |
| Diethylenetriamine-pentaethanoic acid; HOOCH2.N(CH2.CH2.N(CH2.COOH)2)2  |     |        |                |       |     |  |                           |                  |
| Metal   | Mtd | Medium | Temp           | Conc  | Cal | Flags  | Lg K values               | Reference ExptNo |
| Ga+++   | EMF | KNO3   | 25°C           | 0.10M | C   |  | K1=25.11<br>K(GaL+H)=4.06 | 1997DFa (89248)  |

K[Ga(OH)L+H]=7.1

K(GaHL+H)=1.81

|   |     |        |      |                   |     |  |                  |                  |
|---|-----|--------|------|-------------------|-----|--|------------------|------------------|
| Ga+++   | gl  | KN03   | 35°C | 0.10M             | U   | K1=22.41                                       | 1980KHb (89249)  | 354              |
| Ga+++   | sp  | NaCl04 | 20°C | 0.1M              | U   | K1=26.19                                       | 1977KV a (89250) | 355              |
| Ga+++   | gl  | KN03   | 25°C | 0.10M             | C   | K1=23.32<br>K(GaL+H)=4.16<br>K(GaL(OH)+H)=7.51 | 1976HMD (89251)  | 356              |
| Ga+++   | sp  | NaCl04 | 25°C | 0.10M             | U   | K1=28.1  | 1973NKA (89252)  | 357              |
| Ga+++   | sp  | oth/un | 20°C | ?                 | U   | K1=26.84                                       | 1970CAB (89253)  | 358              |
| Ga+++   | EMF | NaCl04 | 20°C | 0.10M             | U   | K1=25.54<br>K(GaL+H)=4.35<br>K(GaL+OH)=6.52    | 1967BAC (89254)  | 359              |
| Ga+++   | ISE | KN03   | 20°C | 0.10M             | U   | K1=23.0<br>K(GaL+H)=3.92                       | 1966MCA (89255)  | 360              |
| *****   |     |        |      |                   |     |  |                  |                  |
| C14H24N2O10   |     | EGTA   |      | CAS 67-42-5 (349) |     |  |                  |                  |
| Ethyleneglycol-0,0'-bis(2-aminoethyl ether)-N,N,N',N'-tetraethanoic acid; H4L |     |        |      |                   |     |  |                  |                  |
| Metal   | Mtd | Medium | Temp | Conc              | Cal | Flags  | Lg K values      | Reference ExptNo |
| Ga+++   | sp  | oth/un | 19°C | dil               | U   | K1=19.02                                       | 1971CAG (89866)  | 361              |
| *****   |     |        |      |                   |     |  |                  |                  |
| C14H25N3O7  |     | H3L    |      | (5397)            |     |  |                  |                  |
| 1-Oxa-4,7,10-triazacyclododecane-4,7,10-triethanoic acid;                     |     |        |      |                   |     |  |                  |                  |
| Metal   | Mtd | Medium | Temp | Conc              | Cal | Flags  | Lg K values      | Reference ExptNo |
| Ga+++   | gl  | KCl    | 25°C | 0.10M             | C   | K1=21.3<br>K(GaL+H)=2.66<br>K(Ga(OH)L+H)=7.84  | 1993DSa (90084)  | 362              |
| *****   |     |        |      |                   |     |  |                  |                  |
| C14H26N2O7  |     | H2L    |      | (1567)            |     |  |                  |                  |
| 1,4,10-Trioxa-7,13-diazacyclopentadecane-N,N'-diethanoic acid;                |     |        |      |                   |     |  |                  |                  |
| Metal   | Mtd | Medium | Temp | Conc              | Cal | Flags  | Lg K values      | Reference ExptNo |
| Ga+++   | gl  | R4N.X  | 25°C | 0.10M             | M   | K1=13.96                                       | 1986CO b (90190) | 363              |
| *****   |     |        |      |                   |     |  |                  |                  |
| C14H28N2O4  |     | L      |      | Cryptand 2,1,1    |     | CAS 31250-06-3 (836)                           |                  |                  |
| 1,10-Diaza-4,7,13,18-tetraoxabicyclo[8,5,5]eicosane (2,1,1);                  |     |        |      |                   |     |  |                  |                  |
| Metal   | Mtd | Medium | Temp | Conc              | Cal | Flags  | Lg K values      | Reference ExptNo |

Ga+++ gl R4N.X 25°C 0.05M U K1=15.2 1999BDb (90366) 364  
Medium: Et4NC104

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C14H28N2O4S2 H4L CAS RH (7915)  
N,N'-Bis(2,2-dimethyl-2-mercaptoethyl)ethylenediamine-N,N'-diethanoic acid;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl KNO3 25°C 0.10M C K1=41.0 1996SAb (90468) 365  
K(Ga(OH)L+H)=11.4

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C14H32N2O4 L CAS 102-60-3 (2678)  
Tetra(2-hydroxypropyl)-N,N,N',N'-diaminoethane; (-CH2.N(CH2.CH(OH).CH3)2)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ gl NaNO3 25°C 0.10M U K1=7.94 1991DMb (90743) 366  
K(GdL+OH)=9.32

\*\*\*\*\*

C15H10N3OCl HL CAS 16195-35-0 (27)  
5-(4-Chlorophenylazo)-8-hydroxyquinoline; Cl.C6H4.N:N.C9H5N.OH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp oth/un 25°C 0.10M U B2=8.15 1978KIa (90947) 367

\*\*\*\*\*

C15H10N3O5ClS H3L (7520)  
7-[(2-Hydroxy-5-chlorophenyl)azo]-8-hydroxyquinoline-5-sulfonic  
acid; C6H3Cl(OH)N=NC9H4N(OH)(SO3H)

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp KNO3 25°C 0.10M M K1=33.92 1997PKb (90953) 368

Ga+++ sp KNO3 25°C 0.10M M K1=18.13 1997PKb (90954) 369

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C15H10O4 H2L (5140)  
7,8-Dihydroxy-4-Phenyl-coumarin;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Ga+++ sp oth/un ? 0.10M U 1973KSc (90990) 370

K(Ga+HL)=8.0

K(Ga(HL)+HL)=8.25

\*\*\*\*\*

C15H10O10S H5L Quercetin S F CAS 25001-18-7 (1520)  
3,5,7,3',4'-Pentahydroxy-5'-sulfoflavone; (HO)3(O)C9H2O.C6H2(SO3H)(OH)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Ga+++ sp NaClO4 20°C 0.10M U K1=6.53 1989K0a (91033) 371

Ga+++ sp NaClO4 20°C 0.10M U 1976KTb (91034) 372

B(GaH4L)=9.46

B(Ga2H2L)=26.04

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C15H11N3O HL PAN CAS 85-85-8 (572)

1-(2-Pyridylazo)-2-naphthol; C5H4N.N:N.C10H6.OH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Ga+++ vlt alc/w 25°C 50% U K1=15.14 1973TBa (91215) 373

Medium: 50% EtOH, 0.06 M (HClO4,NaClO4)

Ga+++ sp oth/un 25°C 0.10M U 1972BNb (91216) 374

K(GaOH+L)=15.17

\*\*\*\*\*

C15H11N3O HL CAS 4312-09-8 (989)

5-Phenylazo-8-hydroxyquinoline; C6H5.N:N.C9H5N.OH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Ga+++ sp oth/un 25°C 0.10M U B2=9.43 1978KIa (91267) 375

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C15H11N3O4S H2L 1-PAN-4S (7010)

2-(2-Pyridylazo)-1-naphthol-4-sulfonic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Ga+++ sp KNO3 25°C 0.10M U K1=9.40 1980VHa (91324) 376

\*\*\*\*\*

C15H11N3O5S H3L CAS 111248-75-0 (8411)

5-(2'-Hydroxy-5'-phenylazo)-8-quinolinol;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Ga+++ sp oth/un RT dil C 1985IBa (91341) 377

K1eff=4.98

B2eff=9.42

B3eff=13.57

Medium: Britton and Robinson buffer, pH 4.5

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C15H16N4OBr2 HL CAS 14337-54-3 (993)

2-(3,5-Dibromo-2-pyridylazo)-5-diethylaminophenol;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Ga+++ sp oth/un ? ? U B2=6.18 1972GDc (91941) 378

\*\*\*\*\*

C15H17N4OBr HL CAS 14357-53-2 (712)

2-(5-Bromo-2-pyridylazo)-5-diethylaminophenol; BrC5H3N.N:N.C6H3(OH)N(CH3)2

| Metal  | Mtd | Medium | Temp | Conc | Cal | Flags | Lg             | K values        | Reference | ExptNo |
|--|-----|--------|------|------|-----|-------|----------------|-----------------|-----------|--------|
| Ga+++  | sp  | oth/un | ?    | ?    | U   |       | B2=6.04        | 1972GDc (91981) | 379       |        |
| *****  |     |        |      |      |     |       |                |                 |           |        |
| C15H17N4OCl  |     | HL     |      |      |     |       | CAS 26015-51-0 | (5137)          |           |        |
| 2-(5-Chloro-2-pyridylazo)-5-diethyl-m-aminophenol; |     |        |      |      |     |       |                |                 |           |        |

| Metal                                  | Mtd | Medium | Temp | Conc | Cal | Flags | Lg             | K values        | Reference | ExptNo |
|--|-----|--------|------|------|-----|-------|----------------|-----------------|-----------|--------|
| Ga+++                                  | sp  | oth/un | ?    | ?    | U   |       | B2=5.98        | 1972GDc (91985) | 380       |        |
| *****                                  |     |        |      |      |     |       |                |                 |           |        |
| C15H18N4O                              |     | HL     |      |      |     |       | CAS 14337-52-1 | (5124)          |           |        |
| 5-Diethylamino-2-(2-pyridylazo)phenol; |     |        |      |      |     |       |                |                 |           |        |

| Metal  | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg      | K values        | Reference | ExptNo |
|--|-----|--------|------|-------|-----|-------|---------|-----------------|-----------|--------|
| Ga+++  | sp  | oth/un | ?    | 0.10M | U   |       | B2=6.40 | 1972GDc (92096) | 381       |        |
| *****  |     |        |      |       |     |       |         |                 |           |        |
| C15H20N2O7   |     | H4L    | HBET |       |     |       | (6954)  |                 |           |        |
| N-(Hydroxobenzyl)diaminoethane-N,N',N'-triethanoic acid; |     |        |      |       |     |       |         |                 |           |        |
| HO.C6H4.CH2.N(CH2COOH)CH2CH2.N(CH2COOH)2                 |     |        |      |       |     |       |         |                 |           |        |

| Metal   | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg  | K values        | Reference | ExptNo |
|---|-----|--------|------|-------|-----|-------|---|-----------------|-----------|--------|
| Ga+++   | gl  | KCl    | 25°C | 0.10M | C   |       | K1=24.67<br>B(GaHL)=29.89<br>B(GaH2L)=32.06 | 1995MMa (92168) | 382       |        |
| *****   |     |        |      |       |     |       |   |                 |           |        |
| C16H11N2O2Cl  |     | H2L    |      |       |     |       | CAS 3566-94-7                               | (3474)          |           |        |
| 1-(5-Chloro-2-hydroxyphenylazo)-2-hydroxynaphthalene; |     |        |      |       |     |       |   |                 |           |        |

| Metal                                 | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values        | Reference | ExptNo |
|---------------------------------------|-----|--------|------|------|-----|-------|----|-----------------|-----------|--------|
| Ga+++                                 | sp  | alc/w  | ?    | 40%  | U   |       |    | 1967NNb (92761) | 383       |        |
| K(GaOH+HL)=21.30<br>K(GaOH+2HL)=37.10 |     |        |      |      |     |       |    |                 |           |        |

Medium: 40% EtOH, 0.1 M

|  |  |     |  |  |  |  |               |        |  |  |
|--|--|-----|--|--|--|--|---------------|--------|--|--|
| *****  |  |     |  |  |  |  |               |        |  |  |
| C16H11N5O12S2  |  | H4L |  |  |  |  | CAS 3769-61-7 | (5175) |  |  |
| 2-(2-Hydroxy-3,5-dinitrophenylazo)-8-amino-1-naphthol-3,6-disulfonic acid; |  |     |  |  |  |  |               |        |  |  |

| Metal                       | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values        | Reference | ExptNo |
|-----------------------------|-----|--------|------|-------|-----|-------|----|-----------------|-----------|--------|
| Ga+++                       | sp  | oth/un | 20°C | 0.10M | U   |       |    | 1968DYa (92904) | 384       |        |
| K(GaOH+H2L=Ga(OH)HL+H)=5.54 |     |        |      |       |     |       |    |                 |           |        |

|  |  |     |  |  |  |  |                |        |  |  |
|--|--|-----|--|--|--|--|----------------|--------|--|--|
| *****  |  |     |  |  |  |  |                |        |  |  |
| C16H12N2O6S  |  | H4L |  |  |  |  | CAS 16625-47-5 | (5178) |  |  |
| 1-(2,4-Dihydroxyphenylazo)-2-hydroxynaphthalene-4-sulfonic acid; |  |     |  |  |  |  |                |        |  |  |



| Metal  | Mtd | Medium | Temp | Conc           | Cal | Flags          | Lg K values                         | Reference       | ExptNo |
|--|-----|--------|------|----------------|-----|----------------|-------------------------------------|-----------------|--------|
| Ga+++  | sp  | oth/un | 25°C | 0.10M          | U   |                | K(Ga+HL)=16.92<br>K(GaOH+2HL)=16.90 | 1967NNa (93027) | 385    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H12N2O8S2   |     | H4L    |      | Chromotrope 2R |     | CAS 4197-07-3  | (2604)                              |                 |        |
| 2-(Benzeneazo)-chromotropic acid, Acid Red 29  |     |        |      |                |     |                |                                     |                 |        |
| Ga+++  | gl  | NaClO4 | 25°C | 0.10M          | U   |                | K1=20.20 B2=35.60                   | 1975MPa (93065) | 386    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H12N2O11S3  |     | H5L    |      |                |     | CAS 548-81-2   | (5180)                              |                 |        |
| 2-(4'-Sulfophenylazo)chromotropic acid,<br>2-(4-sulfophenylazo)-1,8-dihydroxyaphthalene-3,6-diHSO3 |     |        |      |                |     |                |                                     |                 |        |
| Ga+++  | gl  | NaClO4 | 25°C | 0.10M          | U   |                | K1=14.17 B2=26.27                   | 1975MPa (93093) | 387    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H13N2O10AsS2  |     | H5L    |      | Thorin I       |     | CAS 3688-92-4  | (2609)                              |                 |        |
| 1-((2-Arsonophenyl)azo)-2-hydroxy-3,6-naphthalylldisulfonic acid;                                  |     |        |      |                |     |                |                                     |                 |        |
| Ga+++  | sp  | oth/un | 25°C | ?              | U   |                | K(?)=9.9                            | 1968GSe (93192) | 388    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H13N2O11AsS2  |     | H6L    |      | Arsenazo I     |     | CAS 520-10-5   | (277)                               |                 |        |
| 2-(2'-Arsonophenylazo)chromotropic acid;   |     |        |      |                |     |                |                                     |                 |        |
| Ga+++  | sp  | oth/un | 25°C | 0.0            | U   |                | K(Ga+H4L=GaH2L+2H)=5.7              | 1973JMa (93254) | 389    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H28N4O8   |     | H4L    |      | DOTA           |     | CAS 60239-18-1 | (1017)                              |                 |        |
| 1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraethanoic acid;  |     |        |      |                |     |                |                                     |                 |        |
| Ga+++  | EMF | KCl    | 25°C | 0.10M          | C   |                | K1=21.33<br>K(GaL+H)=4.00           | 1991CMb (94895) | 390    |
| *****  |     |        |      |                |     |                |                                     |                 |        |
| C16H29N3O8   |     | H3L    |      |                |     |                | (6699)                              |                 |        |
| 1,7-Dioxa-4,10,13-triazacyclopentadecane-N,N',N''-triethanoic acid;                                |     |        |      |                |     |                |                                     |                 |        |



1,1,1-Tris((2-((N-methylhydroxyamino)carbonyl)ethoxy)methyl)ethane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       |    | K1=25.58<br>K(GaL+H)=2.56<br>K(GaHL+H)=0.6 | 1991MSa (96737) | 397    |

\*\*\*\*\*  
C18H20N2O6                      H4L                      CAS 10328-28-6 (3501)  
Ethylenedinitrilo-N,N'-bis(2'-hydroxyphenyl)-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|-------------------------|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       |    | K1=32.0<br>K(GaL+H)=1.3 | 1993MMa (97401) | 398    |

\*\*\*\*\*  
C18H20N2O6                      H4L                      EHPG                      CAS 10328-28-6 (429)  
N,N'-Ethylene-bis-(2-(2'-hydroxyphenyl))glycine; (H00CCH(C6H4OH)NHCH2.)2

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values   | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       |    | K1=33.89<br>K(GaL+H)=2.22<br>K1=32.40 (meso ligand)<br>K(GaL+H)=3.44 (meso ligand) | 1989BMd (97427) | 399    |

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Ga+++                      gl                      KNO3                      25°C                      0.10M                      C                      K1=31.61                      1976HMd (97428)                      400  
\*\*\*\*\*  
C18H22N4O4                      H2L                      CAS 2444-14-6 (3502)  
N,N'-Bis(2-pyridylmethyl)diaminoethane-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values  | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---|-----------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.16M | C   |       |    | K1=19.89<br>K(GaL+H)=1.90<br>K(Ga+L=GaL(OH)+H)=15.62<br>K(GaL(OH)+H)=4.27 | 1997CRa (97542) | 401    |

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C18H28N4O4                      H2L                      (7378)  
7-Methyl-3,7,11,17-tetraazabicyclo[11.3.1]heptadeca-1(17),13,15-triene-3,11-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                       | Reference       | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|-----------------|--------|
| Ga+++ | gl  | R4N.X  | 25°C | 0.10M | C   |       |    | K1=18.02<br>K(GaL+H)=3.09<br>K(Ga(OH)L+H)=3.75 | 1997CDb (97785) | 402    |

Medium: NMe4NO3

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C18H30N4O12                      H6L                      TTHA                      CAS 869-52-3 (694)

Triethylenetetraaminehexaethanoic acid;((HOOCH<sub>2</sub>)<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>N(CH<sub>2</sub>COOH)<sub>2</sub>)<sub>2</sub>

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

|       |    |       |      |       |   |  |  |                 |     |
|-------|----|-------|------|-------|---|--|--|-----------------|-----|
| Ga+++ | gl | R4N.X | 25°C | 0.10M | C |  | K1=27.75<br>K(GaHL+H)=4.8<br>K(GaH <sub>2</sub> L+H)=3.9<br>K(GaL+Ga)=9.43<br>K(Ga <sub>2</sub> L(OH)+H)=12.40 | 1998ACc (98034) | 403 |
|-------|----|-------|------|-------|---|--|--|-----------------|-----|

Medium: N(CH<sub>3</sub>)<sub>4</sub>NO<sub>3</sub>. K(Ga<sub>2</sub>L(OH)<sub>2</sub>+2H)=3.25.

|       |    |                  |      |       |   |   |   |                 |     |
|-------|----|------------------|------|-------|---|---|---|-----------------|-----|
| Ga+++ | gl | KNO <sub>3</sub> | 25°C | 0.10M | C | M | K1=27.724<br>K(GaL+H)=5.09<br>K(GaHL+H)=4.00<br>K(GaH <sub>2</sub> L+H)=2.09<br>*K(GaL)=-9.35 | 1998AKa (98035) | 404 |
|-------|----|------------------|------|-------|---|---|---|-----------------|-----|

K(GaL+Ga)=15.18, K(Ga<sub>2</sub>L+H)=1.19, \*K(Ga<sub>2</sub>L)=-3.72, \*K(Ga<sub>2</sub>H-1L)=-4.42.

K(GaL+Ca)=2.39, K(GaCaL+H)=4.1, K(GaCaHL+H)=4.6, \*K(GaCaL)=-5.20.

|       |     |                  |      |       |   |  |   |                 |     |
|-------|-----|------------------|------|-------|---|--|---|-----------------|-----|
| Ga+++ | EMF | KNO <sub>3</sub> | 25°C | 0.10M | C |  | K1=27.75<br>K(GaL+H)=4.8<br>K(GaL+Ga)=12.40<br>K(GaHL+H)=3.9<br>K[Ga <sub>2</sub> (OH)L+H]=3.25 | 1997DFa (98036) | 405 |
|-------|-----|------------------|------|-------|---|--|---|-----------------|-----|

K[Ga<sub>2</sub>(OH)<sub>2</sub>L+2H]=7.46

K[Ga(OH)L+H]=9.43

|       |    |                  |      |       |   |  |          |                 |     |
|-------|----|------------------|------|-------|---|--|----------|-----------------|-----|
| Ga+++ | gl | KNO <sub>3</sub> | 35°C | 0.10M | U |  | K1=23.60 | 1980KHb (98037) | 406 |
|-------|----|------------------|------|-------|---|--|----------|-----------------|-----|

|       |    |                  |      |       |   |  |  |                 |     |
|-------|----|------------------|------|-------|---|--|--|-----------------|-----|
| Ga+++ | gl | KNO <sub>3</sub> | 25°C | 0.10M | U |  | K1=28.21<br>K(GaL+H)=5.30<br>K(GaHL+H)=3.96<br>K(GaH <sub>2</sub> L+H)=2.56<br>*K(GaL)=-9.64 | 1980MMd (98038) | 407 |
|-------|----|------------------|------|-------|---|--|--|-----------------|-----|

|       |    |                  |      |       |   |  |  |                 |     |
|-------|----|------------------|------|-------|---|--|--|-----------------|-----|
| Ga+++ | gl | KNO <sub>3</sub> | 25°C | 0.10M | C |  | K(GaL+H)=5.6<br>K(GaHL+H)=3.62<br>K(GaH <sub>2</sub> L+H)=2.58 | 1976HMd (98039) | 408 |
|-------|----|------------------|------|-------|---|--|--|-----------------|-----|

|       |    |                  |      |       |   |  |   |                 |     |
|-------|----|------------------|------|-------|---|--|---|-----------------|-----|
| Ga+++ | gl | KNO <sub>3</sub> | 25°C | 0.10M | U |  | K1=15.1<br>K(GaL+H)=4.52<br>K(GaHL+H)=3.54<br>K(GaH <sub>2</sub> L+H)=2.29<br>B(Ga <sub>2</sub> L)=25.1 | 1969YMa (98040) | 409 |
|-------|----|------------------|------|-------|---|--|---|-----------------|-----|

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C18H32N4O8                      H4L                      TETA                      CAS 60239-22-7 (1019)

1,4,8,11-Tetraazacyclotetradecane-1,4,8,11-tetraethanoic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|



A=diphenylguanidine. Ligand: Pyrocatechol sulfophthalein

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C19H28N4O6 H3L CAS 106967-44-6 (8973)  
3,7,11-Tris(carboxymethyl)-3,7,11,17-tetraazabicyclo[11.3.1]heptadeca-1(17),13,15-triene;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |       |      |       |   |  |  |          |                 |     |
|-------|----|-------|------|-------|---|--|--|----------|-----------------|-----|
| Ga+++ | gl | R4N.X | 25°C | 0.10M | C |  |  | K1=20.10 | 1998CDa (99408) | 417 |
|-------|----|-------|------|-------|---|--|--|----------|-----------------|-----|

Medium: 0.10 M Me4NNO3.

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C20H13N3O7S H3L Eriochrome Bl T CAS 1787-61-7 (997)  
1-(1-Hydroxy-2-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |        |      |       |   |  |  |                |                 |     |
|-------|----|--------|------|-------|---|--|--|----------------|-----------------|-----|
| Ga+++ | sp | oth/un | 20°C | 0.10M | U |  |  | K(Ga+3HL)=23.0 | 1980PKa (99564) | 418 |
|-------|----|--------|------|-------|---|--|--|----------------|-----------------|-----|

Medium: Na2SO4

|       |    |        |      |       |   |  |  |                   |                 |     |
|-------|----|--------|------|-------|---|--|--|-------------------|-----------------|-----|
| Ga+++ | gl | NaClO4 | 25°C | 0.10M | U |  |  | K1=14.90 B2=28.60 | 1975MPa (99565) | 419 |
|-------|----|--------|------|-------|---|--|--|-------------------|-----------------|-----|

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C20H14N2O5S H3L Solochrome 6B CAS 3564-14-5 (3507)  
1-(1-Hydroxy-2-naphthylazo)-2-naphthol-4-sulfonic acid, Mordant Black3, Eriochrome blue-black B;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |        |      |       |   |  |  |                   |                 |     |
|-------|----|--------|------|-------|---|--|--|-------------------|-----------------|-----|
| Ga+++ | gl | NaClO4 | 25°C | 0.10M | U |  |  | K1=18.40 B2=31.20 | 1975MPa (99649) | 420 |
|-------|----|--------|------|-------|---|--|--|-------------------|-----------------|-----|

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C20H14N2O5S H3L EriochrBluBlk R CAS 2538-85-4 (3508)  
3-Hydroxy-4-(2-hydroxy-1-naphthylazo)naphthalene-1-sulfonic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |        |   |     |   |  |  |         |                 |     |
|-------|----|--------|---|-----|---|--|--|---------|-----------------|-----|
| Ga+++ | sp | oth/un | ? | 0.0 | U |  |  | B2=12.4 | 1969JMa (99689) | 421 |
|-------|----|--------|---|-----|---|--|--|---------|-----------------|-----|

|       |    |        |   |       |   |  |  |                                       |                 |     |
|-------|----|--------|---|-------|---|--|--|---------------------------------------|-----------------|-----|
| Ga+++ | sp | oth/un | ? | 0.10M | U |  |  | K(GaOH+HL)=24.75<br>K(GaOH+2HL)=42.50 | 1967NNb (99690) | 422 |
|-------|----|--------|---|-------|---|--|--|---------------------------------------|-----------------|-----|

K(GaOH+HL)=24.75  
K(GaOH+2HL)=42.50

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C20H24N2O6 H4L HBED CAS 3625-89-6 (2208)  
N,N'-Di-(2-hydroxybenzyl)-diaminoethane-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |                           |                 |     |
|-------|----|-----|------|-------|---|--|--|---------------------------|-----------------|-----|
| Ga+++ | gl | KCl | 25°C | 0.10M | U |  |  | K1=38.51<br>K(GaL+H)=2.30 | 1994MMe (99996) | 423 |
|-------|----|-----|------|-------|---|--|--|---------------------------|-----------------|-----|

|       |    |     |      |       |   |  |  |          |                 |     |
|-------|----|-----|------|-------|---|--|--|----------|-----------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | M |  |  | K1=39.57 | 1990MMa (99997) | 424 |
|-------|----|-----|------|-------|---|--|--|----------|-----------------|-----|



K(GaHL+H)=1.6

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C21H21NO3 L CAS 6393-39-1 (7647)  
Tris(2-hydroxybenzyl)amine;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values                  | Reference        | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---------------------------|------------------|--------|
| Ga+++ | gl  | alc/w  | 25°C | 70%  | C   |       |    | K1=32.32<br>K(GaL+H)=6.50 | 1998MMa (101160) | 433    |

Medium: 70% (v/v) EtOH/H2O, 0.1 M KCl.

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C21H21NS3 L CAS 215432-65-8 (7646)  
Tris(2-mercaptobenzyl)amine;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values                | Reference        | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|-------------------------|------------------|--------|
| Ga+++ | gl  | alc/w  | 25°C | 70%  | C   |       |    | K1=20.5<br>K(GaL+H)=2.0 | 1998MMa (101162) | 434    |

Medium: 70% (v/v) EtOH/H2O, 0.1 M KCl.

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C21H25N3O7 H4L (6563)  
N-(2-Hydroxybenzyl)-N'-(pyridoxyl)ethylenediamine-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                   | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | C   |       |    | K1=31.0<br>K(GaL+H)=6.88<br>K(GaHL+H)=3.63 | 1991MSb (101273) | 435    |

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C22H14O9 H5L CAS 4431-00-9 (3513)  
Aurintricarboxylic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values                                    | Reference        | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|------------------|--------|
| Ga+++ | sp  | oth/un | ?    | ?    | U   |       |    | K(Ga+H4L)=14.75<br>K(Ga+2HL+20H=GaL2)=23.18 | 1971PKc (101499) | 436    |

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C22H26N4O8 H4L (5526)  
N,N'-Dipyridoxylethylenediamine-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                    | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | M   |       |    | K1=32.31<br>K(GaL+H)=7.10<br>K(GaHL+H)=6.22 | 1990MMa (101955) | 437    |

|       |    |     |      |       |   |  |  |  |                  |     |
|-------|----|-----|------|-------|---|--|--|--|------------------|-----|
| Ga+++ | gl | KCl | 25°C | 0.10M | C |  |  | K1=32.31<br>K(GaL+H)=7.10<br>K(GaHL+H)=6.2 | 1989MSc (101956) | 438 |
|-------|----|-----|------|-------|---|--|--|--|------------------|-----|





K(GaH2L+H)=3.70

K(GaH3L+H)=2.50

\*K(GaL)=-9.77.

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C22H41N5O8 H3L CAS 189687-33-0 (7103)

Diethylenetriamine-N,N',N''-triethanoic acid-N,N''-bis(butylamide);

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                                | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|------------------|--------|
| Ga+++ | gl  | KNO3   | 25°C | 0.10M | C   |       | K1=18.18<br>K(GaL+H)=3.20<br>*K(GaL)=-4.57 | 1995GDa (102387) | 446    |

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C23H16O9Cl2S H4L Chrome azurol S CAS 1667-99-8 (711)

Chromazurol S;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values        | Reference        | ExptNo |
|-------|-----|--------|------|------|-----|-------|--------------------|------------------|--------|
| Ga+++ | sp  | oth/un | ?    | ?    | U   |       | K1=6.28            | 1969ASa (102557) | 447    |
| Ga+++ | sp  | oth/un | 25°C | ?    | U   |       | K1eff=4.5 (pH 4.0) | 1966DMc (102558) | 448    |

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C23H30N2O6 H4L CAS 132750-98-2 (6543)

N,N'-Trimethylenebis(2-(2-hydroxy-3,5-dimethylphenyl)glycine);

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values               | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---------------------------|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | C   |       | K1=32.46<br>K(GaL+H)=3.91 | 1991BMa (102756) | 449    |

For racemic ligand. For meso form: K1=33.96, K(GaL+H)=3.70

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C24H29N3O12S3 H6L (7355)

1,2,3-Tris((2-hydroxy-5-sulfobenzyl)amino)propane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|-------------|------------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.16M | C   |       | K1=31.54    | 1997COa (103015) | 450    |

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C24H31N3O8 H3L CAS 35369-55-2 (6972)

N,N''-Bis(2-hydroxybenzyl)-2,5,8-triazanonane-N,N',N''-triethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values   | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---|------------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       | K1=26.11<br>K(GaL+H)=10.41<br>K(GaHL+H)=7.99<br>K(GaH2L+H)=5.58 | 1994MMf (103057) | 451    |

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C24H32N2O6 H3L Me4-HBED (6507)

N,N'-Bis(2-hydroxy-3,5-dimethylbenzyl)ethylenediamine-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |          |                  |     |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | M |  |  | K1=34.19 | 1990MMa (103062) | 452 |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|

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|            |  |  |     |  |  |  |  |        |  |  |
|------------|--|--|-----|--|--|--|--|--------|--|--|
| C24H33N5O8 |  |  | H5L |  |  |  |  | (6747) |  |  |
|------------|--|--|-----|--|--|--|--|--------|--|--|

N,N''-Bis(3-hydroxy-6-methyl-2-pyridylmethyl)diethylenetriamine-N,N'.N''-triethanoic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |          |                  |     |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | C |  |  | K1=31.02 | 1992MSa (103203) | 453 |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|

K(GaL+H)=7.08

K(GaHL+H)=5.65

K(GaH2L+H)=4.52

K(GaH3L+H)=2.27

\*K(GaL)=-9.77

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|            |  |  |     |  |  |  |  |        |  |  |
|------------|--|--|-----|--|--|--|--|--------|--|--|
| C24H34N2O5 |  |  | H3L |  |  |  |  | (6509) |  |  |
|------------|--|--|-----|--|--|--|--|--------|--|--|

N,N'-Bis(2-hydroxy-3,5-dimethylbenzyl)-N-(2-hydroxyethyl)-diaminoethane-N'-ethanoic acid;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |          |                  |     |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | M |  |  | K1=30.50 | 1990MMa (103214) | 454 |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|

K(Ga(OH)L+H=GaL+H2O)=6.71

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|            |  |  |     |  |  |  |  |                 |        |  |
|------------|--|--|-----|--|--|--|--|-----------------|--------|--|
| C24H34N3O6 |  |  | H3L |  |  |  |  | CAS 134627-54-6 | (6564) |  |
|------------|--|--|-----|--|--|--|--|-----------------|--------|--|

N-(2-Hydroxy-3,5-dimethylbenzyl)-N'-((3-hydroxy-1,2,5-trimethyl-4-pyridinyl)methyl)EDDA;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |          |                  |     |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | C |  |  | K1=31.85 | 1991MSb (103218) | 455 |
|-------|----|-----|------|-------|---|--|--|----------|------------------|-----|

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|            |  |  |     |  |  |  |  |                 |        |  |
|------------|--|--|-----|--|--|--|--|-----------------|--------|--|
| C24H36N4O8 |  |  | H2L |  |  |  |  | CAS 134653-17-1 | (6565) |  |
|------------|--|--|-----|--|--|--|--|-----------------|--------|--|

N,N'-Bis(1,2-dimethyl-3-hydroxy-5-hydroxymethyl)-4-pyridinyl)-methyl)diaminoethaned iethanoic acid

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |         |                  |     |
|-------|----|-----|------|-------|---|--|--|---------|------------------|-----|
| Ga+++ | sp | KCl | 25°C | 0.10M | C |  |  | K1=27.3 | 1991MSb (103270) | 456 |
|-------|----|-----|------|-------|---|--|--|---------|------------------|-----|

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|            |  |  |     |  |  |  |  |                             |        |  |
|------------|--|--|-----|--|--|--|--|-----------------------------|--------|--|
| C25H48N6O8 |  |  | H3L |  |  |  |  | Desferrioxamine CAS 70-51-9 | (2488) |  |
|------------|--|--|-----|--|--|--|--|-----------------------------|--------|--|

Desferrioxamine B; NH2.((CH2)5.NOH.CO.C2H4.CO.NH)2.(CH2)5.NOH.CO.CH3

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

|       |    |     |      |       |   |  |  |  |                  |     |
|-------|----|-----|------|-------|---|--|--|--|------------------|-----|
| Ga+++ | gl | KCl | 25°C | 1.00M | C |  |  |  | 1989BHa (103815) | 457 |
|-------|----|-----|------|-------|---|--|--|--|------------------|-----|

|       |    |     |              |  |                      |
|-------|----|-----|--------------|--|----------------------|
| Ga+++ | gl | KCl | 25°C 0.10M C | K1=28.65<br>K(Ga+HL)=28.17<br>K(GaL+H)=10.31 | 1989EHa (103816) 458 |
|-------|----|-----|--------------|--|----------------------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|----------|-----------|--------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg | K | values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|----|---|--------|-----------|--------|

Ga+++ sp KN03 25°C 0.10M C K(Ga+H2L)=8.09 1990Y0a (104458) 463

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C27H36N4O12S3 H6L (7353)

Tris(((2-hydroxy-5-sulfobenzyl)amino)ethyl)amine;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|----------|------------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.16M | C   |       |    | K1=28.55 | 1997C0a (104562) | 464    |

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C27H36N6O3 H3L TACN-HP (6748)

N,N',N''-Tris(3-hydroxy-6-methyl-2-pyridylmethyl)-1,4,7-triazacyclononane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values   | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | C   |       |    | K1=45.6<br>K(GaL+H)=5.85<br>K(GaHL+H)=5.42<br>K(GaH2L+H)=4.14<br>K(Ga+H3L)=19.84 | 1992MSa (104573) | 465    |

\*K(GaL)=-10.14

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C28H30N4O8S2 H2L CAS 173102-11-9 (4197)

N,N'-Bis(2-hydroxy-5-sulfophenyl)-N,N'-bis(methylpyridyl)diaminoethane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|----------|------------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.16M | C   |       |    | K1=35.33 | 1996WCa (104736) | 466    |

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C28H31N3O18S3 H9L 3,4-LICAMS CAS 71659-79-5 (5469)

N,N',N''-Tris(2,3-dihydroxy-5-sulfonatobenzoyl)-1,5,10-triazadecane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values  | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | U   |       |    | K1=41.1<br>B(GaHL)=46.9<br>B(GaH2L)=52.6<br>B(GaH3L)=55.6 | 1991LRb (104744) | 467    |

|       |    |      |      |       |   |  |  |   |                  |     |
|-------|----|------|------|-------|---|--|--|---|------------------|-----|
| Ga+++ | gl | KNO3 | 25°C | 0.10M | U |  |  | K1=38.5<br>K(Ga+H3L=GaL+3H)=3.6<br>K(GaL+2H)=10.2 | 1982PWa (104745) | 468 |
|-------|----|------|------|-------|---|--|--|---|------------------|-----|

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C28H51N3O12 L CAS 123074-29-3 (6560)

7,19,30-Trihydroxy-1,13-dimethyl-3,11,15,23,26,34-hexaoxa-7,19,30-triazabicyclopent atricontatrien

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values               | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|------------------------|------------------|--------|
| Ga+++ | gl  | KCl    | 25°C | 0.10M | C   |       |    | K1=27.48<br>K(GaL+H)=6 | 1991MSa (104982) | 469    |

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C29H41N5O4 H2L CAS 357333-44-9 (7996)

Bis-(piperazinyl-4-(4-carboxybenzyl)ethyl)methylamine;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values                                 | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|------------------|--------|
| Ga+++ | gl  | NaCl   | 25°C | 0.15M | C   |       |    | K1=15.5<br>K(GaL+H)=4.5<br>K(GaL+OH)=6.8 | 2001BFa (105144) | 470    |

Additional method: 1H and 13C NMR spectroscopy.

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C30H27N3O15 H6L Enterobactin CAS 28384-96-5 (2259)

Enterobactin; cyclo-((OH)C6H3(OH).CO.NH.CH.CO.CH2)3

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values  | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|---|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | C   |       |    | K(GaL+H)=4.53<br>K(GaHL+H)=3.71<br>K(GaH2L+H)=2.5 | 1991LRa (105194) | 471    |

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C30H27N3O18S3 H9L TRIMCAMS CAS 77069-63-7 (5468)

1,3,5-Tris(2,3-dihydroxy-5-sulfo benzoyl)carbamido)benzene;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values   | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|--|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | U   |       |    | K1=41.0<br>B(GaHL)=46.93<br>B(GaH2L)=51.93<br>B(GaH3L)=54.33 | 1991LRb (105205) | 472    |

|       |    |      |      |       |   |  |  |  |                  |     |
|-------|----|------|------|-------|---|--|--|--|------------------|-----|
| Ga+++ | gl | KNO3 | 25°C | 0.10M | U |  |  | K1=38<br>K(Ga+H3L=GaL+3H)=3.5<br>K(GaL+H)=5.7<br>K(GaHL+H)=4.9 | 1982PWa (105206) | 473 |
|-------|----|------|------|-------|---|--|--|--|------------------|-----|

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C30H44N2O6 H3L (6508)

N,N'-Bis(2-hydroxy-3-methyl-5-tert-butylbenzyl)diaminoethane-N,N'-diethanoic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|----------|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | M   |       |    | K1=36.30 | 1990MMa (105315) | 474    |

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C30H45N4O6P3 H3L CAS 182250-11-9 (8686)

Tris(4-(phenylphosphinato)-3-methyl-3-azabutyl)amine;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg | K values        | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|----|-----------------|------------------|--------|
| Ga+++ | nmr | NaCl   | 25°C | 0.16M | C   |       |    | K(Ga+2H3L)=4.24 | 1996LRc (105322) | 475    |

Method: 71Ga nmr. Medium pH 1.5.

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C31H32N2O13S                      H6L      Xylenol orange      CAS 63721-85-5 (432)  
5,5'-Bis-N,N-bis(carboxymethyl)aminomethyl-4'-hydroxy-3,3'-dimethylfuchsone-2"-sulfonic acid;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                               | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|---|------------------|--------|
| Ga+++ | sp  | oth/un | ?    | ?     | U   |       | K(Ga+H2L)=15.2                            | 1969ASc (105466) | 476    |
| Ga+++ | sp  | NaCl04 | 20°C | 0.10M | U   |       | K(Ga+H4L)=9.37<br>K(Ga2(H2L)2+2H2L)=12.49 | 1969NNb (105467) | 477    |
| Ga+++ | sp  | NaCl   | 20°C | 0.20M | U   |       | K(Ga+H2L)=13.36                           | 1967Kuc (105468) | 478    |
| Ga+++ | sp  | oth/un | 25°C | ?     | U   |       | K(?)=4.8                                  | 1966DMd (105469) | 479    |
| Ga+++ | sp  | oth/un | ?    | 0.01M | U   |       | K(Ga+H5L)=7.0<br>K(GaH5L+H5L)=4.5         | 1966DPb (105470) | 480    |

\*\*\*\*\*

C33H33N3O18S3                      H9L                      CAS 78261-77-5 (2945)  
1,3,5-Tris(N-methyl-N-(2,3-dihydroxysulfobenzoyl)aminomethyl)benzene;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values  | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | U   |       | K1=39.1<br>B(GaHL)=45.91<br>B(GaH2L)=52.25<br>B(GaH3L)=55.25 | 1991LRb (105878) | 481    |

\*\*\*\*\*

C33H45N3O3                      H3L                      (6764)  
N,N',N''-Tris(3,5-dimethyl-2-hydroxybenzyl)-1,4,7-triazacyclononane;

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference        | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|------------------|--------|
| Ga+++ | sp  | alc/w  | 25°C | 75%  | U   |       | K1=44.2     | 1991CMc (105957) | 482    |

Medium: 75% v/v EtOH/H2O

\*\*\*\*\*

C34H43N3O18S3                      H9L      DiP-3,4-LICAMS      CAS 96649-34-2 (5595)  
Diisopropyl-N,N',N''-tris(5-sulfonato-2,3-dihydroxybenzoyl)-1,5,10-triazadecane;

| Metal | Mtd | Medium | Temp | Conc  | Cal | Flags | Lg K values                                | Reference        | ExptNo |
|-------|-----|--------|------|-------|-----|-------|--|------------------|--------|
| Ga+++ | sp  | KCl    | 25°C | 0.10M | U   |       | K1=36.6<br>B(GaHL)=42.94<br>B(GaH2L)=49.27 | 1991LRb (106065) | 483    |

B(GaH3L)=53.57

-----  
Ga+++      gl   KCl      25°C 0.10M C      K1=36      1985KPb (106066) 484  
K(GaL+2H)=12.1

\*\*\*\*\*

C36H33N7O15S3      H6L      O-TRENSEX      CAS 169209-69-2 (7370)  
Tris-N-(2-aminoethyl-(8-hydroxyquinoline-5-sulphonato-7-carboxamido))amine;

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      sp   none      25°C 0.0 C      2001LAa (106242) 485

B(GaHL)=33.7  
B(Ga2HL)=40.5  
B(Ga3HL)=44.7

Method: spectrophotometric titration.

\*\*\*\*\*

C37H44N2O13S      H6L      MeThymol Blue      (428)  
3,3'-Bis(N,N-di(carboxymethyl)aminomethyl)thymolsulfonephthalein;

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      sp   oth/un      25°C 0.10M C      1997ASa (106598) 486

K1eff=4.85  
K2eff=4.72

Medium: 0.10 M acetate buffer, pH 5.0.

-----  
Ga+++      sp   oth/un      25°C dil U      1969KBa (106599) 487

B(GaH3L)=40.38  
K(Ga+H3L)=11.43  
K(GaH3L+H5L)=4.88

-----  
Ga+++      sp   NaClO4      22°C 1.0M U      1967LMg (106600) 488

K(2Ga+2H4L=GaH3L+GaH4L+H)=4.35(?),  
K(2Ga+4H4L=Ga(H3L)2+Ga(H4L)2+2H)=7.58(?)

\*\*\*\*\*

C39H45N3O18S3      H9L      TiP-MECAMS      CAS 96649-36-4 (5599)  
Triisopropyl-tris(5-sulfonato-2,3-dihydroxybenzoyl)-1,3,5-tris(aminoethyl)benzene;

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo  
-----

Ga+++      gl   KCl      25°C 0.10M C      K1=35      1985KPb (106715) 489

K(GaL+H)=7.20  
K(GaHL+H)=5.8  
K(GaH2L+H)=3.1

\*\*\*\*\*

C40H47N3O10      H7L      CAS 86728-01-0 (5503)  
Bis(3-(((2-hydroxy-5-methylbenzyl)amino)methyl)-2-hydroxy-5-methylbenzyl)amine-trie  
thanoic acid

-----  
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo



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-----
Ga+++      gl  oth/un  25°C  0.10M U      K1=19.20      1983YMa (106787) 490
                                         K(GaH-1L+H)=5.01
                                         K(GaH-2L+H)=7.48
                                         K(GaH-3L+H)=9.60

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*****
C40H51N3O18S3      H9L      DC-3,4-LICAMS      CAS 96649-27-2 (5598)
Dicyclohexyl-N,N"N'tris(5-sulfonato-2,3-dihydroxybenzoyl)-1,5,10-triazadecane;
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| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

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-----
Ga+++      gl  KCl      25°C  0.10M C      K1=35          1985KPb (106819) 491
                                         K(GaL+2H)=12.0

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*****
C41H67N7O4          L          CAS 357333-45-0 (8036)
9-Methyl-3,6,9,12,15,22,31-heptaaza-25,28,38,41-tetraoxahexacyclohepta-tetracontahe
xaene;
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| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

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-----
Ga+++      gl  NaCl      25°C  0.15M C      K1=13.8        2001BFa (106903) 492
                                         K(GaL+H)=6.0
                                         K(GdL+2H)=12.5
                                         K(GdL+OH)=7.1

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*****
Polymer          HL      Bleomycin          (2324)
Bleomycin A2, B2 etc.
-----

```

| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

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-----
Ga+++      sp  oth/un  25°C      ?  U          1980LPa (108088) 493
                                         K1eff=4.7 (pH 7)
pH 7.0. Using an ISE, K1eff=4.82. Data also for other bleomycins.

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*****
Polymer          L          (3532)
Human transferrin;
-----

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| Metal | Mtd | Medium | Temp | Conc | Cal | Flags | Lg K values | Reference | ExptNo |
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|
|-------|-----|--------|------|------|-----|-------|-------------|-----------|--------|

```

-----
Ga+++      sp  KNO3      25°C  0.10M C          1994HCa (108212) 494
                                         Keff(Ga+HCO3L)=19.75
                                         Keff(Ga+GaHCO3L)=18.80
                                         Keff(Ga+L)=6.9

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At pH 7.4 in 0.1M N-(2-hydroxyethyl)piperazine-N'-2-ethanesulfonic acid,
(HEPES) and 5mM HCO3
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Ga+++      sp  oth/un  25°C  0.10M U          1983HPb (108213) 495
                                         K1eff=20.3
                                         K2eff=19.3

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Medium: 0.1 M Tris buffer, pH 7.4; 0.027 M HCO3-. By competition with the

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Ga-NTA and Ga-EDDA complexes.

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#### EXPLANATORY NOTES

DATA Flags are :-

T Data at other TEMPERATURES  
I Data with various BACKGROUNDS  
H Data for THERMOCHEMICAL quantities  
M Data for TERNARY Complexes

EVALUATION Flags are :-

T or IUP=T signifies EVALUATION RATING = Tentative by IUPAC

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