

Temperature = 473.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	3.054995E+02	-2.584873E+03	
2	4.050108E+00	-1.020741E+03	
3	4.112660E+00	-3.857548E+04	
4	1.137794E+00	2.652607E+03	
5	8.586387E-05	-1.888729E+04	
6	5.930326E-01	-1.264035E+05	
7	1.000000E-12	6.429028E+03	9.353653E+04
8	9.461795E+02	-3.248023E+03	
9	1.000000E-12	-2.736236E+04	7.916535E+03
10	1.000000E-12	-9.084182E+03	2.463059E+04
11	1.000000E-12	-3.259313E+04	3.867637E+04
12	1.000000E-12	6.077561E+02	3.064917E+04
13	1.000000E-12	-6.616176E+03	4.496513E+04
14	1.000000E-12	-1.500962E+04	
15	2.065096E+01	-4.563733E+03	
16	1.208315E+03	-2.999602E+03	
17	5.534578E+00	-4.055435E+04	
18	1.929229E+01	6.737463E+02	
19	2.027602E+02	-2.086615E+04	
20	2.611114E+01	-1.283824E+05	
21	1.000000E-12	-6.476234E+04	2.686234E+04
22	1.482664E+03	-7.765209E+03	
23	2.720995E+00	-2.659605E+04	
24	5.423655E-02	-2.503192E+04	
25	1.000000E-12	-5.534836E+04	7.238290E+03
26	2.370311E-06	-4.289843E+04	
27	3.426205E-06	-3.180293E+04	
28	1.000000E-12	-2.467548E+04	5.563314E+03
29	1.000000E-12	-4.721933E+04	2.057421E+04
30	4.162816E-01	-2.656545E+04	
31	1.000000E-12	-2.505665E+04	2.304869E+04
32	8.325701E-01	-2.656550E+04	
33			-1.076481E+04
34			-8.385948E+04
35			-1.361476E+05
36			-1.232895E+04
37			-2.863135E+04
38			-4.831955E+04
39			-7.091464E+03
40			-3.248023E+03
41			2.294995E+04
42			-7.765208E+03
43			4.755699E+03
44			1.909799E+04

Gibbs/Helmholtz Energy contributions per phase

BCC_A2 -4.09761684690937E+06
 CEMENTITE -9.00577203718475E-08
 FCC_A1 -2.30263973978525E+07
 M23C6 -1.06901922848201E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	3.05499E+02	0.2421577
Fe:1<BCC_A2>	4.05011E+00	0.0032104
Mn:1<BCC_A2>	4.11266E+00	0.0032599
Mo:1<BCC_A2>	1.13779E+00	0.0009019
Ni:1<BCC_A2>	8.58639E-05	0.0000001
Si:1<BCC_A2>	5.93033E-01	0.0004701
C:2<BCC_A2>	0.00000E+00	0.0000000
Va:2<BCC_A2>	9.46180E+02	0.7500000
Phase total is	1.26157E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000000
Phase FCC_A1		
Cr:1<FCC_A1>	2.06510E+01	0.0069641
Fe:1<FCC_A1>	1.20832E+03	0.4074810
Mn:1<FCC_A1>	5.53458E+00	0.0018664
Mo:1<FCC_A1>	1.92923E+01	0.0065060
Ni:1<FCC_A1>	2.02760E+02	0.0683770
Si:1<FCC_A1>	2.61111E+01	0.0088055
C:2<FCC_A1>	0.00000E+00	0.0000000
Va:2<FCC_A1>	1.48266E+03	0.5000000
Phase total is	2.96533E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>	2.72099E+00	0.6761766
Fe:1<M23C6>	5.42365E-02	0.0134780
Mn:1<M23C6>	0.00000E+00	0.0000000
Ni:1<M23C6>	2.37031E-06	0.0000006
Cr:2<M23C6>	3.42621E-06	0.0000009
Fe:2<M23C6>	0.00000E+00	0.0000000
Mn:2<M23C6>	0.00000E+00	0.0000000
Mo:2<M23C6>	4.16282E-01	0.1034474
Ni:2<M23C6>	0.00000E+00	0.0000000
C:3<M23C6>	8.32570E-01	0.2068966
Phase total is	4.02409E+00	1.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-1.076481E+04	6.475050E		
-02	1.212420E+03	6.771000E+01			
C		-8.385948E+04	5.487942E-10	8.325701E	
-01	1.000000E-02				
Si		-1.361476E+05	9.230770E		
-16	2.670417E+01	7.500000E-01			
Cr		-1.232895E+04	4.350271E		
-02	3.288715E+02	1.710000E+01			
Ni		-2.863135E+04	6.890395E		
-04	2.027603E+02	1.190000E+01			
Mn		-4.831955E+04	4.614010E		
-06	9.647239E+00	5.300000E-01			
Mo		-7.091464E+03	1.647748E		
-01	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 92

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
(ignoring inaccuracies in data) = Errabs + Errrel * ni where

Errabs = 5.0E-06

Errrel = 1.0E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	0.33405	0.00000	2.22075
FCC_A1	99.66147	0.00000	97.77925
M23C6	0.00447	100.00000	0.00000

	Cr	Ni	Mn
BCC_A2	92.89329	0.00004	42.63044
FCC_A1	6.27934	99.99996	57.36956
M23C6	0.82737	0.00000	0.00000

	Mo
BCC_A2	5.45800
FCC_A1	92.54510
M23C6	1.99690

Amount Phase Mole fraction of component within phase

Amount compnt moles	Phase	Fe	C	Si
3.1539E+02	BCC_A2	0.0128415	0.0000000	0.0018803
1.4827E+03	FCC_A1	0.8149621	0.0000000	0.0176110
4.0241E+00	M23C6	0.0134780	0.2068966	0.0000000

	Cr	Ni	Mn
3.1539E+02 BCC_A2	0.9686306	0.0000003	0.0130398
1.4827E+03 FCC_A1	0.0139283	0.1367539	0.0037329
4.0241E+00 M23C6	0.6761775	0.0000006	0.0000000

	Mo
3.1539E+02 BCC_A2	0.0036075
1.4827E+03 FCC_A1	0.0130119
4.0241E+00 M23C6	0.1034474

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
1.6463E+01	BCC_A2	0.0137393	0.0000000	0.0010117
8.3343E+01	FCC_A1	0.8096769	0.0000000	0.0087991
1.9445E-01	M23C6	0.0155772	0.0514276	0.0000000

	Cr	Ni	Mn
1.6463E+01 BCC_A2	0.9648935	0.0000003	0.0137244
8.3343E+01 FCC_A1	0.0128837	0.1427836	0.0036483
1.9445E-01 M23C6	0.7276027	0.0000007	0.0000000

	Mo
1.6463E+01 BCC_A2	0.0066307
8.3343E+01 FCC_A1	0.0222083
1.9445E-01 M23C6	0.2053918

Gibbs Energy = -2.7230916168E+07 J System Enthalpy = 1.4884487690E+07 J

Temperature = 573.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	2.715801E+02	-3.360205E+03	
2	1.109890E+01	-3.362251E+03	
3	2.374280E+00	-4.394899E+04	
4	1.749020E+00	-1.906912E+03	
5	2.137746E-03	-2.203489E+04	
6	1.428310E+00	-1.251751E+05	
7	1.000000E-12	-2.739232E+04	6.085691E+04
8	8.646982E+02	-4.289590E+03	
9	1.000000E-12	-3.152465E+04	5.960333E+03
10	1.000000E-12	-1.450723E+04	2.297980E+04
11	1.000000E-12	-3.736460E+04	4.070916E+04
12	1.000000E-12	-5.541208E+03	3.049048E+04
13	1.000000E-12	-1.202038E+04	4.413929E+04
14	1.000000E-12	-2.019162E+04	
15	5.459820E+01	-5.751324E+03	
16	1.201239E+03	-5.753370E+03	

17	7.272959E+00	-4.634011E+04	
18	1.868112E+01	-4.298031E+03	
19	2.027581E+02	-2.442601E+04	
20	2.527586E+01	-1.275662E+05	
21	1.000000E-12	-9.228562E+04	2.151668E+03
22	1.509825E+03	-1.047765E+04	
23	2.693109E+00	-3.009187E+04	
24	8.211957E-02	-3.009391E+04	
25	1.000000E-12	-6.799345E+04	2.687204E+03
26	5.650687E-06	-4.876657E+04	
27	6.741807E-05	-3.154502E+04	
28	1.073879E-06	-3.154704E+04	
29	1.000000E-12	-6.458704E+04	7.546748E+03
30	4.162166E-01	-3.009172E+04	
31	1.000000E-12	-4.265333E+04	7.566367E+03
32	8.325701E-01	-3.009197E+04	
33			-1.623102E+04
34			-8.395964E+04
35			-1.380438E+05
36			-1.622898E+04
37			-3.490366E+04
38			-5.681776E+04
39			-1.477568E+04
40			-4.289591E+03
41			2.125601E+04
42			-1.047765E+04
43			4.620965E+03
44			1.795589E+04

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-4.94560149390844E+06
CEMENTITE	-1.21149690730798E-07
FCC_A1	-3.16388416938487E+07
M23C6	-1.21092748889229E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	2.71580E+02	0.2355562
Fe:1<BCC_A2>	1.10989E+01	0.0096267
Mn:1<BCC_A2>	2.37428E+00	0.0020593
Mo:1<BCC_A2>	1.74902E+00	0.0015170
Ni:1<BCC_A2>	2.13775E-03	0.0000019
Si:1<BCC_A2>	1.42831E+00	0.0012389
C:2<BCC_A2>	0.00000E+00	0.0000000
Va:2<BCC_A2>	8.64698E+02	0.7500000
Phase total is	1.15293E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		

```

Fe:1<CEMENTITE>
Mn:1<CEMENTITE>
Mo:1<CEMENTITE>
Ni:1<CEMENTITE>
C:2<CEMENTITE>
Notional activity                                0.0000000
Phase FCC_A1
Cr:1<FCC_A1>          5.45982E+01      0.0180810
Fe:1<FCC_A1>          1.20124E+03      0.3978073
Mn:1<FCC_A1>          7.27296E+00      0.0024085
Mo:1<FCC_A1>          1.86811E+01      0.0061865
Ni:1<FCC_A1>          2.02758E+02      0.0671462
Si:1<FCC_A1>          2.52759E+01      0.0083705
C:2<FCC_A1>           0.00000E+00      0.0000000
Va:2<FCC_A1>          1.50982E+03      0.5000000
Phase total is        3.01965E+03      1.0000000
Phase M23C6
Cr:1<M23C6>           2.69311E+00      0.6692468
Fe:1<M23C6>           8.21196E-02      0.0204070
Mn:1<M23C6>           0.00000E+00      0.0000000
Ni:1<M23C6>           5.65069E-06      0.0000014
Cr:2<M23C6>           6.74181E-05      0.0000168
Fe:2<M23C6>           1.07388E-06      0.0000003
Mn:2<M23C6>           0.00000E+00      0.0000000
Mo:2<M23C6>           4.16217E-01      0.1034313
Ni:2<M23C6>           0.00000E+00      0.0000000
C:3<M23C6>            8.32570E-01      0.2068966
Phase total is        4.02409E+00      1.0000000

```

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-1.623102E+04	3.314507E		
-02	1.212420E+03	6.771000E+01			
C		-8.395964E+04	2.220436E-08	8.325701E	
-01	1.000000E-02				
Si		-1.380438E+05	2.607657E		
-13	2.670417E+01	7.500000E-01			
Cr		-1.622898E+04	3.315925E		
-02	3.288715E+02	1.710000E+01			
Ni		-3.490366E+04	6.580589E		
-04	2.027603E+02	1.190000E+01			
Mn		-5.681776E+04	6.616491E		
-06	9.647239E+00	5.300000E-01			
Mo		-1.477568E+04	4.498664E		
-02	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 124

Estimate of Stage 1* calculational inaccuracy in species mole amount ni

(ignoring inaccuracies in data) = Errabs + Errrel * ni where

Errabs = 5.0E-06

Errrel = 4.5E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	0.91543	0.00000	5.34864
FCC_A1	99.07779	0.00000	94.65136
M23C6	0.00677	100.00000	0.00000

	Cr	Ni	Mn
BCC_A2	82.57940	0.00105	24.61098
FCC_A1	16.60168	99.99894	75.38902
M23C6	0.81891	0.00000	0.00000

	Mo
BCC_A2	8.39005
FCC_A1	89.61336
M23C6	1.99659

Amount compnt moles	Phase	Mole fraction of component within phase		
		Fe	C	Si
2.8823E+02	BCC_A2	0.0385067	0.0000000	0.0049554
1.5098E+03	FCC_A1	0.7956145	0.0000000	0.0167409
4.0241E+00	M23C6	0.0204073	0.2068966	0.0000000

		Cr	Ni	Mn
2.8823E+02	BCC_A2	0.9422250	0.0000074	0.0082374
1.5098E+03	FCC_A1	0.0361619	0.1342925	0.0048171
4.0241E+00	M23C6	0.6692635	0.0000014	0.0000000

		Mo
2.8823E+02	BCC_A2	0.0060681
1.5098E+03	FCC_A1	0.0123730
4.0241E+00	M23C6	0.1034313

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
1.5079E+01	BCC_A2	0.0411051	0.0000000	0.0026602
8.4726E+01	FCC_A1	0.7917939	0.0000000	0.0083786
1.9455E-01	M23C6	0.0235730	0.0513999	0.0000000

		Cr	Ni	Mn
1.5079E+01	BCC_A2	0.9364484	0.0000083	0.0086501
8.4726E+01	FCC_A1	0.0335067	0.1404512	0.0047159
1.9455E-01	M23C6	0.7197760	0.0000017	0.0000000

		Mo
1.5079E+01	BCC_A2	0.0111278

8.4726E+01 FCC_A1 0.0211537
 1.9455E-01 M23C6 0.2052493

Gibbs Energy = -3.6705535937E+07 J System Enthalpy = 2.0752124120E+07 J

Temperature = 673.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	2.199255E+02	-4.025093E+03	
2	2.077961E+01	-5.590672E+03	
3	1.430807E+00	-4.954875E+04	
4	2.168901E+00	-6.173289E+03	
5	2.049384E-02	-2.501345E+04	
6	2.366391E+00	-1.223857E+05	
7	1.000000E-12	-6.464128E+04	2.483010E+04
8	7.400750E+02	-5.577008E+03	
9	1.000000E-12	-3.609890E+04	4.011721E+03
10	1.000000E-12	-2.048295E+04	2.119325E+04
11	1.000000E-12	-4.262918E+04	4.300529E+04
12	1.000000E-12	-1.209321E+04	3.016565E+04
13	1.000000E-12	-1.785132E+04	4.324762E+04
14	1.000000E-12	-2.583111E+04	
15	1.062809E+02	-7.343793E+03	
16	1.191529E+03	-8.909372E+03	
17	8.216432E+00	-5.286745E+04	
18	1.826176E+01	-9.491988E+03	
19	2.027398E+02	-2.833215E+04	
20	2.433778E+01	-1.257044E+05	
21	7.282760E-06	-9.730672E+04	
22	1.551366E+03	-1.341232E+04	
23	2.664494E+00	-3.402173E+04	
24	1.107060E-01	-3.558731E+04	
25	2.108428E-08	-7.954616E+04	
26	9.458023E-06	-5.501010E+04	
27	5.645504E-04	-3.193895E+04	
28	1.617552E-05	-3.350452E+04	
29	1.784229E-07	-7.746260E+04	
30	4.157002E-01	-3.408714E+04	
31	3.710268E-07	-5.292713E+04	
32	8.325629E-01	-3.408425E+04	
33			-2.232179E+04
34			-8.389433E+04
35			-1.391168E+05
36			-2.075621E+04
37			-4.174453E+04
38			-6.628006E+04
39			-2.290445E+04

40	-5.577051E+03
41	1.935441E+04
42	-1.341243E+04
43	4.421879E+03
44	1.660337E+04

Gibbs/Helmholtz Energy contributions per phase	
BCC_A2	-5.50320575537520E+06
CEMENTITE	-1.54986661256898E-07
FCC_A1	-4.16148497093191E+07
M23C6	-1.37156862043844E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	2.19925E+02	0.2228748
Fe:1<BCC_A2>	2.07796E+01	0.0210583
Mn:1<BCC_A2>	1.43081E+00	0.0014500
Mo:1<BCC_A2>	2.16890E+00	0.0021980
Ni:1<BCC_A2>	2.04938E-02	0.0000208
Si:1<BCC_A2>	2.36639E+00	0.0023981
C:2<BCC_A2>	0.00000E+00	0.0000000
Va:2<BCC_A2>	7.40075E+02	0.7500000
Phase total is	9.86767E+02	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000000
Phase FCC_A1		
Cr:1<FCC_A1>	1.06281E+02	0.0342540
Fe:1<FCC_A1>	1.19153E+03	0.3840259
Mn:1<FCC_A1>	8.21643E+00	0.0026481
Mo:1<FCC_A1>	1.82618E+01	0.0058857
Ni:1<FCC_A1>	2.02740E+02	0.0653423
Si:1<FCC_A1>	2.43378E+01	0.0078440
C:2<FCC_A1>	7.28276E-06	0.0000000
Va:2<FCC_A1>	1.55137E+03	0.5000000
Phase total is	3.10273E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>	2.66449E+00	0.6621418
Fe:1<M23C6>	1.10706E-01	0.0275111
Mn:1<M23C6>	0.00000E+00	0.0000000

Ni:1<M23C6>	9.45802E-06	0.0000024
Cr:2<M23C6>	5.64550E-04	0.0001403
Fe:2<M23C6>	1.61755E-05	0.0000040
Mn:2<M23C6>	1.78423E-07	0.0000000
Mo:2<M23C6>	4.15700E-01	0.1033038
Ni:2<M23C6>	3.71027E-07	0.0000001
C:3<M23C6>	8.32563E-01	0.2068966
Phase total is	4.02405E+00	1.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-2.232179E+04	1.851596E		
-02 1.212420E+03	6.771000E+01				
C		-8.389433E+04	3.081327E-07	8.325701E	
-01 1.000000E-02					
Si		-1.391168E+05	1.595046E		
-11 2.670417E+01	7.500000E-01				
Cr		-2.075621E+04	2.449373E		
-02 3.288715E+02	1.710000E+01				
Ni		-4.174453E+04	5.755667E		
-04 2.027603E+02	1.190000E+01				
Mn		-6.628006E+04	7.175097E		
-06 9.647239E+00	5.300000E-01				
Mo		-2.290445E+04	1.668494E		
-02 2.084636E+01	2.000000E+00				
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 142

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
(ignoring inaccuracies in data) = Errabs + Errrel * ni where

Errabs = 5.0E-06

Errrel = 8.6E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	1.71390	0.00000	8.86150
FCC_A1	98.27697	0.00087	91.13850
M23C6	0.00913	99.99913	0.00000

	Cr	Ni	Mn
BCC_A2	66.87278	0.01011	14.83126
FCC_A1	32.31686	99.98989	85.16874
M23C6	0.81036	0.00000	0.00000

	Mo
BCC_A2	10.40422
FCC_A1	87.60167
M23C6	1.99411

Amount	Phase	Mole fraction of component within phase		
compnt moles		Fe	C	Si

2.4669E+02	BCC_A2	0.0842331	0.0000000	0.0095925
1.5514E+03	FCC_A1	0.7680517	0.0000000	0.0156880
4.0241E+00	M23C6	0.0275151	0.2068966	0.0000000

		Cr	Ni	Mn
2.4669E+02	BCC_A2	0.8914994	0.0000831	0.0058000
1.5514E+03	FCC_A1	0.0685080	0.1306847	0.0052963
4.0241E+00	M23C6	0.6622821	0.0000024	0.0000000

		Mo
2.4669E+02	BCC_A2	0.0087919
1.5514E+03	FCC_A1	0.0117714
4.0241E+00	M23C6	0.1033038

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si

1.2950E+01	BCC_A2	0.0896117	0.0000000	0.0051321
8.6855E+01	FCC_A1	0.7661404	0.0000000	0.0078699
1.9464E-01	M23C6	0.0317691	0.0513768	0.0000000

		Cr	Ni	Mn
1.2950E+01	BCC_A2	0.8830252	0.0000929	0.0060699
8.6855E+01	FCC_A1	0.0636252	0.1369957	0.0051971
1.9464E-01	M23C6	0.7119469	0.0000030	0.0000001

		Mo
1.2950E+01	BCC_A2	0.0160682
8.6855E+01	FCC_A1	0.0201719
1.9464E-01	M23C6	0.2049042

Gibbs Energy = -4.7255212327E+07 J System Enthalpy = 2.7154502551E+07 J

Temperature = 773.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.589502E+02	-4.556317E+03	
2	3.353966E+01	-7.582353E+03	
3	9.105215E-01	-5.496989E+04	
4	2.349356E+00	-1.014329E+04	
5	1.315862E-01	-2.774749E+04	
6	3.037759E+00	-1.187272E+05	
7	1.062977E-06	-9.051882E+04	
8	5.967571E+02	-7.122164E+03	

9	1.000000E-12	-4.104204E+04	2.054872E+03
10	1.000000E-12	-2.692368E+04	1.919926E+04
11	1.000000E-12	-4.834104E+04	4.516975E+04
12	1.000000E-12	-1.900054E+04	2.968338E+04
13	1.000000E-12	-2.406378E+04	4.222462E+04
14	1.000000E-12	-3.187422E+04	
15	1.672855E+02	-9.362726E+03	
16	1.178739E+03	-1.238876E+04	
17	8.736715E+00	-5.977630E+04	
18	1.808376E+01	-1.494970E+04	
19	2.026287E+02	-3.255391E+04	
20	2.366641E+01	-1.235336E+05	
21	2.752675E-04	-9.995645E+04	
22	1.599139E+03	-1.656008E+04	
23	2.633066E+00	-3.834011E+04	
24	1.412335E-01	-4.136615E+04	
25	1.107730E-07	-8.875450E+04	
26	1.328411E-05	-6.153158E+04	
27	2.772599E-03	-3.294489E+04	
28	1.260586E-04	-3.597090E+04	
29	1.768581E-06	-8.335887E+04	
30	4.132421E-01	-3.853190E+04	
31	4.362448E-06	-5.613703E+04	
32	8.322938E-01	-3.849427E+04	
33			-2.894886E+04
34			-8.339647E+04
35			-1.400938E+05
36			-2.592283E+04
37			-4.911432E+04
38			-7.633671E+04
39			-3.150984E+04
40			-7.122214E+03
41			1.717409E+04
42			-1.656018E+04
43			4.139117E+03
44			1.496742E+04

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-5.66693605480339E+06
CEMENTITE	-1.91245306210701E-07
FCC_A1	-5.29638132861215E+07
M23C6	-1.54852968245952E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		

Cr:1<BCC_A2>	1.58950E+02	0.1997674
Fe:1<BCC_A2>	3.35397E+01	0.0421524
Mn:1<BCC_A2>	9.10521E-01	0.0011443
Mo:1<BCC_A2>	2.34936E+00	0.0029527
Ni:1<BCC_A2>	1.31586E-01	0.0001654
Si:1<BCC_A2>	3.03776E+00	0.0038178
C:2<BCC_A2>	1.06298E-06	0.0000000
Va:2<BCC_A2>	5.96757E+02	0.7500000
Phase total is	7.95676E+02	1.0000000

Phase CEMENTITE

Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000000

Phase FCC_A1

Cr:1<FCC_A1>	1.67285E+02	0.0523048
Fe:1<FCC_A1>	1.17874E+03	0.3685540
Mn:1<FCC_A1>	8.73672E+00	0.0027317
Mo:1<FCC_A1>	1.80838E+01	0.0056542
Ni:1<FCC_A1>	2.02629E+02	0.0633555
Si:1<FCC_A1>	2.36664E+01	0.0073997
C:2<FCC_A1>	2.75268E-04	0.0000001
Va:2<FCC_A1>	1.59914E+03	0.4999999
Phase total is	3.19828E+03	1.0000000

Phase M23C6

Cr:1<M23C6>	2.63307E+00	0.6545432
Fe:1<M23C6>	1.41233E-01	0.0351087
Mn:1<M23C6>	1.10773E-07	0.0000000
Ni:1<M23C6>	1.32841E-05	0.0000033
Cr:2<M23C6>	2.77260E-03	0.0006892
Fe:2<M23C6>	1.26059E-04	0.0000313
Mn:2<M23C6>	1.76858E-06	0.0000004
Mo:2<M23C6>	4.13242E-01	0.1027262
Ni:2<M23C6>	4.36245E-06	0.0000011
C:3<M23C6>	8.32294E-01	0.2068966
Phase total is	4.02275E+00	1.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-2.894886E+04	1.106271E		
-02	1.212420E+03	6.771000E+01			
C		-8.339647E+04	2.315877E-06	8.325701E	
-01	1.000000E-02				
Si		-1.400938E+05	3.416269E		
-10	2.670417E+01	7.500000E-01			
Cr		-2.592283E+04	1.771483E		
-02	3.288715E+02	1.710000E+01			
Ni		-4.911432E+04	4.799950E		

```

-04 2.027603E+02 1.190000E+01
Mn -7.633671E+04 6.946397E
-06 9.647239E+00 5.300000E-01
Mo -3.150984E+04 7.426949E
-03 2.084636E+01 2.000000E+00
Total
1.802082E+03 1.000000E+02

```

Number of Gibbs Energy evaluations in Stage 1 = 160

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 1.4E-04

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	2.76634	0.00013	11.37560
FCC_A1	97.22200	0.03306	88.62440
M23C6	0.01166	99.96681	0.00000

	Cr	Ni	Mn
BCC_A2	48.33200	0.06490	9.43816
FCC_A1	50.86652	99.93509	90.56182
M23C6	0.80148	0.00001	0.00002

	Mo
BCC_A2	11.26986
FCC_A1	86.74781
M23C6	1.98232

Amount Phase Mole fraction of component within phase
 compnt moles

	Fe	C	Si
1.9892E+02 BCC_A2	0.1686096	0.0000000	0.0152713
1.5991E+03 FCC_A1	0.7371079	0.0000002	0.0147995
4.0228E+00 M23C6	0.0351400	0.2068966	0.0000000

	Cr	Ni	Mn
1.9892E+02 BCC_A2	0.7990696	0.0006615	0.0045773
1.5991E+03 FCC_A1	0.1046096	0.1267110	0.0054634
4.0228E+00 M23C6	0.6552324	0.0000044	0.0000005

	Mo
1.9892E+02 BCC_A2	0.0118106
1.5991E+03 FCC_A1	0.0113084
4.0228E+00 M23C6	0.1027262

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
1.0506E+01	BCC_A2	0.1782822	0.0000000	0.0081205
8.9299E+01	FCC_A1	0.7371746	0.0000000	0.0074433
1.9459E-01	M23C6	0.0405696	0.0513726	0.0000000
		Cr	Ni	Mn
1.0506E+01	BCC_A2	0.7866476	0.0007351	0.0047612
8.9299E+01	FCC_A1	0.0974050	0.1331735	0.0053749
1.9459E-01	M23C6	0.7043104	0.0000053	0.0000005
		Mo		
1.0506E+01	BCC_A2	0.0214535		
8.9299E+01	FCC_A1	0.0194286		
1.9459E-01	M23C6	0.2037416		

Gibbs Energy = -5.8785602309E+07 J System Enthalpy = 3.3875427710E+07 J

Temperature = 873.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.863355E+02	-2.907090E+03	
2	5.992115E+02	-7.321575E+03	
3	1.181853E+00	-5.634410E+04	
4	8.184108E+00	-1.201052E+04	
5	2.730317E+01	-2.550780E+04	
6	2.019547E+01	-1.178031E+05	
7	5.524553E-04	-9.086673E+04	
8	2.527234E+03	-9.697480E+03	
9	1.000000E-12	-4.632189E+04	
10	1.000000E-12	-3.376504E+04	1.694951E+04
11	1.000000E-12	-5.446426E+04	4.527307E+04
12	1.000000E-12	-2.622583E+04	2.917823E+04
13	1.000000E-12	-3.062285E+04	3.827812E+04
14	1.000000E-12	-3.827998E+04	
15	1.399347E+02	-1.182293E+04	
16	6.130343E+02	-1.623742E+04	
17	8.465375E+00	-6.525994E+04	
18	1.225795E+01	-2.092636E+04	
19	1.754570E+02	-3.442364E+04	
20	6.508698E+00	-1.267189E+05	
21	2.581480E-03	-1.013458E+05	
22	9.556554E+02	-2.017660E+04	
23	2.591515E+00	-4.300578E+04	
24	1.732463E-01	-4.742027E+04	

25	3.490667E-07	-9.644363E+04
26	2.581593E-05	-6.560673E+04
27	9.724582E-03	-3.439755E+04
28	6.412599E-04	-3.881197E+04
29	1.037030E-05	-8.783472E+04
30	4.043024E-01	-4.350094E+04
31	3.945920E-05	-5.699878E+04
32	8.294362E-01	-4.328262E+04
33		-3.641637E+04
34		-8.116868E+04
35		-1.468984E+05
36		-3.200627E+04
37		-5.460280E+04
38		-8.543916E+04
39		-4.110589E+04
40		-9.698569E+03
41		1.429817E+04
42		-2.017918E+04
43		3.668537E+03
44		1.262762E+04

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-3.26771393507740E+07
CEMENTITE	-2.29679851718110E-07
FCC_A1	-3.85642788809906E+07
M23C6	-1.73517502924296E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.86336E+02	0.0552982
Fe:1<BCC_A2>	5.99211E+02	0.1778262
Mn:1<BCC_A2>	1.18185E+00	0.0003507
Mo:1<BCC_A2>	8.18411E+00	0.0024288
Ni:1<BCC_A2>	2.73032E+01	0.0081027
Si:1<BCC_A2>	2.01955E+01	0.0059934
C:2<BCC_A2>	5.52455E-04	0.0000002
Va:2<BCC_A2>	2.52723E+03	0.7499998
Phase total is	3.36965E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000000
Phase FCC_A1		
Cr:1<FCC_A1>	1.39935E+02	0.0732138

Fe:1<FCC_A1>	6.13034E+02	0.3207394
Mn:1<FCC_A1>	8.46537E+00	0.0044291
Mo:1<FCC_A1>	1.22580E+01	0.0064134
Ni:1<FCC_A1>	1.75457E+02	0.0917991
Si:1<FCC_A1>	6.50870E+00	0.0034053
C:2<FCC_A1>	2.58148E-03	0.0000014
Va:2<FCC_A1>	9.55655E+02	0.4999986
Phase total is	1.91132E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>	2.59151E+00	0.6464337
Fe:1<M23C6>	1.73246E-01	0.0432150
Mn:1<M23C6>	3.49067E-07	0.0000001
Ni:1<M23C6>	2.58159E-05	0.0000064
Cr:2<M23C6>	9.72458E-03	0.0024257
Fe:2<M23C6>	6.41260E-04	0.0001600
Mn:2<M23C6>	1.03703E-05	0.0000026
Mo:2<M23C6>	4.04302E-01	0.1008502
Ni:2<M23C6>	3.94592E-05	0.0000098
C:3<M23C6>	8.29436E-01	0.2068966
Phase total is	4.00894E+00	1.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-3.641637E+04	6.624243E		
-03	1.212420E+03	6.771000E+01			
C		-8.116868E+04	1.391607E-05	8.325701E	
-01	1.000000E-02				
Si		-1.468984E+05	1.624704E		
-09	2.670417E+01	7.500000E-01			
Cr		-3.200627E+04	1.216190E		
-02	3.288715E+02	1.710000E+01			
Ni		-5.460280E+04	5.407618E		
-04	2.027603E+02	1.190000E+01			
Mn		-8.543916E+04	7.726901E		
-06	9.647239E+00	5.300000E-01			
Mo		-4.110589E+04	3.471785E		
-03	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 264

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 9.4E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	49.42278	0.06636	75.62666
FCC_A1	50.56288	0.31006	24.37334

	M23C6	0.01434	99.62358	0.00000
		Cr	Ni	Mn
	BCC_A2	56.65907	13.46574	12.25069
	FCC_A1	42.54997	86.53423	87.74920
	M23C6	0.79096	0.00003	0.00011
		Mo		
	BCC_A2	39.25917		
	FCC_A1	58.80139		
	M23C6	1.93944		
Amount	Phase	Mole fraction of component within phase		
compnt moles		Fe	C	Si
8.4241E+02	BCC_A2	0.7113044	0.0000007	0.0239734
9.5566E+02	FCC_A1	0.6414770	0.0000027	0.0068107
4.0089E+00	M23C6	0.0433749	0.2068966	0.0000000
		Cr	Ni	Mn
8.4241E+02	BCC_A2	0.2211928	0.0324107	0.0014029
9.5566E+02	FCC_A1	0.1464272	0.1835976	0.0088581
4.0089E+00	M23C6	0.6488594	0.0000163	0.0000027
		Mo		
8.4241E+02	BCC_A2	0.0097151		
9.5566E+02	FCC_A1	0.0128267		
4.0089E+00	M23C6	0.1008502		
Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
4.6173E+01	BCC_A2	0.7247623	0.0000001	0.0122843
5.3634E+01	FCC_A1	0.6383327	0.0000006	0.0034083
1.9372E-01	M23C6	0.0501294	0.0514264	0.0000000
		Cr	Ni	Mn
4.6173E+01	BCC_A2	0.2098366	0.0347051	0.0014062
5.3634E+01	FCC_A1	0.1356619	0.1919983	0.0086712
1.9372E-01	M23C6	0.6981910	0.0000198	0.0000030
		Mo		
4.6173E+01	BCC_A2	0.0170054		
5.3634E+01	FCC_A1	0.0219270		
1.9372E-01	M23C6	0.2002304		

Gibbs Energy = -7.1414935735E+07 J System Enthalpy = 3.8739171208E+07 J

Temperature = 973.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.365282E+02	-4.575005E+03	
2	3.690395E+02	-8.702652E+03	
3	1.353111E+00	-6.221720E+04	
4	6.475971E+00	-1.633713E+04	
5	1.731415E+01	-2.911019E+04	
6	1.524486E+01	-1.164174E+05	
7	5.392996E-03	-8.869800E+04	
8	1.637862E+03	-1.154832E+04	
9	1.000000E-12	-4.978067E+04	
10	1.000000E-12	-4.190076E+04	1.200599E+04
11	1.000000E-12	-6.168592E+04	4.573537E+04
12	1.000000E-12	-3.361061E+04	2.793065E+04
13	1.000000E-12	-3.785841E+04	3.645587E+04
14	1.000000E-12	-4.547315E+04	
15	1.899261E+02	-1.563654E+04	
16	8.431401E+02	-1.976418E+04	
17	8.294094E+00	-7.327873E+04	
18	1.400214E+01	-2.739866E+04	
19	1.854459E+02	-4.017172E+04	
20	1.145931E+01	-1.274789E+05	
21	3.786601E-02	-1.007331E+05	
22	1.252230E+03	-2.358343E+04	
23	2.393514E+00	-4.809135E+04	
24	2.374880E-01	-5.221900E+04	
25	7.166590E-07	-1.057335E+05	
26	3.436098E-05	-7.262653E+04	
27	2.364186E-02	-3.744821E+04	
28	2.584621E-03	-4.157586E+04	
29	3.299453E-05	-9.509041E+04	
30	3.682507E-01	-4.921034E+04	
31	1.453695E-04	-6.198340E+04	
32	7.893111E-01	-4.846427E+04	
33			-4.334778E+04
34			-7.714964E+04
35			-1.510626E+05
36			-3.922044E+04
37			-6.375532E+04
38			-9.686232E+04
39			-5.098229E+04
40			-1.154839E+04
41			1.055897E+04
42			-2.358360E+04
43			2.957112E+03
44			9.561715E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-2.52200441570346E+07
CEMENTITE	-2.70097754008735E-07
FCC_A1	-5.90713690373634E+07
M23C6	-1.84891359322224E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.36528E+02	0.0625180
Fe:1<BCC_A2>	3.69040E+02	0.1689878
Mn:1<BCC_A2>	1.35311E+00	0.0006196
Mo:1<BCC_A2>	6.47597E+00	0.0029654
Ni:1<BCC_A2>	1.73141E+01	0.0079284
Si:1<BCC_A2>	1.52449E+01	0.0069808
C:2<BCC_A2>	5.39300E-03	0.0000025
Va:2<BCC_A2>	1.63786E+03	0.7499975
Phase total is	2.18382E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000003
Phase FCC_A1		
Cr:1<FCC_A1>	1.89926E+02	0.0758329
Fe:1<FCC_A1>	8.43140E+02	0.3366453
Mn:1<FCC_A1>	8.29409E+00	0.0033116
Mo:1<FCC_A1>	1.40021E+01	0.0055907
Ni:1<FCC_A1>	1.85446E+02	0.0740441
Si:1<FCC_A1>	1.14593E+01	0.0045754
C:2<FCC_A1>	3.78660E-02	0.0000151
Va:2<FCC_A1>	1.25223E+03	0.4999849
Phase total is	2.50454E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>	2.39351E+00	0.6273949
Fe:1<M23C6>	2.37488E-01	0.0622510
Mn:1<M23C6>	7.16659E-07	0.0000002
Ni:1<M23C6>	3.43610E-05	0.0000090
Cr:2<M23C6>	2.36419E-02	0.0061971
Fe:2<M23C6>	2.58462E-03	0.0006775
Mn:2<M23C6>	3.29945E-05	0.0000086
Mo:2<M23C6>	3.68251E-01	0.0965270
Ni:2<M23C6>	1.45370E-04	0.0000381
C:3<M23C6>	7.89311E-01	0.2068966
Phase total is	3.81500E+00	1.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-4.334778E+04	4.709468E		
-03	1.212420E+03	6.771000E+01			
C		-7.714964E+04	7.217627E-05	8.325701E	
-01	1.000000E-02				
Si		-1.510626E+05	7.772213E		
-09	2.670417E+01	7.500000E-01			
Cr		-3.922044E+04	7.844018E		
-03	3.288715E+02	1.710000E+01			
Ni		-6.375532E+04	3.779540E		
-04	2.027603E+02	1.190000E+01			
Mn		-9.686232E+04	6.311950E		
-06	9.647239E+00	5.300000E-01			
Mo		-5.098229E+04	1.832864E		
-03	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 307

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 3.5E-06

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	30.43827	0.64775	57.08795
FCC_A1	69.54193	4.54809	42.91205
M23C6	0.01980	94.80416	0.00000

	Cr	Ni	Mn
BCC_A2	41.51416	8.53922	14.02589
FCC_A1	57.75085	91.46069	85.97376
M23C6	0.73499	0.00009	0.00035

	Mo
BCC_A2	31.06523
FCC_A1	67.16827
M23C6	1.76650

Amount compnt moles	Phase	Mole fraction of component within phase		
		Fe	C	Si
5.4596E+02	BCC_A2	0.6759445	0.0000099	0.0279230
1.2523E+03	FCC_A1	0.6732703	0.0000302	0.0091506
3.8150E+00	M23C6	0.0629285	0.2068966	0.0000000

	Cr	Ni	Mn
--	----	----	----

5.4596E+02	BCC_A2	0.2500695	0.0317131	0.0024784
1.2523E+03	FCC_A1	0.1516611	0.1480836	0.0066231
3.8150E+00	M23C6	0.6335920	0.0000471	0.0000088

	Mo	
5.4596E+02	BCC_A2	0.0118616
1.2523E+03	FCC_A1	0.0111811
3.8150E+00	M23C6	0.0965270

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
2.9849E+01	BCC_A2	0.6904738	0.0000022	0.0143443
6.9967E+01	FCC_A1	0.6729828	0.0000065	0.0045999
1.8391E-01	M23C6	0.0729006	0.0515485	0.0000000

	Cr	Ni	Mn	
2.9849E+01	BCC_A2	0.2378301	0.0340439	0.0024905
6.9967E+01	FCC_A1	0.1411429	0.1555557	0.0065125
1.8391E-01	M23C6	0.6833815	0.0000574	0.0000101

	Mo	
2.9849E+01	BCC_A2	0.0208151
6.9967E+01	FCC_A1	0.0191999
1.8391E-01	M23C6	0.1921020

Gibbs Energy = -8.4476304554E+07 J System Enthalpy = 4.6378321880E+07 J

Temperature = 1073.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.127150E+02	-6.269072E+03	
2	2.910580E+02	-1.036227E+04	
3	1.389115E+00	-6.776234E+04	
4	5.925890E+00	-2.052110E+04	
5	1.590287E+01	-3.212796E+04	
6	1.278116E+01	-1.159102E+05	
7	2.844263E-02	-8.744894E+04	
8	1.319288E+03	-1.348441E+04	
9	3.004683E-10	-5.384247E+04	
10	1.000000E-12	-5.069574E+04	7.243515E+03
11	1.000000E-12	-6.952965E+04	4.580963E+04
12	1.000000E-12	-4.158661E+04	2.651138E+04
13	1.000000E-12	-4.569188E+04	3.401307E+04
14	1.001938E-10	-5.259119E+04	
15	2.144844E+02	-1.937843E+04	
16	9.211320E+02	-2.347162E+04	

17	8.258059E+00	-8.087170E+04
18	1.468163E+01	-3.363046E+04
19	1.868570E+02	-4.523732E+04
20	1.392301E+01	-1.290195E+05
21	2.456309E-01	-1.013084E+05
22	1.359090E+03	-2.734387E+04
23	1.637529E+00	-5.347946E+04
24	2.240798E-01	-5.757266E+04
25	1.347795E-06	-1.149725E+05
26	4.524982E-05	-7.933833E+04
27	3.448351E-02	-4.165796E+04
28	5.535592E-03	-4.575116E+04
29	6.269575E-05	-1.031512E+05
30	2.388406E-01	-5.590999E+04
31	3.258984E-04	-6.751685E+04
32	5.584966E-01	-5.397282E+04
33		-5.081509E+04
34		-7.396462E+04
35		-1.563629E+05
36		-4.672118E+04
37		-7.258078E+04
38		-1.082151E+05
39		-6.097382E+04
40		-1.348423E+04
41		7.124159E+03
42		-2.734344E+04
43		2.252424E+03
44		6.664110E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-2.37230724915190E+07
CEMENTITE	-1.99039160192684E-05
FCC_A1	-7.43753561473256E+07
M23C6	-1.45694248005187E+05

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.12715E+02	0.0640758
Fe:1<BCC_A2>	2.91058E+02	0.1654596
Mn:1<BCC_A2>	1.38912E+00	0.0007897
Mo:1<BCC_A2>	5.92589E+00	0.0033687
Ni:1<BCC_A2>	1.59029E+01	0.0090404
Si:1<BCC_A2>	1.27812E+01	0.0072658
C:2<BCC_A2>	2.84426E-02	0.0000162
Va:2<BCC_A2>	1.31929E+03	0.7499838
Phase total is	1.75909E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		

```

Fe:1<CEMENTITE>
Mn:1<CEMENTITE>
Mo:1<CEMENTITE>
Ni:1<CEMENTITE>
C:2<CEMENTITE>
Notional activity                                0.0000030
Phase FCC_A1
Cr:1<FCC_A1>                2.14484E+02      0.0788931
Fe:1<FCC_A1>                9.21132E+02      0.3388169
Mn:1<FCC_A1>                8.25806E+00      0.0030375
Mo:1<FCC_A1>                1.46816E+01      0.0054003
Ni:1<FCC_A1>                1.86857E+02      0.0687310
Si:1<FCC_A1>                1.39230E+01      0.0051213
C:2<FCC_A1>                 2.45631E-01      0.0000903
Va:2<FCC_A1>                1.35909E+03      0.4999097
Phase total is                2.71867E+03      1.0000000
Phase M23C6
Cr:1<M23C6>                 1.63753E+00      0.6066270
Fe:1<M23C6>                 2.24080E-01      0.0830109
Mn:1<M23C6>                 1.34780E-06      0.0000005
Ni:1<M23C6>                 4.52498E-05      0.0000168
Cr:2<M23C6>                 3.44835E-02      0.0127745
Fe:2<M23C6>                 5.53559E-03      0.0020507
Mn:2<M23C6>                 6.26958E-05      0.0000232
Mo:2<M23C6>                 2.38841E-01      0.0884791
Ni:2<M23C6>                 3.25898E-04      0.0001207
C:3<M23C6>                  5.58497E-01      0.2068966
Phase total is                2.69940E+00      1.0000000

```

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.081509E+04	3.359977E		
-03 1.212420E+03	6.771000E+01				
C		-7.396462E+04	2.508557E-04	8.325701E	
-01 1.000000E-02					
Si		-1.563629E+05	2.445122E		
-08 2.670417E+01	7.500000E-01				
Cr		-4.672118E+04	5.316512E		
-03 3.288715E+02	1.710000E+01				
Ni		-7.258078E+04	2.929470E		
-04 2.027603E+02	1.190000E+01				
Mn		-1.082151E+05	5.396597E		
-06 9.647239E+00	5.300000E-01				
Mo		-6.097382E+04	1.076000E		
-03 2.084636E+01	2.000000E+00				
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 424

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 6.6E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	24.00638	3.41624	47.86203
FCC_A1	75.97468	29.50272	52.13797
M23C6	0.01894	67.08103	0.00000

	Cr	Ni	Mn
BCC_A2	34.27328	7.84319	14.39910
FCC_A1	65.21831	92.15663	85.60024
M23C6	0.50841	0.00018	0.00066

	Mo
BCC_A2	28.42649
FCC_A1	70.42779
M23C6	1.14572

Amount compnt moles	Phase	Mole fraction of component within phase		
		Fe	C	Si
4.3980E+02	BCC_A2	0.6617955	0.0000647	0.0290613
1.3596E+03	FCC_A1	0.6775113	0.0001807	0.0102407
2.6994E+00	M23C6	0.0850616	0.2068966	0.0000000
		Cr	Ni	Mn
4.3980E+02	BCC_A2	0.2562867	0.0361593	0.0031585
1.3596E+03	FCC_A1	0.1577576	0.1374371	0.0060740
2.6994E+00	M23C6	0.6194015	0.0001375	0.0000237
		Mo		
4.3980E+02	BCC_A2	0.0134740		
1.3596E+03	FCC_A1	0.0107986		
2.6994E+00	M23C6	0.0884791		

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
2.4053E+01	BCC_A2	0.6757892	0.0000142	0.0149240
7.5818E+01	FCC_A1	0.6785024	0.0000389	0.0051576
1.2941E-01	M23C6	0.0990914	0.0518364	0.0000000
		Cr	Ni	Mn
2.4053E+01	BCC_A2	0.2436596	0.0388036	0.0031728
7.5818E+01	FCC_A1	0.1470941	0.1446449	0.0059838
1.2941E-01	M23C6	0.6718074	0.0001683	0.0000272

Mo

2.4053E+01	BCC_A2	0.0236366
7.5818E+01	FCC_A1	0.0185782
1.2941E-01	M23C6	0.1770693

Gibbs Energy = -9.8244122887E+07 J System Enthalpy = 5.2754107062E+07 J

Temperature = 1173.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.030600E+02	-8.148591E+03	
2	2.693462E+02	-1.212605E+04	
3	1.494050E+00	-7.329001E+04	
4	6.001528E+00	-2.483076E+04	
5	1.752712E+01	-3.499746E+04	
6	1.174707E+01	-1.161808E+05	
7	8.225306E-02	-8.985818E+04	
8	1.227446E+03	-1.549595E+04	
9	1.000000E-12	-5.952870E+04	
10	1.000000E-12	-5.884727E+04	4.657619E+03
11	1.000000E-12	-7.699659E+04	4.767221E+04
12	1.000000E-12	-4.987408E+04	2.633546E+04
13	1.000000E-12	-5.341952E+04	3.295673E+04
14	1.000000E-12	-5.969096E+04	
15	2.258114E+02	-2.334460E+04	
16	9.430734E+02	-2.732206E+04	
17	8.153189E+00	-8.848601E+04	
18	1.484483E+01	-4.002676E+04	
19	1.852331E+02	-5.019347E+04	
20	1.495710E+01	-1.313768E+05	
21	7.503171E-01	-1.056541E+05	
22	1.391323E+03	-3.129184E+04	
23	1.000000E-12	-5.823086E+04	
24	1.000000E-12	-6.220848E+04	
25	1.000000E-12	-7.468364E+04	4.868866E+04
26	1.000000E-12	-5.716794E+04	2.791181E+04
27	1.000000E-12	-6.082398E+04	
28	1.000000E-12	-5.870248E+04	6.098734E+03
29	1.000000E-12	-6.348625E+04	6.247887E+04
30	1.000000E-12	-7.098691E+04	6.518959E+03
31	1.000000E-12	-4.029955E+04	4.737302E+04
32	1.000000E-12	-5.928866E+04	
33		-5.861440E+04	
34		-7.436208E+04	
35		-1.626691E+05	
36		-5.463721E+04	
37		-8.148577E+04	

38	-1.197783E+05
39	-7.131906E+04
40	-1.549612E+04
41	4.890485E+03
42	-3.129225E+04
43	1.197994E+03
44	5.024448E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-2.53704378021106E+07
CEMENTITE	-3.56294872465399E-07
FCC_A1	-8.72326584105898E+07
M23C6	-5.23711041461863E-07

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.03060E+02	0.0629680
Fe:1<BCC_A2>	2.69346E+02	0.1645662
Mn:1<BCC_A2>	1.49405E+00	0.0009128
Mo:1<BCC_A2>	6.00153E+00	0.0036668
Ni:1<BCC_A2>	1.75271E+01	0.0107088
Si:1<BCC_A2>	1.17471E+01	0.0071773
C:2<BCC_A2>	8.22531E-02	0.0000503
Va:2<BCC_A2>	1.22745E+03	0.7499497
Phase total is	1.63670E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000107
Phase FCC_A1		
Cr:1<FCC_A1>	2.25811E+02	0.0811062
Fe:1<FCC_A1>	9.43073E+02	0.3387298
Mn:1<FCC_A1>	8.15319E+00	0.0029284
Mo:1<FCC_A1>	1.48448E+01	0.0053319
Ni:1<FCC_A1>	1.85233E+02	0.0665314
Si:1<FCC_A1>	1.49571E+01	0.0053722
C:2<FCC_A1>	7.50317E-01	0.0002695
Va:2<FCC_A1>	1.39132E+03	0.4997305
Phase total is	2.78415E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>		
Fe:1<M23C6>		
Mn:1<M23C6>		
Ni:1<M23C6>		

Cr:2<M23C6>

Fe:2<M23C6>

Mn:2<M23C6>

Mo:2<M23C6>

Ni:2<M23C6>

C:3<M23C6>

Notional activity

0.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.861440E+04	2.454251E		
-03	1.212420E+03	6.771000E+01			
C		-7.436208E+04	4.882925E-04	8.325701E	
-01	1.000000E-02				
Si		-1.626691E+05	5.706870E		
-08	2.670417E+01	7.500000E-01			
Cr		-5.463721E+04	3.689964E		
-03	3.288715E+02	1.710000E+01			
Ni		-8.148577E+04	2.352146E		
-04	2.027603E+02	1.190000E+01			
Mn		-1.197783E+05	4.637770E		
-06	9.647239E+00	5.300000E-01			
Mo		-7.131906E+04	6.670901E		
-04	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 414

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
(ignoring inaccuracies in data) = Errabs + Errrel * ni where

Errabs = 5.0E-06

Errrel = 1.6E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	22.21559	9.87942	43.98963
FCC_A1	77.78441	90.12058	56.01037

	Cr	Ni	Mn
BCC_A2	31.33748	8.64426	15.48681
FCC_A1	68.66252	91.35574	84.51319

	Mo
BCC_A2	28.78933
FCC_A1	71.21067

Amount	Phase	Mole fraction of component within phase		
compnt moles		Fe	C	Si

4.0926E+02	BCC_A2	0.6581327	0.0002010	0.0287033
1.3928E+03	FCC_A1	0.6770947	0.0005387	0.0107387

		Cr	Ni	Mn
4.0926E+02	BCC_A2	0.2518215	0.0428265	0.0036506
1.3928E+03	FCC_A1	0.1621250	0.1329911	0.0058537

		Mo
4.0926E+02	BCC_A2	0.0146644
1.3928E+03	FCC_A1	0.0106581

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
2.2418E+01	BCC_A2	0.6709767	0.0000441	0.0147166
7.7582E+01	FCC_A1	0.6788694	0.0001162	0.0054147

		Cr	Ni	Mn
2.2418E+01	BCC_A2	0.2390325	0.0458851	0.0036613
7.7582E+01	FCC_A1	0.1513411	0.1401276	0.0057735

		Mo
2.2418E+01	BCC_A2	0.0256837
7.7582E+01	FCC_A1	0.0183576

Gibbs Energy = -1.1260309621E+08 J System Enthalpy = 5.9087612779E+07 J

Temperature = 1273.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.037073E+02	-1.025326E+04	
2	2.819462E+02	-1.395234E+04	
3	1.734145E+00	-7.887483E+04	
4	6.568675E+00	-2.940965E+04	
5	2.179013E+01	-3.780978E+04	
6	1.163101E+01	-1.171888E+05	
7	9.045727E-02	-1.018949E+05	
8	1.282042E+03	-1.757573E+04	
9	1.000000E-12	-6.873677E+04	
10	1.000000E-12	-6.500478E+04	7.425509E+03
11	1.000000E-12	-8.308718E+04	5.426512E+04
12	1.000000E-12	-5.789243E+04	2.999469E+04
13	1.000000E-12	-6.019483E+04	3.609242E+04
14	1.000000E-12	-6.707726E+04	
15	2.251642E+02	-2.756170E+04	
16	9.304734E+02	-3.126077E+04	
17	7.913094E+00	-9.618326E+04	
18	1.427769E+01	-4.671808E+04	
19	1.809701E+02	-5.511821E+04	

20	1.507316E+01	-1.344973E+05	
21	7.421129E-01	-1.197380E+05	
22	1.373130E+03	-3.541876E+04	
23	2.978864E-11	-6.521738E+04	
24	1.000000E-12	-6.891717E+04	
25	1.000000E-12	-6.917294E+04	6.466528E+04
26	1.000000E-12	-5.502733E+04	3.774584E+04
27	1.000000E-12	-7.868958E+04	6.447015E+03
28	1.000000E-12	-6.955325E+04	1.928121E+04
29	1.000000E-12	-6.860300E+04	8.515347E+04
30	1.000000E-12	-6.668834E+04	3.760295E+04
31	1.000000E-12	-4.545487E+04	6.723655E+04
32	1.000000E-12	-6.579780E+04	
33			-6.668285E+04
34			-8.431813E+04
35			-1.699189E+05
36			-6.298499E+04
37			-9.053981E+04
38			-1.316049E+05
39			-8.213968E+04
40			-1.757678E+04
41			5.747438E+03
42			-3.542130E+04
43			7.444519E+02
44			6.173440E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-3.00560557575174E+07
CEMENTITE	-4.01844107677988E-07
FCC_A1	-9.74468133004838E+07
M23C6	-2.49520010804473E-06

	Amount mole	Mole fraction	Notional activity
Phase BCC_A2			
Cr:1<BCC_A2>	1.03707E+02	0.0606649	
Fe:1<BCC_A2>	2.81946E+02	0.1649281	
Mn:1<BCC_A2>	1.73414E+00	0.0010144	
Mo:1<BCC_A2>	6.56867E+00	0.0038424	
Ni:1<BCC_A2>	2.17901E+01	0.0127464	
Si:1<BCC_A2>	1.16310E+01	0.0068037	
C:2<BCC_A2>	9.04573E-02	0.0000529	
Va:2<BCC_A2>	1.28204E+03	0.7499471	
Phase total is	1.70951E+03	1.0000000	
Phase CEMENTITE			
Cr:1<CEMENTITE>			
Fe:1<CEMENTITE>			
Mn:1<CEMENTITE>			
Mo:1<CEMENTITE>			
Ni:1<CEMENTITE>			

C:2<CEMENTITE>		
Notional activity		0.0000057
Phase FCC_A1		
Cr:1<FCC_A1>	2.25164E+02	0.0819451
Fe:1<FCC_A1>	9.30473E+02	0.3386319
Mn:1<FCC_A1>	7.91309E+00	0.0028799
Mo:1<FCC_A1>	1.42777E+01	0.0051962
Ni:1<FCC_A1>	1.80970E+02	0.0658614
Si:1<FCC_A1>	1.50732E+01	0.0054857
C:2<FCC_A1>	7.42113E-01	0.0002701
Va:2<FCC_A1>	1.37313E+03	0.4997299
Phase total is	2.74774E+03	1.0000000

Phase M23C6		
Cr:1<M23C6>		
Fe:1<M23C6>		
Mn:1<M23C6>		
Ni:1<M23C6>		
Cr:2<M23C6>		
Fe:2<M23C6>		
Mn:2<M23C6>		
Mo:2<M23C6>		
Ni:2<M23C6>		
C:3<M23C6>		
Notional activity		0.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.668285E+04	1.836077E		
-03	1.212420E+03	6.771000E+01			
C		-8.431813E+04	3.469653E-04	8.325701E	
-01	1.000000E-02				
Si		-1.699189E+05	1.066460E		
-07	2.670417E+01	7.500000E-01			
Cr		-6.298499E+04	2.603877E		
-03	3.288715E+02	1.710000E+01			
Ni		-9.053981E+04	1.927524E		
-04	2.027603E+02	1.190000E+01			
Mn		-1.316049E+05	3.981366E		
-06	9.647239E+00	5.300000E-01			
Mo		-8.213968E+04	4.262568E		
-04	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 303

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 1.3E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	23.25484	10.86482	43.55503
FCC_A1	76.74516	89.13518	56.44497

	Cr	Ni	Mn
BCC_A2	31.53429	10.74675	17.97556
FCC_A1	68.46571	89.25325	82.02444

	Mo
BCC_A2	31.50993
FCC_A1	68.49007

Amount Phase Mole fraction of component within phase
compnt moles

		Fe	C	Si
4.2747E+02	BCC_A2	0.6595728	0.0002116	0.0272091
1.3746E+03	FCC_A1	0.6768981	0.0005399	0.0109654

		Cr	Ni	Mn
4.2747E+02	BCC_A2	0.2426083	0.0509749	0.0040568
1.3746E+03	FCC_A1	0.1638018	0.1316516	0.0057566

		Mo
4.2747E+02	BCC_A2	0.0153665
1.3746E+03	FCC_A1	0.0103867

Mass/kg Phase Mass fraction of component within phase

		Fe	C	Si
2.3470E+01	BCC_A2	0.6708842	0.0000463	0.0139181
7.6530E+01	FCC_A1	0.6790063	0.0001165	0.0055317

		Cr	Ni	Mn
2.3470E+01	BCC_A2	0.2297527	0.0544886	0.0040592
7.6530E+01	FCC_A1	0.1529816	0.1387845	0.0056805

		Mo
2.3470E+01	BCC_A2	0.0268509
7.6530E+01	FCC_A1	0.0178989

Gibbs Energy = -1.2750286906E+08 J System Enthalpy = 6.5457004558E+07 J

Temperature = 1373.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

Amount Gradient Lagrange multipliers
1 1.153320E+02 -1.258037E+04

2	3.298177E+02	-1.583176E+04	
3	2.195597E+00	-8.455355E+04	
4	7.796824E+00	-3.422893E+04	
5	3.002108E+01	-4.053038E+04	
6	1.243448E+01	-1.187305E+05	
7	1.145571E-01	-1.137395E+05	
8	1.492678E+03	-1.972389E+04	
9	1.000000E-12	-7.709929E+04	1.052119E+03
10	1.000000E-12	-7.255985E+04	8.842900E+03
11	1.000000E-12	-9.039291E+04	5.973165E+04
12	1.000000E-12	-6.624079E+04	3.355915E+04
13	1.000000E-12	-6.779490E+04	3.830649E+04
14	1.000000E-12	-7.481755E+04	
15	2.135395E+02	-3.205453E+04	
16	8.826020E+02	-3.530592E+04	
17	7.451642E+00	-1.040277E+05	
18	1.304954E+01	-5.370309E+04	
19	1.727392E+02	-6.000454E+04	
20	1.426969E+01	-1.382047E+05	
21	7.180131E-01	-1.337131E+05	
22	1.302933E+03	-3.969752E+04	
23	1.000000E-12	-7.220351E+04	
24	4.796867E-12	-7.545478E+04	
25	1.000000E-12	-7.469955E+04	6.947707E+04
26	1.000000E-12	-6.115992E+04	3.899353E+04
27	1.000000E-12	-8.690591E+04	2.436130E+04
28	1.000000E-12	-7.928978E+04	3.522877E+04
29	1.000000E-12	-7.588625E+04	1.073541E+05
30	1.000000E-12	-6.818505E+04	6.473069E+04
31	1.000000E-12	-5.349959E+04	8.571760E+04
32	1.000000E-12	-7.275332E+04	
33			-7.500341E+04
34			-9.401556E+04
35			-1.779022E+05
36			-7.175207E+04
37			-9.970205E+04
38			-1.437252E+05
39			-9.340061E+04
40			-1.972389E+04
41			6.399337E+03
42			-3.969752E+04
43			1.504677E+02
44			7.087415E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-3.92726119289329E+07
CEMENTITE	-4.48905296437606E-07
FCC_A1	-1.03638461225974E+08
M23C6	-9.28521763390604E-07

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.15332E+02	0.0579444
Fe:1<BCC_A2>	3.29818E+02	0.1657050
Mn:1<BCC_A2>	2.19560E+00	0.0011031
Mo:1<BCC_A2>	7.79682E+00	0.0039172
Ni:1<BCC_A2>	3.00211E+01	0.0150830
Si:1<BCC_A2>	1.24345E+01	0.0062473
C:2<BCC_A2>	1.14557E-01	0.0000576
Va:2<BCC_A2>	1.49268E+03	0.7499424
Phase total is	1.99039E+03	1.0000000
Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000041
Phase FCC_A1		
Cr:1<FCC_A1>	2.13539E+02	0.0819005
Fe:1<FCC_A1>	8.82602E+02	0.3385115
Mn:1<FCC_A1>	7.45164E+00	0.0028580
Mo:1<FCC_A1>	1.30495E+01	0.0050050
Ni:1<FCC_A1>	1.72739E+02	0.0662521
Si:1<FCC_A1>	1.42697E+01	0.0054730
C:2<FCC_A1>	7.18013E-01	0.0002754
Va:2<FCC_A1>	1.30293E+03	0.4997246
Phase total is	2.60730E+03	1.0000000
Phase M23C6		
Cr:1<M23C6>		
Fe:1<M23C6>		
Mn:1<M23C6>		
Ni:1<M23C6>		
Cr:2<M23C6>		
Fe:2<M23C6>		
Mn:2<M23C6>		
Mo:2<M23C6>		
Ni:2<M23C6>		
C:3<M23C6>		
Notional activity		0.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.500341E+04	1.401618E		
-03	1.212420E+03	6.771000E+01			
C		-9.401556E+04	2.650615E-04	8.325701E	

```

-01 1.000000E-02
Si -1.779022E+05 1.706199E
-07 2.670417E+01 7.500000E-01
Cr -7.175207E+04 1.863465E
-03 3.288715E+02 1.710000E+01
Ni -9.970205E+04 1.610698E
-04 2.027603E+02 1.190000E+01
Mn -1.437252E+05 3.405897E
-06 9.647239E+00 5.300000E-01
Mo -9.340061E+04 2.797315E
-04 2.084636E+01 2.000000E+00
Total
1.802082E+03 1.000000E+02

```

Number of Gibbs Energy evaluations in Stage 1 = 236
 Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 1.3E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	27.20326	13.75945	46.56382
FCC_A1	72.79674	86.24055	53.43618

	Cr	Ni	Mn
BCC_A2	35.06902	14.80619	22.75881
FCC_A1	64.93098	85.19381	77.24119

	Mo
BCC_A2	37.40136
FCC_A1	62.59864

Amount compnt moles	Phase	Mole fraction of component within phase		
		Fe	C	Si
4.9771E+02	BCC_A2	0.6626674	0.0002302	0.0249833
1.3044E+03	FCC_A1	0.6766503	0.0005505	0.0109399

		Cr	Ni	Mn
4.9771E+02	BCC_A2	0.2317243	0.0603181	0.0044114
1.3044E+03	FCC_A1	0.1637109	0.1324312	0.0057128

		Mo
4.9771E+02	BCC_A2	0.0156653
1.3044E+03	FCC_A1	0.0100045

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
2.7397E+01	BCC_A2	0.6723040	0.0000502	0.0127468

7.2603E+01 FCC_A1	0.6789098	0.0001188	0.0055201
	Cr	Ni	Mn
2.7397E+01 BCC_A2	0.2188828	0.0643106	0.0044027
7.2603E+01 FCC_A1	0.1529310	0.1396376	0.0056386

	Mo
2.7397E+01 BCC_A2	0.0273029
7.2603E+01 FCC_A1	0.0172442

Gibbs Energy = -1.4291107315E+08 J System Enthalpy = 7.2038138823E+07 J

Temperature = 1473.0000 K

Fixed pressure = 1.013250E+05 Pa, 1.000000E+00 atm

	Amount	Gradient	Lagrange multipliers
1	1.402383E+02	-1.514027E+04	
2	4.250012E+02	-1.775064E+04	
3	3.016031E+00	-9.034361E+04	
4	9.872976E+00	-3.937255E+04	
5	4.523352E+01	-4.309948E+04	
6	1.422604E+01	-1.207263E+05	
7	1.654978E-01	-1.253072E+05	
8	1.912599E+03	-2.194174E+04	
9	1.000000E-12	-8.405237E+04	3.734673E+03
10	1.000000E-12	-8.104491E+04	9.352501E+03
11	1.000000E-12	-9.851901E+04	6.447137E+04
12	1.000000E-12	-7.489951E+04	3.711981E+04
13	1.000000E-12	-7.598826E+04	3.975798E+04
14	1.000000E-12	-8.290081E+04	
15	1.886331E+02	-3.684211E+04	
16	7.874184E+02	-3.945248E+04	
17	6.631208E+00	-1.120454E+05	
18	1.097339E+01	-6.107438E+04	
19	1.575267E+02	-6.480131E+04	
20	1.247813E+01	-1.424282E+05	
21	6.670723E-01	-1.474889E+05	
22	1.162994E+03	-4.412338E+04	
23	1.000000E-12	-7.957489E+04	
24	1.627405E-11	-8.218524E+04	
25	1.000000E-12	-8.040856E+04	7.436966E+04
26	1.000000E-12	-6.739216E+04	4.014192E+04
27	1.000000E-12	-9.545406E+04	4.152394E+04
28	1.000000E-12	-8.933199E+04	5.025637E+04
29	1.000000E-12	-8.348561E+04	1.286957E+05
30	1.000000E-12	-6.974321E+04	9.146706E+04
31	1.000000E-12	-6.195802E+04	1.029792E+05

32	1.000000E-12	-7.999458E+04
33		-8.357585E+04
34		-1.033655E+05
35		-1.865516E+05
36		-8.096549E+04
37		-1.089247E+05
38		-1.561688E+05
39		-1.051978E+05
40		-2.194174E+04
41		6.821553E+03
42		-4.412338E+04
43		-4.635363E+02
44		7.790297E+03

Gibbs/Helmholtz Energy contributions per phase

BCC_A2	-5.59819756016209E+07
CEMENTITE	-4.97404867851064E-07
FCC_A1	-1.02827227167139E+08
M23C6	-1.87075306144159E-06

	Amount mole	Mole fraction Notional activity
Phase BCC_A2		
Cr:1<BCC_A2>	1.40238E+02	0.0549878
Fe:1<BCC_A2>	4.25001E+02	0.1666441
Mn:1<BCC_A2>	3.01603E+00	0.0011826
Mo:1<BCC_A2>	9.87298E+00	0.0038712
Ni:1<BCC_A2>	4.52335E+01	0.0177362
Si:1<BCC_A2>	1.42260E+01	0.0055781
C:2<BCC_A2>	1.65498E-01	0.0000649
Va:2<BCC_A2>	1.91260E+03	0.7499351
Phase total is	2.55035E+03	1.0000000

Phase CEMENTITE		
Cr:1<CEMENTITE>		
Fe:1<CEMENTITE>		
Mn:1<CEMENTITE>		
Mo:1<CEMENTITE>		
Ni:1<CEMENTITE>		
C:2<CEMENTITE>		
Notional activity		0.0000033
Phase FCC_A1		
Cr:1<FCC_A1>	1.88633E+02	0.0810516
Fe:1<FCC_A1>	7.87418E+02	0.3383367
Mn:1<FCC_A1>	6.63121E+00	0.0028493
Mo:1<FCC_A1>	1.09734E+01	0.0047150
Ni:1<FCC_A1>	1.57527E+02	0.0676858
Si:1<FCC_A1>	1.24781E+01	0.0053616

C:2<FCC_A1>	6.67072E-01	0.0002866
Va:2<FCC_A1>	1.16299E+03	0.4997134
Phase total is	2.32732E+03	1.0000000

Phase M23C6

Cr:1<M23C6>
 Fe:1<M23C6>
 Mn:1<M23C6>
 Ni:1<M23C6>
 Cr:2<M23C6>
 Fe:2<M23C6>
 Mn:2<M23C6>
 Mo:2<M23C6>
 Ni:2<M23C6>
 C:3<M23C6>

Notional activity 0.0000000

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.357585E+04	1.087322E		
-03	1.212420E+03	6.771000E+01			
C		-1.033655E+05	2.160769E-04	8.325701E	
-01	1.000000E-02				
Si		-1.865516E+05	2.425424E		
-07	2.670417E+01	7.500000E-01			
Cr		-8.096549E+04	1.345621E		
-03	3.288715E+02	1.710000E+01			
Ni		-1.089247E+05	1.372383E		
-04	2.027603E+02	1.190000E+01			
Mn		-1.561688E+05	2.898509E		
-06	9.647239E+00	5.300000E-01			
Mo		-1.051978E+05	1.860520E		
-04	2.084636E+01	2.000000E+00			
Total					
1.802082E+03	1.000000E+02				

Number of Gibbs Energy evaluations in Stage 1 = 261

Estimate of Stage 1* calculational inaccuracy in species mole amount ni
 (ignoring inaccuracies in data) = Errabs + Errrel * ni where
 Errabs = 5.0E-06
 Errrel = 1.3E-05

Percentage distribution of components between phases

	Fe	C	Si
BCC_A2	35.05397	19.87794	53.27274
FCC_A1	64.94603	80.12206	46.72726
	Cr	Ni	Mn
BCC_A2	42.64229	22.30887	31.26315
FCC_A1	57.35771	77.69113	68.73685

	Mo
BCC_A2	47.36067
FCC_A1	52.63933

Amount compnt	Phase moles	Mole fraction of component within phase		
		Fe	C	Si
6.3775E+02	BCC_A2	0.6664035	0.0002595	0.0223065
1.1643E+03	FCC_A1	0.6762857	0.0005729	0.0107170
		Cr	Ni	Mn
6.3775E+02	BCC_A2	0.2198942	0.0709263	0.0047291
1.1643E+03	FCC_A1	0.1620103	0.1352941	0.0056953
		Mo		
6.3775E+02	BCC_A2	0.0154809		
1.1643E+03	FCC_A1	0.0094247		

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	C	Si
3.5196E+01	BCC_A2	0.6743662	0.0000565	0.0113520
6.4804E+01	FCC_A1	0.6785847	0.0001236	0.0054079
		Cr	Ni	Mn
3.5196E+01	BCC_A2	0.2071774	0.0754276	0.0047078
6.4804E+01	FCC_A1	0.1513514	0.1426649	0.0056217
		Mo		
3.5196E+01	BCC_A2	0.0269125		
6.4804E+01	FCC_A1	0.0162457		

Gibbs Energy = -1.5880920277E+08 J System Enthalpy = 7.8924030570E+07 J