B. 0,024C-0,020N-0,64Mn-0,21Cr-0,35Si-0,40Mo-(0...10)Ni-bal.Fe

****
0 Ni

     573.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   573.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-1.370171E+04	5.636178E-02	1.998168E+00	2.400000E-02
Si		-1.548646E+05	7.636735E-15	1.246195E+01	3.500000E-01
Mn		-3.378129E+04	8.328705E-04	1.164950E+01	6.400000E-01
Cr		-3.169151E+04	1.291447E-03	4.038772E+00	2.100000E-01
Mo		-2.448658E+04	5.859515E-03	4.169272E+00	4.000000E-01
Ni		undef	undef	2.000000E-12	1.173800E-13
N		-1.071628E+05	1.703294E-10	1.427888E+00	2.000000E-02
Fe		-1.836323E+04	2.118613E-02	1.761169E+03	9.835600E+01
Total				1.796914E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7887E+03	BCC_A2	0.0000000	0.0069670	0.0065048
8.2093E+00	FCC_A1	0.2434013	0.0000000	0.0017419
		Cr	Mo	Ni
1.7887E+03	BCC_A2	0.0011806	0.0007454	0.0000000
8.2093E+00	FCC_A1	0.2347276	0.3454690	0.0000000
		N	Fe	

```
 1.7887E+03 BCC_A2             0.0000000       0.9846022
 8.2093E+00 FCC_A1             0.1739354       0.0007249

Gibbs Energy = -3.5074881103E+07 J   System Enthalpy =  1.2203063222E+07 J
     623.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -9.227824E+03 1.683931E
-01 1.998168E+00 2.400000E-02
Si                           -1.571902E+05 6.621002E
-14 1.246195E+01 3.500000E-01
Mn                           -3.986828E+04 4.543384E
-04 1.164950E+01 6.400000E-01
Cr                           -4.009292E+04 4.350559E
-04 4.038772E+00 2.100000E-01
Mo                           -2.490478E+04 8.164749E
-03 4.169272E+00 4.000000E-01
Ni                           undef        undef         3.000000E
-12 1.760700E-13
N                            -1.118713E+05 4.173748E
-10 1.427888E+00 2.000000E-02
Fe                           -2.070194E+04 1.837875E
-02 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7866E+03 BCC_A2             0.0000001       0.0069752       0.0052538
 3.3953E+00 FCC_A1             0.0788794       0.0000000       0.0000032
 6.9204E+00 CEMENTITE          0.2500000       0.0000000       0.3270162

                                 Cr              Mo              Ni
 1.7866E+03 BCC_A2             0.0006449       0.0021466       0.0000000
 3.3953E+00 FCC_A1             0.4167353       0.0837772       0.0000000
 6.9204E+00 CEMENTITE          0.2126573       0.0071896       0.0000000

                                 N               Fe
 1.7866E+03 BCC_A2             0.0000000       0.9849793
 3.3953E+00 FCC_A1             0.4205541       0.0000508
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 6.9204E+00 CEMENTITE          0.0000000       0.2031369

Gibbs Energy = -3.9327144928E+07 J   System Enthalpy =  1.5066256576E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   673.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -7.792569E+03 2.484265E
-01 1.998168E+00 2.400000E-02
Si                           -1.600723E+05 3.770160E
-13 1.246195E+01 3.500000E-01
Mn                           -4.396611E+04 3.869665E
-04 1.164950E+01 6.400000E-01
Cr                           -4.250886E+04 5.020810E
-04 4.038772E+00 2.100000E-01
Mo                           -3.423415E+04 2.202907E
-03 4.169272E+00 4.000000E-01
Ni                           undef        undef         2.000000E
-12 1.173800E-13
N                            -1.077620E+05 4.328188E
-09 1.427888E+00 2.000000E-02
Fe                           -2.317867E+04 1.588699E
-02 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7893E+03 BCC_A2              0.0000011       0.0069646       0.0065079
 7.5922E+00 FCC_A1              0.2629386       0.0000000       0.0006225

                                 Cr              Mo              Ni
 1.7893E+03 BCC_A2              0.0011679       0.0011023       0.0000000
 7.5922E+00 FCC_A1              0.2567105       0.2893530       0.0000000

                                 N               Fe
 1.7893E+03 BCC_A2              0.0000000       0.9842561
 7.5922E+00 FCC_A1              0.1880700       0.0023053

Gibbs Energy = -4.3805089920E+07 J   System Enthalpy =  1.8101220973E+07 J
     723.000
```

*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-7.227285E+03	3.005128E-01	1.998168E+00	2.400000E-02
Si		-1.627131E+05	1.756911E-12	1.246195E+01	3.500000E-01
Mn		-5.011809E+04	2.394449E-04	1.164950E+01	6.400000E-01
Cr		-4.910782E+04	2.832651E-04	4.038772E+00	2.100000E-01
Mo		-3.626609E+04	2.398541E-03	4.169272E+00	4.000000E-01
Ni		undef	undef	3.000000E-12	1.760700E-13
N		-1.106757E+05	1.009738E-08	1.427888E+00	2.000000E-02
Fe		-2.577290E+04	1.374139E-02	1.761169E+03	9.835600E+01
Total				1.796914E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7867E+03	BCC_A2	0.0000052	0.0069748	0.0057433
3.4757E+00	FCC_A1	0.0885173	0.0000000	0.0000154
6.7247E+00	CEMENTITE	0.2500000	0.0000000	0.2063789
		Cr	Mo	Ni
1.7867E+03	BCC_A2	0.0009789	0.0021233	0.0000000
3.4757E+00	FCC_A1	0.4146746	0.0858245	0.0000000
6.7247E+00	CEMENTITE	0.1261710	0.0114950	0.0000000
		N	Fe	
1.7867E+03	BCC_A2	0.0000000	0.9841745	
3.4757E+00	FCC_A1	0.4108043	0.0001640	
6.7247E+00	CEMENTITE	0.0000000	0.4059551	

Gibbs Energy = -4.8524970294E+07 J   System Enthalpy = 2.1293228605E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   773.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-7.453372E+03	3.135878E-01	1.998168E+00	2.400000E-02
Si		-1.656757E+05	6.381515E-12	1.246195E+01	3.500000E-01
Mn		-5.561999E+04	1.744352E-04	1.164950E+01	6.400000E-01
Cr		-5.407776E+04	2.217410E-04	4.038772E+00	2.100000E-01
Mo		-4.208515E+04	1.432890E-03	4.169272E+00	4.000000E-01
Ni		undef	undef	3.000000E-12	1.760700E-13
N		-1.096691E+05	3.885239E-08	1.427888E+00	2.000000E-02
Fe		-2.850051E+04	1.186198E-02	1.761169E+03	9.835600E+01
Total				1.796914E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase			compnt moles
		C	Si	Mn	
1.7867E+03	BCC_A2	0.0000185	0.0069747	0.0059238	
3.3977E+00	FCC_A1	0.0792691	0.0000000	0.0000300	
6.7835E+00	CEMENTITE	0.2500000	0.0000000	0.1570141	
		Cr	Mo	Ni	
1.7867E+03	BCC_A2	0.0011090	0.0021279	0.0000000	
3.3977E+00	FCC_A1	0.4169087	0.0834566	0.0000000	
6.7835E+00	CEMENTITE	0.0944592	0.0123365	0.0000000	
		N	Fe		
1.7867E+03	BCC_A2	0.0000002	0.9838458		
3.3977E+00	FCC_A1	0.4201240	0.0002116		
6.7835E+00	CEMENTITE	0.0000000	0.4861902		

Gibbs Energy = -5.3465883866E+07 J   System Enthalpy = 2.4653809634E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   823.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -8.264286E+03 2.988758E
-01 1.998168E+00 2.400000E-02
Si   -1.687715E+05 1.943496E
-11 1.246195E+01 3.500000E-01
Mn   -6.138420E+04 1.270956E
-04 1.164950E+01 6.400000E-01
Cr   -5.928613E+04 1.726984E
-04 4.038772E+00 2.100000E-01
Mo   -4.800319E+04 8.982199E
-04 4.169272E+00 4.000000E-01
Ni   undef   undef   3.000000E
-12 1.760700E-13
N   -1.085343E+05 1.293166E
-07 1.427888E+00 2.000000E-02
Fe   -3.134434E+04 1.024872E
-02 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7869E+03 BCC_A2   0.0000518   0.0069741   0.0060723
 3.2956E+00 FCC_A1   0.0668292   0.0000000   0.0000545
 6.7417E+00 CEMENTITE   0.2500000   0.0000000   0.1184921

                                Cr   Mo   Ni
 1.7869E+03 BCC_A2   0.0012161   0.0021374   0.0000000
 3.2956E+00 FCC_A1   0.4192764   0.0809582   0.0000000
 6.7417E+00 CEMENTITE   0.0717827   0.0123425   0.0000000

                                N   Fe
 1.7869E+03 BCC_A2   0.0000012   0.9835471
 3.2956E+00 FCC_A1   0.4326373   0.0002444
 6.7417E+00 CEMENTITE   0.0000000   0.5473827

Gibbs Energy = -5.8630539770E+07 J   System Enthalpy = 2.8216839045E+07 J
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -9.480715E+03 2.708632E
-01 1.998168E+00 2.400000E-02
Si                           -1.720170E+05 5.103630E
-11 1.246195E+01 3.500000E-01
Mn                           -6.744404E+04 9.219111E
-05 1.164950E+01 6.400000E-01
Cr                           -6.468935E+04 1.347434E
-04 4.038772E+00 2.100000E-01
Mo                           -5.403674E+04 5.846211E
-04 4.169272E+00 4.000000E-01
Ni                           undef        undef         3.000000E
-12 1.760700E-13
N                            -1.073680E+05 3.766702E
-07 1.427888E+00 2.000000E-02
Fe                           -3.431294E+04 8.850924E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7873E+03 BCC_A2              0.0001229       0.0069725       0.0061975
 3.1892E+00 FCC_A1              0.0544730       0.0000000       0.0000918
 6.4191E+00 CEMENTITE           0.2500000       0.0000000       0.0891685

                                 Cr              Mo              Ni
 1.7873E+03 BCC_A2              0.0013082       0.0021490       0.0000000
 3.1892E+00 FCC_A1              0.4210237       0.0790919       0.0000000
 6.4191E+00 CEMENTITE           0.0557622       0.0118455       0.0000000

                                 N               Fe
 1.7873E+03 BCC_A2              0.0000048       0.9832451
 3.1892E+00 FCC_A1              0.4450482       0.0002714
 6.4191E+00 CEMENTITE           0.0000000       0.5932238

Gibbs Energy = -6.4018841473E+07 J   System Enthalpy =  3.2025107871E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K
```

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-1.096886E+04	2.394768E-01	1.998168E+00	2.400000E-02
Si		-1.754237E+05	1.182026E-10	1.246195E+01	3.500000E-01
Mn		-7.383763E+04	6.629312E-05	1.164950E+01	6.400000E-01
Cr		-7.023711E+04	1.059801E-04	4.038772E+00	2.100000E-01
Mo		-6.018962E+04	3.924825E-04	4.169272E+00	4.000000E-01
Ni		undef	undef	3.000000E-12	1.760700E-13
N		-1.062358E+05	9.728088E-07	1.427888E+00	2.000000E-02
Fe		-3.740527E+04	7.641973E-03	1.761169E+03	9.835600E+01
Total				1.796914E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase			
compnt moles					
		C	Si	Mn	
1.7882E+03	BCC_A2	0.0002582	0.0069688	0.0063046	
3.0674E+00	FCC_A1	0.0437628	0.0000000	0.0001423	
5.6085E+00	CEMENTITE	0.2500000	0.0000000	0.0668565	
		Cr	Mo	Ni	
1.7882E+03	BCC_A2	0.0013953	0.0021629	0.0000000	
3.0674E+00	FCC_A1	0.4220458	0.0779525	0.0000000	
5.6085E+00	CEMENTITE	0.0444068	0.0111065	0.0000000	
		N	Fe		
1.7882E+03	BCC_A2	0.0000166	0.9828934		
3.0674E+00	FCC_A1	0.4557948	0.0003017		
5.6085E+00	CEMENTITE	0.0000000	0.6276302		

Gibbs Energy = -6.9633658371E+07 J   System Enthalpy = 3.6140852075E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   973.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -1.339253E+04 1.910083E
-01 1.998168E+00 2.400000E-02
Si                           -1.789004E+05 2.489606E
-10 1.246195E+01 3.500000E-01
Mn                           -8.121251E+04 4.368062E
-05 1.164950E+01 6.400000E-01
Cr                           -7.304166E+04 1.199284E
-04 4.038772E+00 2.100000E-01
Mo                           -6.593756E+04 2.885958E
-04 4.169272E+00 4.000000E-01
Ni                           undef        undef         2.000000E
-12 1.173800E-13
N                            -8.689972E+04 2.162636E
-05 1.427888E+00 2.000000E-02
Fe                           -4.063359E+04 6.586832E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7492E+03 BCC_A2              0.0004566       0.0070164       0.0059858
 4.7714E+01 FCC_A1              0.0251377       0.0039578       0.0247107

                                 Cr              Mo              Ni
 1.7492E+03 BCC_A2              0.0021421       0.0023196       0.0000000
 4.7714E+01 FCC_A1              0.0061153       0.0023436       0.0000000

                                 N               Fe
 1.7492E+03 BCC_A2              0.0004927       0.9815867
 4.7714E+01 FCC_A1              0.0118637       0.9258713

Gibbs Energy = -7.5460782365E+07 J   System Enthalpy =  4.1031564128E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1023.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -2.187703E+04 7.638030E
-02 1.998168E+00 2.400000E-02
```

```
Si                          -1.826679E+05 4.711599E
-10 1.246195E+01 3.500000E-01
Mn                          -8.871606E+04 2.952906E
-05 1.164950E+01 6.400000E-01
Cr                          -7.907614E+04 9.171794E
-05 4.038772E+00 2.100000E-01
Mo                          -7.225463E+04 2.045283E
-04 4.169272E+00 4.000000E-01
Ni                          undef        undef         2.000000E
-12 1.173800E-13
N                           -9.426129E+04 1.538565E
-05 1.427888E+00 2.000000E-02
Fe                          -4.398508E+04 5.677636E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7058E+03 BCC_A2             0.0003711       0.0070619       0.0059148
 9.1139E+01 FCC_A1             0.0149785       0.0045630       0.0171181

                                Cr              Mo              Ni
 1.7058E+03 BCC_A2             0.0021511       0.0023424       0.0000000
 9.1139E+01 FCC_A1             0.0040541       0.0019053       0.0000000

                                N               Fe
 1.7058E+03 BCC_A2             0.0004496       0.9817090
 9.1139E+01 FCC_A1             0.0072525       0.9501286

Gibbs Energy = -8.1571341878E+07 J   System Enthalpy =  4.6050318722E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -3.179611E+04 2.832532E
-02 1.998168E+00 2.400000E-02
Si                          -1.862534E+05 8.575147E
-10 1.246195E+01 3.500000E-01
Mn                          -9.614405E+04 2.088027E
-05 1.164950E+01 6.400000E-01
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Cr                          -8.518368E+04 7.133186E
-05 4.038772E+00 2.100000E-01
Mo                          -7.847903E+04 1.512392E
-04 4.169272E+00 4.000000E-01
Ni                          undef        undef         2.000000E
-12 1.173800E-13
N                           -1.028592E+05 9.836630E
-06 1.427888E+00 2.000000E-02
Fe                          -4.746798E+04 4.889593E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.5984E+03 BCC_A2              0.0002632       0.0071694       0.0056938
 1.9855E+02 FCC_A1              0.0079451       0.0050495       0.0128372

                                 Cr              Mo              Ni
 1.5984E+03 BCC_A2              0.0021407       0.0023941       0.0000000
 1.9855E+02 FCC_A1              0.0031082       0.0017256       0.0000000

                                 N               Fe
 1.5984E+03 BCC_A2              0.0003614       0.9819774
 1.9855E+02 FCC_A1              0.0042824       0.9650520

Gibbs Energy = -8.7922790648E+07 J   System Enthalpy =  5.0638377753E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1123.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.427706E+04 8.721112E
-03 1.998168E+00 2.400000E-02
Si                          -1.893933E+05 1.551954E
-09 1.246195E+01 3.500000E-01
Mn                          -1.039845E+05 1.456930E
-05 1.164950E+01 6.400000E-01
Cr                          -9.140487E+04 5.604652E
-05 4.038772E+00 2.100000E-01
Mo                          -8.422998E+04 1.208563E
-04 4.169272E+00 4.000000E-01
```

```
Ni                            undef        undef         2.000000E
-12 1.173800E-13
N                             -1.137877E+05 5.098849E
-06 1.427888E+00 2.000000E-02
Fe                            -5.106819E+04 4.214059E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.2555E+03 BCC_A2              0.0001468       0.0074930       0.0050851
 5.4146E+02 FCC_A1              0.0033500       0.0056418       0.0097243

                                 Cr              Mo              Ni
 1.2555E+03 BCC_A2              0.0021040       0.0025698       0.0000000
 5.4146E+02 FCC_A1              0.0025805       0.0017416       0.0000000

                                 N               Fe
 1.2555E+03 BCC_A2              0.0002309       0.9823703
 5.4146E+02 FCC_A1              0.0021017       0.9748601

Gibbs Energy = -9.4478308486E+07 J   System Enthalpy =  5.4961503955E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1173.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                             -5.961215E+04 2.215590E
-03 1.998168E+00 2.400000E-02
Si                            -1.910290E+05 3.115567E
-09 1.246194E+01 3.499998E-01
Mn                            -1.136360E+05 8.706127E
-06 1.164949E+01 6.399998E-01
Cr                            -9.786736E+04 4.385276E
-05 4.038771E+00 2.099999E-01
Mo                            -8.763236E+04 1.252444E
-04 4.169270E+00 3.999997E-01
Ni                            undef        undef         1.000000E
-12 5.869000E-14
N                             -1.277924E+05 2.039137E
-06 1.427888E+00 2.000000E-02
```

```
Fe                            -5.477527E+04 3.638100E
-03 1.761168E+03 9.835596E+01
Total
1.796914E+03 9.999996E+01

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7969E+03 FCC_A1              0.0011120       0.0069352       0.0064831

                                 Cr              Mo              Ni
 1.7969E+03 FCC_A1              0.0022476       0.0023202       0.0000000

                                 N               Fe
 1.7969E+03 FCC_A1              0.0007946       0.9801073

Gibbs Energy = -1.0123501531E+08 J   System Enthalpy =  5.9764772622E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                             -6.461928E+04 1.738456E
-03 1.998168E+00 2.400000E-02
Si                            -1.948030E+05 4.787695E
-09 1.246195E+01 3.500000E-01
Mn                            -1.196115E+05 7.789180E
-06 1.164950E+01 6.400000E-01
Cr                            -1.038670E+05 3.663769E
-05 4.038772E+00 2.100000E-01
Mo                            -9.427468E+04 9.410355E
-05 4.169272E+00 4.000000E-01
Ni                            undef        undef         1.000000E
-12 5.869000E-14
N                             -1.330815E+05 2.071081E
-06 1.427888E+00 2.000000E-02
Fe                            -5.860297E+04 3.141343E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
```

```
                                C               Si              Mn
 1.7969E+03 FCC_A1             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.0816189943E+08 J   System Enthalpy =  6.2823551152E+07 J
     1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1273.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -6.967271E+04 1.384242E
-03 1.998168E+00 2.400000E-02
Si                           -1.986321E+05 7.076103E
-09 1.246195E+01 3.500000E-01
Mn                           -1.256688E+05 6.975891E
-06 1.164950E+01 6.400000E-01
Cr                           -1.099391E+05 3.083283E
-05 4.038772E+00 2.100000E-01
Mo                           -1.009756E+05 7.191204E
-05 4.169272E+00 4.000000E-01
Ni                           undef        undef         1.000000E
-12 5.869000E-14
N                            -1.384818E+05 2.079027E
-06 1.427888E+00 2.000000E-02
Fe                           -6.250001E+04 2.725962E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7969E+03 FCC_A1             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
```

```
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.1521464503E+08 J   System Enthalpy =  6.5920736228E+07 J
     1323.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1323.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.477210E+04 1.116671E
-03 1.998168E+00 2.400000E-02
Si                          -2.025165E+05 1.010305E
-08 1.246195E+01 3.500000E-01
Mn                          -1.317967E+05 6.259485E
-06 1.164950E+01 6.400000E-01
Cr                          -1.160809E+05 2.612240E
-05 4.038772E+00 2.100000E-01
Mo                          -1.077353E+05 5.578358E
-05 4.169272E+00 4.000000E-01
Ni                          undef        undef         1.000000E
-12 5.869000E-14
N                           -1.439901E+05 2.066012E
-06 1.427888E+00 2.000000E-02
Fe                          -6.646587E+04 2.376091E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7969E+03 FCC_A1             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.2238981681E+08 J   System Enthalpy =  6.9056406641E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1373.0000 K
```

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.991251E+04 9.117421E
-04 1.998168E+00 2.400000E-02
Si                          -2.064532E+05 1.399135E
-08 1.246195E+01 3.500000E-01
Mn                          -1.380200E+05 5.614069E
-06 1.164950E+01 6.400000E-01
Cr                          -1.222976E+05 2.225389E
-05 4.038772E+00 2.100000E-01
Mo                          -1.145567E+05 4.384274E
-05 4.169272E+00 4.000000E-01
Ni                          undef        undef         1.000000E
-12 5.869000E-14
N                           -1.495969E+05 2.036357E
-06 1.427888E+00 2.000000E-02
Fe                          -7.049907E+04 2.079646E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7969E+03 FCC_A1              0.0011120       0.0069352       0.0064831

                                 Cr              Mo              Ni
 1.7969E+03 FCC_A1              0.0022476       0.0023202       0.0000000

                                 N               Fe
 1.7969E+03 FCC_A1              0.0007946       0.9801073

Gibbs Energy = -1.2968424251E+08 J   System Enthalpy =  7.2230653543E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -8.510025E+04 7.520892E
-04 1.998168E+00 2.400000E-02
Si                          -2.104442E+05 1.885103E
```

-08 1.246195E+01 3.500000E-01
Mn   -1.442891E+05 5.054236E
-06 1.164950E+01 6.400000E-01
Cr   -1.285776E+05 1.907072E
-05 4.038772E+00 2.100000E-01
Mo   -1.214274E+05 3.490014E
-05 4.169272E+00 4.000000E-01
Ni   undef   undef   1.000000E
-12 5.869000E-14
N   -1.553098E+05 1.991244E
-06 1.427888E+00 2.000000E-02
Fe   -7.459493E+04 1.827606E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7969E+03 FCC_A1   0.0011120   0.0069352   0.0064831

                                Cr   Mo   Ni
 1.7969E+03 FCC_A1   0.0022476   0.0023202   0.0000000

                                N   Fe
 1.7969E+03 FCC_A1   0.0007946   0.9801073

Gibbs Energy = -1.3709498462E+08 J   System Enthalpy = 7.5443579044E+07 J
     1473.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1473.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -9.032861E+04 6.264723E
-04 1.998168E+00 2.400000E-02
Si   -2.144764E+05 2.480612E
-08 1.246195E+01 3.500000E-01
Mn   -1.506425E+05 4.551366E
-06 1.164950E+01 6.400000E-01
Cr   -1.349278E+05 1.642072E
-05 4.038772E+00 2.100000E-01
Mo   -1.283538E+05 2.808719E
-05 4.169272E+00 4.000000E-01

```
Ni                            undef        undef         1.000000E
-12 5.869000E-14
N                             -1.611180E+05 1.934973E
-06 1.427888E+00 2.000000E-02
Fe                            -7.875509E+04 1.611777E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7969E+03 FCC_A1              0.0011120       0.0069352       0.0064831

                                 Cr              Mo              Ni
 1.7969E+03 FCC_A1              0.0022476       0.0023202       0.0000000

                                 N               Fe
 1.7969E+03 FCC_A1              0.0007946       0.9801073

Gibbs Energy = -1.4461931594E+08 J   System Enthalpy =  7.8695294371E+07 J
     1523.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1523.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                             -9.559730E+04 5.264566E
-04 1.998168E+00 2.400000E-02
Si                            -2.185619E+05 3.192486E
-08 1.246195E+01 3.500000E-01
Mn                            -1.570693E+05 4.102974E
-06 1.164950E+01 6.400000E-01
Cr                            -1.413477E+05 1.420012E
-05 4.038772E+00 2.100000E-01
Mo                            -1.353318E+05 2.283581E
-05 4.169272E+00 4.000000E-01
Ni                            undef        undef         1.000000E
-12 5.869000E-14
N                             -1.670184E+05 1.870165E
-06 1.427888E+00 2.000000E-02
Fe                            -8.297832E+04 1.426092E
-03 1.761169E+03 9.835600E+01
Total
```

1.796914E+03 1.000000E+02

Amount Phase Mole fraction of component within phase
compnt moles
C Si Mn
1.7969E+03 FCC_A1 0.0011120 0.0069352 0.0064831

Cr Mo Ni
1.7969E+03 FCC_A1 0.0022476 0.0023202 0.0000000

N Fe
1.7969E+03 FCC_A1 0.0007946 0.9801073

Gibbs Energy = -1.5225469859E+08 J System Enthalpy = 8.1985920513E+07 J
1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1573.0000 K

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

Component Ref.Phase Chem.Pot. Activity Amount/mol Mass/kg
C -1.009029E+05 4.460669E
-04 1.998168E+00 2.400000E-02
Si -2.226920E+05 4.029477E
-08 1.246195E+01 3.500000E-01
Mn -1.635679E+05 3.702844E
-06 1.164950E+01 6.400000E-01
Cr -1.478376E+05 1.232757E
-05 4.038772E+00 2.100000E-01
Mo -1.423695E+05 1.872626E
-05 4.169272E+00 4.000000E-01
Ni undef undef 1.000000E
-12 5.869000E-14
N -1.730081E+05 1.799121E
-06 1.427888E+00 2.000000E-02
Fe -8.725914E+04 1.266069E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount Phase Mole fraction of component within phase
compnt moles
C Si Mn
1.7969E+03 FCC_A1 0.0011120 0.0069352 0.0064831

```
                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.5999876890E+08 J   System Enthalpy =  8.5315895215E+07 J
     1623.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.062510E+05 3.806299E
-04 1.998168E+00 2.400000E-02
Si                          -2.268645E+05 4.997777E
-08 1.246195E+01 3.500000E-01
Mn                          -1.701283E+05 3.347553E
-06 1.164950E+01 6.400000E-01
Cr                          -1.543858E+05 1.074912E
-05 4.038772E+00 2.100000E-01
Mo                          -1.494534E+05 1.549222E
-05 4.169272E+00 4.000000E-01
Ni                          undef        undef         1.000000E
-12 5.869000E-14
N                           -1.790896E+05 1.723162E
-06 1.427888E+00 2.000000E-02
Fe                          -9.160273E+04 1.127020E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7969E+03 FCC_A1             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.6784932668E+08 J   System Enthalpy =  8.8685384228E+07 J
```

```
     1673.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1673.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.116318E+05 3.271169E
-04 1.998168E+00 2.400000E-02
Si                          -2.310912E+05 6.095647E
-08 1.246195E+01 3.500000E-01
Mn                          -1.767723E+05 3.026419E
-06 1.164950E+01 6.400000E-01
Cr                          -1.610151E+05 9.394876E
-06 4.038772E+00 2.100000E-01
Mo                          -1.565842E+05 1.291899E
-05 4.169272E+00 4.000000E-01
Ni                          undef        undef         1.000000E
-12 5.869000E-14
N                           -1.852512E+05 1.645150E
-06 1.427888E+00 2.000000E-02
Fe                          -9.600089E+04 1.006288E
-03 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7969E+03 FCC_A1             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 FCC_A1             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 FCC_A1             0.0007946       0.9801073

Gibbs Energy = -1.7580430678E+08 J   System Enthalpy =  9.2094319062E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1723.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -1.062491E+05 6.012060E
-04 1.998168E+00 2.400000E-02
Si                           -2.362958E+05 6.864568E
-08 1.246195E+01 3.500000E-01
Mn                           -1.823318E+05 2.968599E
-06 1.164950E+01 6.400000E-01
Cr                           -1.685692E+05 7.758333E
-06 4.038772E+00 2.100000E-01
Mo                           -1.668616E+05 8.740445E
-06 4.169272E+00 4.000000E-01
Ni                           undef        undef         1.000000E
-12 5.869000E-14
N                            -1.824445E+05 2.945328E
-06 1.427888E+00 2.000000E-02
Fe                           -1.004879E+05 8.988275E
-04 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7969E+03 BCC_A2              0.0011120       0.0069352       0.0064831

                                 Cr              Mo              Ni
 1.7969E+03 BCC_A2              0.0022476       0.0023202       0.0000000

                                 N               Fe
 1.7969E+03 BCC_A2              0.0007946       0.9801073

Gibbs Energy = -1.8389440862E+08 J   System Enthalpy =  9.7379261091E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1773.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -1.132437E+05 4.610964E
-04 1.998168E+00 2.400000E-02
Si                           -2.403757E+05 8.287668E
-08 1.246195E+01 3.500000E-01
Mn                           -1.893941E+05 2.632511E
-06 1.164950E+01 6.400000E-01
```

```
Cr                          -1.754542E+05 6.777142E
-06 4.038772E+00 2.100000E-01
Mo                          -1.739848E+05 7.487449E
-06 4.169272E+00 4.000000E-01
Ni                          undef         undef         1.000000E
-12 5.869000E-14
N                           -1.893031E+05 2.648821E
-06 1.427888E+00 2.000000E-02
Fe                          -1.050389E+05 8.044700E
-04 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7969E+03 BCC_A2             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 BCC_A2             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 BCC_A2             0.0007946       0.9801073

Gibbs Energy = -1.9210923587E+08 J   System Enthalpy =  1.0103827413E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.470355E+05 6.124634E
-05 1.998168E+00 2.400000E-02
Si                          -2.527080E+05 5.745278E
-08 1.246195E+01 3.500000E-01
Mn                          -2.015079E+05 1.683895E
-06 1.164950E+01 6.400000E-01
Cr                          -1.839381E+05 5.367008E
-06 4.038772E+00 2.100000E-01
Mo                          -1.844162E+05 5.200377E
-06 4.169272E+00 4.000000E-01
Ni                          undef         undef         1.000000E
-12 5.869000E-14
N                           -2.143242E+05 7.229311E
```

-07 1.427888E+00 2.000000E-02
Fe   -1.097195E+05 7.182458E
-04 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7969E+03 LIQUID   0.0011120   0.0069352   0.0064831

                                Cr   Mo   Ni
 1.7969E+03 LIQUID   0.0022476   0.0023202   0.0000000

                                N   Fe
 1.7969E+03 LIQUID   0.0007946   0.9801073

Gibbs Energy = -2.0084385380E+08 J   System Enthalpy = 1.2913385700E+08 J
     1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1873.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.525461E+05 5.570151E
-05 1.998168E+00 2.400000E-02
Si   -2.574402E+05 6.616560E
-08 1.246195E+01 3.500000E-01
Mn   -2.090883E+05 1.475867E
-06 1.164950E+01 6.400000E-01
Cr   -1.906921E+05 4.809185E
-06 4.038772E+00 2.100000E-01
Mo   -1.914454E+05 4.582081E
-06 4.169272E+00 4.000000E-01
Ni   undef   undef   1.000000E
-12 5.869000E-14
N   -2.211596E+05 6.798394E
-07 1.427888E+00 2.000000E-02
Fe   -1.147631E+05 6.302911E
-04 1.761169E+03 9.835600E+01
Total
1.796914E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase

```
compnt moles
                                C               Si              Mn
 1.7969E+03 LIQUID             0.0011120       0.0069352       0.0064831

                                Cr              Mo              Ni
 1.7969E+03 LIQUID             0.0022476       0.0023202       0.0000000

                                N               Fe
 1.7969E+03 LIQUID             0.0007946       0.9801073

Gibbs Energy = -2.0995018910E+08 J   System Enthalpy =  1.3324956936E+08 J

******************************************************************************
2 Ni
                      ************************************
                      * WARNING/ERRORS HAVE BEEN DETECTED *
                      ************************************

   3240 Warnings: Multiphase, temperature range violation -  Unary data

 MULTIPHASE OPTION ? set w(6)=2 !
 MULTIPHASE OPTION ? comp pr br pr mol !
 NUMBER OF STEPS =  27

     573.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.351094E+04 5.866439E
-02 1.998168E+00 2.400000E-02
Si                          -1.522438E+05 1.323770E
-14 1.246195E+01 3.500000E-01
Mn                          -3.477434E+04 6.761657E
-04 1.164950E+01 6.400000E-01
Cr                          -3.214644E+04 1.173833E
-03 4.038772E+00 2.100000E-01
Mo                          -2.459976E+04 5.721956E
-03 4.169272E+00 4.000000E-01
Ni                          -3.080800E+04 1.554588E
-03 3.407736E+01 2.000000E+00
N                           -1.065857E+05 1.922645E
-10 1.427888E+00 2.000000E-02
```

```
Fe                          -1.846710E+04 2.072923E
-02 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7870E+03 BCC_A2              0.0000000       0.0069737       0.0065123
 8.1934E+00 FCC_A1              0.2438733       0.0000000       0.0014759

                                 Cr              Mo              Ni
 1.7870E+03 BCC_A2              0.0011997       0.0007355       0.0190697
 8.1934E+00 FCC_A1              0.2312711       0.3484378       0.0000000

                                 N               Fe
 1.7870E+03 BCC_A2              0.0000000       0.9655090
 8.1934E+00 FCC_A1              0.1742725       0.0006693

Gibbs Energy = -3.5626775219E+07 J   System Enthalpy =  1.2555002748E+07 J
     623.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -3.418762E+03 5.168511E
-01 1.998168E+00 2.400000E-02
Si                          -1.552252E+05 9.675465E
-14 1.246195E+01 3.500000E-01
Mn                          -4.559967E+04 1.502624E
-04 1.164950E+01 6.400000E-01
Cr                          -4.039174E+04 4.106690E
-04 4.038772E+00 2.100000E-01
Mo                          -2.539545E+04 7.426851E
-03 4.169272E+00 4.000000E-01
Ni                          -3.697878E+04 7.936694E
-04 3.407736E+01 2.000000E+00
N                           -5.986144E+04 9.574602E
-06 1.427888E+00 2.000000E-02
Fe                          -2.076368E+04 1.816099E
-02 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02
```

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
2.9593E+00	LIQUID	0.0000080	0.0000000	0.1116466
1.7562E+03	BCC_A2	0.0000004	0.0070961	0.0019648
2.8175E+01	FCC_A1	0.0009254	0.0000000	0.2326918
7.8855E+00	CEMENTITE	0.2500000	0.0000000	0.1664609
		Cr	Mo	Ni
2.9593E+00	LIQUID	0.2185298	0.2107789	0.0000079
1.7562E+03	BCC_A2	0.0006417	0.0019381	0.0127458
2.8175E+01	FCC_A1	0.0016522	0.0030344	0.4131996
7.8855E+00	CEMENTITE	0.2813563	0.0071486	0.0065653
		N	Fe	
2.9593E+00	LIQUID	0.4290057	0.0300231	
1.7562E+03	BCC_A2	0.0000128	0.9756003	
2.8175E+01	FCC_A1	0.0048253	0.3436713	
7.8855E+00	CEMENTITE	0.0000000	0.2884689	

Gibbs Energy = -3.9911848532E+07 J System Enthalpy = 1.5226451643E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 673.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-6.596905E+03	3.076073E		
-01	1.998168E+00	2.400000E-02			
Si		-1.573708E+05	6.109940E		
-13	1.246195E+01	3.500000E-01			
Mn		-4.576962E+04	2.803481E		
-04	1.164950E+01	6.400000E-01			
Cr		-4.484136E+04	3.309351E		
-04	4.038772E+00	2.100000E-01			
Mo		-3.060721E+04	4.212047E		
-03	4.169272E+00	4.000000E-01			
Ni		-3.961844E+04	8.416037E		
-04	3.407736E+01	2.000000E+00			
N		-1.112768E+05	2.309449E		
-09	1.427888E+00	2.000000E-02			
Fe		-2.329597E+04	1.555741E		
-02	1.725357E+03	9.635600E+01			

```
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7851E+03 BCC_A2             0.0000012       0.0069812       0.0056325
 3.5962E+00 FCC_A1             0.1021123       0.0000000       0.0000064
 6.5152E+00 CEMENTITE          0.2500000       0.0000000       0.2448317

                                Cr              Mo              Ni
 1.7851E+03 BCC_A2             0.0008356       0.0021105       0.0190623
 3.5962E+00 FCC_A1             0.4077914       0.0929050       0.0000000
 6.5152E+00 CEMENTITE          0.1658841       0.0104132       0.0076389

                                N               Fe
 1.7851E+03 BCC_A2             0.0000000       0.9653767
 3.5962E+00 FCC_A1             0.3970560       0.0001289
 6.5152E+00 CEMENTITE          0.0000000       0.3212321

Gibbs Energy = -4.4518539250E+07 J   System Enthalpy =  1.8470998430E+07 J
     723.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -6.248675E+03 3.536412E
-01 1.998168E+00 2.400000E-02
Si                           -1.602424E+05 2.650001E
-12 1.246195E+01 3.500000E-01
Mn                           -5.103859E+04 2.054489E
-04 1.164950E+01 6.400000E-01
Cr                           -4.950857E+04 2.649967E
-04 4.038772E+00 2.100000E-01
Mo                           -3.630861E+04 2.381633E
-03 4.169272E+00 4.000000E-01
Ni                           -4.427978E+04 6.324053E
-04 3.407736E+01 2.000000E+00
N                            -1.104836E+05 1.042520E
-08 1.427888E+00 2.000000E-02
Fe                           -2.590214E+04 1.344909E
-02 1.725357E+03 9.635600E+01
Total
```

1.795180E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7851E+03	BCC_A2	0.0000056	0.0069812	0.0058320
3.5550E+00	FCC_A1	0.0975885	0.0000000	0.0000135
6.5648E+00	CEMENTITE	0.2500000	0.0000000	0.1887185
		Cr	Mo	Ni
1.7851E+03	BCC_A2	0.0009907	0.0021095	0.0190648
3.5550E+00	FCC_A1	0.4097093	0.0908526	0.0000000
6.5648E+00	CEMENTITE	0.1239576	0.0122860	0.0069462
		N	Fe	
1.7851E+03	BCC_A2	0.0000000	0.9650160	
3.5550E+00	FCC_A1	0.4016422	0.0001939	
6.5648E+00	CEMENTITE	0.0000000	0.4180916	

Gibbs Energy = -4.9313101568E+07 J System Enthalpy = 2.1664893995E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 773.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-6.629852E+03	3.564562E		
-01	1.998168E+00	2.400000E-02			
Si		-1.632512E+05	9.305762E		
-12	1.246195E+01	3.500000E-01			
Mn		-5.656655E+04	1.505473E		
-04	1.164950E+01	6.400000E-01			
Cr		-5.447186E+04	2.085526E		
-04	4.038772E+00	2.100000E-01			
Mo		-4.210234E+04	1.429064E		
-03	4.169272E+00	4.000000E-01			
Ni		-4.908772E+04	4.819858E		
-04	3.407736E+01	2.000000E+00			
N		-1.094352E+05	4.029227E		
-08	1.427888E+00	2.000000E-02			
Fe		-2.863420E+04	1.161780E		
-02	1.725357E+03	9.635600E+01			
Total					
1.795180E+03	1.000000E+02				

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7851E+03	BCC_A2	0.0000193	0.0069813	0.0059922
3.4477E+00	FCC_A1	0.0853103	0.0000000	0.0000265
6.6782E+00	CEMENTITE	0.2500000	0.0000000	0.1427142
		Cr	Mo	Ni
1.7851E+03	BCC_A2	0.0011181	0.0021185	0.0190666
3.4477E+00	FCC_A1	0.4132210	0.0871659	0.0000000
6.6782E+00	CEMENTITE	0.0925730	0.0130560	0.0063504
		N	Fe	
1.7851E+03	BCC_A2	0.0000002	0.9647038	
3.4477E+00	FCC_A1	0.4140379	0.0002384	
6.6782E+00	CEMENTITE	0.0000000	0.4953063	

Gibbs Energy = -5.4334495367E+07 J System Enthalpy = 2.5034274349E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 823.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-7.556875E+03	3.314271E		
-01	1.998168E+00	2.400000E-02			
Si		-1.663998E+05	2.748572E		
-11	1.246195E+01	3.500000E-01			
Mn		-6.236156E+04	1.101794E		
-04	1.164950E+01	6.400000E-01			
Cr		-5.966693E+04	1.633506E		
-04	4.038772E+00	2.100000E-01			
Mo		-4.800184E+04	8.983965E		
-04	4.169272E+00	4.000000E-01			
Ni		-5.404468E+04	3.714906E		
-04	3.407736E+01	2.000000E+00			
N		-1.082774E+05	1.342636E		
-07	1.427888E+00	2.000000E-02			
Fe		-3.148554E+04	1.003940E		
-02	1.725357E+03	9.635600E+01			
Total					
1.795180E+03	1.000000E+02				

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7852E+03 BCC_A2             0.0000531       0.0069808       0.0061246
 3.3265E+00 FCC_A1             0.0707818       0.0000000       0.0000484
 6.6718E+00 CEMENTITE          0.2500000       0.0000000       0.1072992

                                Cr              Mo              Ni
 1.7852E+03 BCC_A2             0.0012232       0.0021310       0.0190669
 3.3265E+00 FCC_A1             0.4164679       0.0837729       0.0000000
 6.6718E+00 CEMENTITE          0.0704178       0.0129576       0.0059059

                                N               Fe
 1.7852E+03 BCC_A2             0.0000011       0.9644194
 3.3265E+00 FCC_A1             0.4286635       0.0002655
 6.6718E+00 CEMENTITE          0.0000000       0.5534196

Gibbs Energy = -5.9580350646E+07 J   System Enthalpy =  2.8611096216E+07 J
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.306907E+03 2.774274E
-01 1.998168E+00 2.400000E-02
Si                          -1.696546E+05 7.066849E
-11 1.246195E+01 3.500000E-01
Mn                          -6.933272E+04 7.106990E
-05 1.164950E+01 6.400000E-01
Cr                          -6.242328E+04 1.841158E
-04 4.038772E+00 2.100000E-01
Mo                          -5.361936E+04 6.192232E
-04 4.169272E+00 4.000000E-01
Ni                          -5.950556E+04 2.752100E
-04 3.407736E+01 2.000000E+00
N                           -7.459307E+04 3.443091E
-05 1.427888E+00 2.000000E-02
Fe                          -3.446122E+04 8.671954E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
```

```
compnt moles
                                C               Si              Mn
 1.7591E+03 BCC_A2            0.0001187       0.0070626       0.0055084
 3.0685E+01 FCC_A1            0.0144903       0.0012399       0.0514648
 5.3792E+00 CEMENTITE         0.2499996       0.0000000       0.0707019

                                Cr              Mo              Ni
 1.7591E+03 BCC_A2            0.0019024       0.0022565       0.0180522
 3.0685E+01 FCC_A1            0.0087203       0.0044341       0.0747063
 5.3792E+00 CEMENTITE         0.0789509       0.0118659       0.0054038

                                N               Fe
 1.7591E+03 BCC_A2            0.0003945       0.9647048
 3.0685E+01 FCC_A1            0.0239200       0.8210244
 5.3792E+00 CEMENTITE         0.0000004       0.5830777

Gibbs Energy = -6.5008378955E+07 J   System Enthalpy =  3.2709636933E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.228188E+04 2.018173E
-01 1.998168E+00 2.400000E-02
Si                          -1.730530E+05 1.609869E
-10 1.246195E+01 3.500000E-01
Mn                          -7.648556E+04 4.694826E
-05 1.164950E+01 6.400000E-01
Cr                          -6.750896E+04 1.512213E
-04 4.038772E+00 2.100000E-01
Mo                          -5.968650E+04 4.190755E
-04 4.169272E+00 4.000000E-01
Ni                          -6.538129E+04 1.995351E
-04 3.407736E+01 2.000000E+00
N                           -8.369318E+04 1.835418E
-05 1.427888E+00 2.000000E-02
Fe                          -3.754803E+04 7.501123E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
```

```
                                C               Si              Mn
 1.6919E+03 BCC_A2             0.0002061       0.0072071       0.0050630
 1.0326E+02 FCC_A1             0.0159750       0.0025959       0.0298593

                                Cr              Mo              Ni
 1.6919E+03 BCC_A2             0.0020836       0.0022823       0.0166889
 1.0326E+02 FCC_A1             0.0049730       0.0029813       0.0565682

                                N               Fe
 1.6919E+03 BCC_A2             0.0002864       0.9661826
 1.0326E+02 FCC_A1             0.0091349       0.8779124

Gibbs Energy = -7.0725621710E+07 J   System Enthalpy =  3.7071281313E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   973.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -2.173444E+04 6.811383E
-02 1.998168E+00 2.400000E-02
Si                          -1.765977E+05 3.309394E
-10 1.246195E+01 3.500000E-01
Mn                          -8.387063E+04 3.144804E
-05 1.164950E+01 6.400000E-01
Cr                          -7.339017E+04 1.148717E
-04 4.038772E+00 2.100000E-01
Mo                          -6.577600E+04 2.944170E
-04 4.169272E+00 4.000000E-01
Ni                          -7.145990E+04 1.458263E
-04 3.407736E+01 2.000000E+00
N                           -9.191687E+04 1.163186E
-05 1.427888E+00 2.000000E-02
Fe                          -4.076277E+04 6.482494E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.5875E+03 BCC_A2             0.0001524       0.0073721       0.0047965
 2.0764E+02 FCC_A1             0.0084582       0.0036530       0.0194315
```

```
                                 Cr              Mo              Ni
 1.5875E+03 BCC_A2              0.0020827       0.0023302       0.0155577
 2.0764E+02 FCC_A1              0.0035274       0.0022636       0.0451689

                                 N               Fe
 1.5875E+03 BCC_A2              0.0002400       0.9674685
 2.0764E+02 FCC_A1              0.0050420       0.9124555

Gibbs Energy = -7.6687818673E+07 J   System Enthalpy =  4.1780965923E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1023.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -3.282487E+04 2.108609E
-02 1.998168E+00 2.400000E-02
Si                           -1.801052E+05 6.368152E
-10 1.246195E+01 3.500000E-01
Mn                           -9.212629E+04 1.977547E
-05 1.164950E+01 6.400000E-01
Cr                           -7.952531E+04 8.700012E
-05 4.038772E+00 2.100000E-01
Mo                           -7.171229E+04 2.179941E
-04 4.169272E+00 4.000000E-01
Ni                           -7.833204E+04 1.001030E
-04 3.407736E+01 2.000000E+00
N                            -1.018558E+05 6.300097E
-06 1.427888E+00 2.000000E-02
Fe                           -4.410209E+04 5.600065E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.3173E+03 BCC_A2              0.0000964       0.0077845       0.0043523
 4.7789E+02 FCC_A1              0.0039155       0.0046192       0.0123798

                                 Cr              Mo              Ni
 1.3173E+03 BCC_A2              0.0020524       0.0024538       0.0136127
 4.7789E+02 FCC_A1              0.0027940       0.0019606       0.0337848
```

```
                                N               Fe
 1.3173E+03 BCC_A2             0.0001685       0.9694794
 4.7789E+02 FCC_A1             0.0025234       0.9380227

Gibbs Energy = -8.2907878452E+07 J   System Enthalpy =  4.7118735496E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.490159E+04 6.519345E
-03 1.998168E+00 2.400000E-02
Si                          -1.827913E+05 1.264078E
-09 1.246195E+01 3.500000E-01
Mn                          -1.008282E+05 1.235135E
-05 1.164950E+01 6.400000E-01
Cr                          -8.580830E+04 6.650853E
-05 4.038772E+00 2.100000E-01
Mo                          -7.677977E+04 1.829716E
-04 4.169272E+00 4.000000E-01
Ni                          -8.606906E+04 6.459274E
-05 3.407736E+01 2.000000E+00
N                           -1.130626E+05 3.134328E
-06 1.427888E+00 2.000000E-02
Fe                          -4.757416E+04 4.831743E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 6.5578E+02 BCC_A2             0.0000573       0.0087886       0.0036131
 1.1394E+03 FCC_A1             0.0017207       0.0058790       0.0081447

                                Cr              Mo              Ni
 6.5578E+02 BCC_A2             0.0019920       0.0028218       0.0107903
 1.1394E+03 FCC_A1             0.0023981       0.0020351       0.0236978

                                N               Fe
 6.5578E+02 BCC_A2             0.0001069       0.9718300
 1.1394E+03 FCC_A1             0.0011917       0.9549328
```

Gibbs Energy = -8.9385834047E+07 J   System Enthalpy = 5.2211240262E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1123.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -5.383116E+04 3.134647E
-03 1.998168E+00 2.400000E-02
Si   -1.853030E+05 2.405073E
-09 1.246195E+01 3.500000E-01
Mn   -1.085234E+05 8.960352E
-06 1.164950E+01 6.400000E-01
Cr   -9.194785E+04 5.288019E
-05 4.038772E+00 2.100000E-01
Mo   -8.158281E+04 1.604705E
-04 4.169272E+00 4.000000E-01
Ni   -9.303608E+04 4.706272E
-05 3.407736E+01 2.000000E+00
N   -1.217101E+05 2.182633E
-06 1.427888E+00 2.000000E-02
Fe   -5.121501E+04 4.148316E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7952E+03 FCC_A1   0.0011131   0.0069419   0.0064893

                                Cr   Mo   Ni
 1.7952E+03 FCC_A1   0.0022498   0.0023225   0.0189827

                                N   Fe
 1.7952E+03 FCC_A1   0.0007954   0.9611053

Gibbs Energy = -9.6092519138E+07 J   System Enthalpy = 5.6395156822E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1173.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.878383E+04 2.411985E
-03 1.998168E+00 2.400000E-02
Si                          -1.890502E+05 3.816392E
-09 1.246195E+01 3.500000E-01
Mn                          -1.143982E+05 8.051647E
-06 1.164950E+01 6.400000E-01
Cr                          -9.787933E+04 4.379900E
-05 4.038772E+00 2.100000E-01
Mo                          -8.800301E+04 1.205740E
-04 4.169272E+00 4.000000E-01
Ni                          -9.825973E+04 4.212354E
-05 3.407736E+01 2.000000E+00
N                           -1.268886E+05 2.237133E
-06 1.427888E+00 2.000000E-02
Fe                          -5.497422E+04 3.564635E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 FCC_A1             0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1             0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053

Gibbs Energy = -1.0294785944E+08 J   System Enthalpy =  5.9411887936E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.377904E+04 1.888208E
-03 1.998168E+00 2.400000E-02
Si                          -1.928624E+05 5.794352E
-09 1.246195E+01 3.500000E-01
Mn                          -1.203608E+05 7.235818E
```

-06 1.164950E+01 6.400000E-01
Cr -1.038881E+05 3.656154E
-05 4.038772E+00 2.100000E-01
Mo -9.448399E+04 9.218633E
-05 4.169272E+00 4.000000E-01
Ni -1.035562E+05 3.777465E
-05 3.407736E+01 2.000000E+00
N -1.321774E+05 2.263655E
-06 1.427888E+00 2.000000E-02
Fe -5.881025E+04 3.077956E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7952E+03	FCC_A1	0.0011131	0.0069419	0.0064893
		Cr	Mo	Ni
1.7952E+03	FCC_A1	0.0022498	0.0023225	0.0189827
		N	Fe	
1.7952E+03	FCC_A1	0.0007954	0.9611053	

Gibbs Energy = -1.0993263608E+08 J System Enthalpy = 6.2467024418E+07 J
1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1273.0000 K

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

Component Ref.Phase Chem.Pot. Activity Amount/mol Mass/kg
C -6.882629E+04 1.499484E
-03 1.998168E+00 2.400000E-02
Si -1.967165E+05 8.479950E
-09 1.246195E+01 3.500000E-01
Mn -1.264034E+05 6.508115E
-06 1.164950E+01 6.400000E-01
Cr -1.099688E+05 3.074645E
-05 4.038772E+00 2.100000E-01
Mo -1.010254E+05 7.157486E
-05 4.169272E+00 4.000000E-01
Ni -1.089396E+05 3.388632E
-05 3.407736E+01 2.000000E+00

```
N                          -1.375761E+05 2.264760E
-06 1.427888E+00 2.000000E-02
Fe                         -6.271616E+04 2.670858E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 FCC_A1             0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1             0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053

Gibbs Energy = -1.1704312648E+08 J   System Enthalpy =  6.5560626978E+07 J
     1323.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1323.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -7.391612E+04 1.207035E
-03 1.998168E+00 2.400000E-02
Si                         -2.006410E+05 1.198114E
-08 1.246195E+01 3.500000E-01
Mn                         -1.325241E+05 5.858938E
-06 1.164950E+01 6.400000E-01
Cr                         -1.161209E+05 2.602758E
-05 4.038772E+00 2.100000E-01
Mo                         -1.076257E+05 5.634189E
-05 4.169272E+00 4.000000E-01
Ni                         -1.143720E+05 3.051270E
-05 3.407736E+01 2.000000E+00
N                          -1.430801E+05 2.244191E
-06 1.427888E+00 2.000000E-02
Fe                         -6.669043E+04 2.328076E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02
```

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 FCC_A1              0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1              0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 FCC_A1              0.0007954       0.9611053

Gibbs Energy = -1.2427590341E+08 J   System Enthalpy =  6.8692772167E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1373.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -7.904997E+04 9.832988E
-04 1.998168E+00 2.400000E-02
Si                           -2.046105E+05 1.644221E
-08 1.246195E+01 3.500000E-01
Mn                           -1.387221E+05 5.279161E
-06 1.164950E+01 6.400000E-01
Cr                           -1.223430E+05 2.216554E
-05 4.038772E+00 2.100000E-01
Mo                           -1.142830E+05 4.490630E
-05 4.169272E+00 4.000000E-01
Ni                           -1.198750E+05 2.751515E
-05 3.407736E+01 2.000000E+00
N                            -1.486861E+05 2.205477E
-06 1.427888E+00 2.000000E-02
Fe                           -7.073087E+04 2.037844E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 FCC_A1              0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1              0.0022498       0.0023225       0.0189827
```

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                                  N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053

Gibbs Energy = -1.3162780206E+08 J   System Enthalpy =  7.1863549429E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -8.422608E+04 8.097613E
-04 1.998168E+00 2.400000E-02
Si                           -2.086289E+05 2.197688E
-08 1.246195E+01 3.500000E-01
Mn                           -1.450003E+05 4.759383E
-06 1.164950E+01 6.400000E-01
Cr                           -1.286358E+05 1.897728E
-05 4.038772E+00 2.100000E-01
Mo                           -1.209970E+05 3.619324E
-05 4.169272E+00 4.000000E-01
Ni                           -1.254424E+05 2.485703E
-05 3.407736E+01 2.000000E+00
N                            -1.543896E+05 2.152298E
-06 1.427888E+00 2.000000E-02
Fe                           -7.483728E+04 1.790552E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                  C               Si              Mn
 1.7952E+03 FCC_A1             0.0011131       0.0069419       0.0064893

                                  Cr              Mo              Ni
 1.7952E+03 FCC_A1             0.0022498       0.0023225       0.0189827

                                  N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053

Gibbs Energy = -1.3909589171E+08 J   System Enthalpy =  7.5073058934E+07 J
     1473.00
*** MULTIPHASE - Stage 1* Results ***
```

Temperature = 1473.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -8.944486E+04 6.733488E
-04 1.998168E+00 2.400000E-02
Si   -2.127032E+05 2.867055E
-08 1.246195E+01 3.500000E-01
Mn   -1.513371E+05 4.300397E
-06 1.164950E+01 6.400000E-01
Cr   -1.349962E+05 1.632932E
-05 4.038772E+00 2.100000E-01
Mo   -1.277639E+05 2.947333E
-05 4.169272E+00 4.000000E-01
Ni   -1.310751E+05 2.249106E
-05 3.407736E+01 2.000000E+00
N   -1.601894E+05 2.087379E
-06 1.427888E+00 2.000000E-02
Fe   -7.900528E+04 1.579185E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7952E+03 FCC_A1   0.0011131   0.0069419   0.0064893

                                Cr   Mo   Ni
 1.7952E+03 FCC_A1   0.0022498   0.0023225   0.0189827

                                N   Fe
 1.7952E+03 FCC_A1   0.0007954   0.9611053

Gibbs Energy = -1.4667745142E+08 J   System Enthalpy = 7.8321409903E+07 J
     1523.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1523.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -9.470324E+04 5.649705E

-04 1.998168E+00 2.400000E-02
Si   -2.168243E+05 3.662011E
-08 1.246195E+01 3.500000E-01
Mn   -1.577516E+05 3.887739E
-06 1.164950E+01 6.400000E-01
Cr   -1.414256E+05 1.411303E
-05 4.038772E+00 2.100000E-01
Mo   -1.345843E+05 2.422434E
-05 4.169272E+00 4.000000E-01
Ni   -1.367660E+05 2.039038E
-05 3.407736E+01 2.000000E+00
N   -1.660810E+05 2.013869E
-06 1.427888E+00 2.000000E-02
Fe   -8.323544E+04 1.397427E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7952E+03	FCC_A1	0.0011131	0.0069419	0.0064893
		Cr	Mo	Ni
1.7952E+03	FCC_A1	0.0022498	0.0023225	0.0189827
		N	Fe	
1.7952E+03	FCC_A1	0.0007954	0.9611053	

Gibbs Energy = -1.5436994908E+08 J   System Enthalpy = 8.1608721033E+07 J
     1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1573.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -9.999678E+04 4.780671E
-04 1.998168E+00 2.400000E-02
Si   -2.210021E+05 4.585262E
-08 1.246195E+01 3.500000E-01
Mn   -1.642589E+05 3.512290E
-06 1.164950E+01 6.400000E-01
Cr   -1.479288E+05 1.224195E
-05 4.038772E+00 2.100000E-01

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Mo                          -1.414622E+05 2.007154E
-05 4.169272E+00 4.000000E-01
Ni                          -1.425129E+05 1.852212E
-05 3.407736E+01 2.000000E+00
N                           -1.720562E+05 1.934958E
-06 1.427888E+00 2.000000E-02
Fe                          -8.752746E+04 1.240359E
-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7952E+03 FCC_A1              0.0011131       0.0069419       0.0064893

                                 Cr              Mo              Ni
 1.7952E+03 FCC_A1              0.0022498       0.0023225       0.0189827

                                 N               Fe
 1.7952E+03 FCC_A1              0.0007954       0.9611053

Gibbs Energy = -1.6217102630E+08 J   System Enthalpy =  8.4935427748E+07 J
     1623.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.053398E+05 4.072206E
-04 1.998168E+00 2.400000E-02
Si                          -2.251979E+05 5.654733E
-08 1.246195E+01 3.500000E-01
Mn                          -1.707929E+05 3.186676E
-06 1.164950E+01 6.400000E-01
Cr                          -1.544910E+05 1.066562E
-05 4.038772E+00 2.100000E-01
Mo                          -1.483922E+05 1.675969E
-05 4.169272E+00 4.000000E-01
Ni                          -1.483360E+05 1.682962E
-05 3.407736E+01 2.000000E+00
N                           -1.781268E+05 1.850587E
-06 1.427888E+00 2.000000E-02
Fe                          -9.188068E+04 1.104044E
```

-03 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount Phase Mole fraction of component within phase
compnt moles
C Si Mn
1.7952E+03 FCC_A1 0.0011131 0.0069419 0.0064893

Cr Mo Ni
1.7952E+03 FCC_A1 0.0022498 0.0023225 0.0189827

N Fe
1.7952E+03 FCC_A1 0.0007954 0.9611053

Gibbs Energy = -1.7007848782E+08 J System Enthalpy = 8.8301693368E+07 J
1673.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1673.0000 K

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

Component Ref.Phase Chem.Pot. Activity Amount/mol Mass/kg
C -1.107107E+05 3.495112E
-04 1.998168E+00 2.400000E-02
Si -2.294553E+05 6.856371E
-08 1.246195E+01 3.500000E-01
Mn -1.774198E+05 2.888772E
-06 1.164950E+01 6.400000E-01
Cr -1.611227E+05 9.322460E
-06 4.038772E+00 2.100000E-01
Mo -1.553545E+05 1.411313E
-05 4.169272E+00 4.000000E-01
Ni -1.542063E+05 1.532748E
-05 3.407736E+01 2.000000E+00
N -1.842795E+05 1.764182E
-06 1.427888E+00 2.000000E-02
Fe -9.628560E+04 9.859009E
-04 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

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

```
 1.7952E+03 FCC_A1             0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1             0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053

Gibbs Energy = -1.7809027298E+08 J   System Enthalpy =  9.1707446868E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.161269E+05 3.017000E
-04 1.998168E+00 2.400000E-02
Si                          -2.337576E+05 8.195228E
-08 1.246195E+01 3.500000E-01
Mn                          -1.841091E+05 2.622234E
-06 1.164950E+01 6.400000E-01
Cr                          -1.678151E+05 8.177650E
-06 4.038772E+00 2.100000E-01
Mo                          -1.623720E+05 1.195741E
-05 4.169272E+00 4.000000E-01
Ni                          -1.601227E+05 1.399028E
-05 3.407736E+01 2.000000E+00
N                           -1.905168E+05 1.676560E
-06 1.427888E+00 2.000000E-02
Fe                          -1.007505E+05 8.825023E
-04 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 FCC_A1             0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 FCC_A1             0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 FCC_A1             0.0007954       0.9611053
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Gibbs Energy = -1.8620444238E+08 J   System Enthalpy =  9.5152561979E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1773.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -1.164719E+05 3.704158E
-04 1.998168E+00 2.400000E-02
Si                           -2.392990E+05 8.915634E
-08 1.246195E+01 3.500000E-01
Mn                           -1.904169E+05 2.456053E
-06 1.164950E+01 6.400000E-01
Cr                           -1.755251E+05 6.744611E
-06 4.038772E+00 2.100000E-01
Mo                           -1.737892E+05 7.587489E
-06 4.169272E+00 4.000000E-01
Ni                           -1.647281E+05 1.402951E
-05 3.407736E+01 2.000000E+00
N                            -1.898151E+05 2.558387E
-06 1.427888E+00 2.000000E-02
Fe                           -1.053162E+05 7.894782E
-04 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 9.4205E+01 LIQUID             0.0057114       0.0109030       0.0094381
 1.7010E+03 BCC_A2             0.0008584       0.0067225       0.0063260

                                Cr              Mo              Ni
 9.4205E+01 LIQUID             0.0025582       0.0027889       0.0227058
 1.7010E+03 BCC_A2             0.0022327       0.0022966       0.0187765

                                N               Fe
 9.4205E+01 LIQUID             0.0022761       0.9436184
 1.7010E+03 BCC_A2             0.0007134       0.9620738

Gibbs Energy = -1.9445855821E+08 J   System Enthalpy =  1.0221449017E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***
```

Temperature = 1823.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.467812E+05 6.228252E
-05 1.998168E+00 2.400000E-02
Si   -2.512737E+05 6.315477E
-08 1.246195E+01 3.500000E-01
Mn   -2.023377E+05 1.594187E
-06 1.164950E+01 6.400000E-01
Cr   -1.838643E+05 5.393199E
-06 4.038772E+00 2.100000E-01
Mo   -1.834551E+05 5.540802E
-06 4.169272E+00 4.000000E-01
Ni   -1.741559E+05 1.023327E
-05 3.407736E+01 2.000000E+00
N   -2.131759E+05 7.798290E
-07 1.427888E+00 2.000000E-02
Fe   -1.100255E+05 7.038919E
-04 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7952E+03 LIQUID   0.0011131   0.0069419   0.0064893

                                Cr   Mo   Ni
 1.7952E+03 LIQUID   0.0022498   0.0023225   0.0189827

                                N   Fe
 1.7952E+03 LIQUID   0.0007954   0.9611053

Gibbs Energy = -2.0336060025E+08 J   System Enthalpy = 1.2858777118E+08 J
     1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1873.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.522890E+05 5.662901E

```
-05 1.998168E+00 2.400000E-02
Si                          -2.560631E+05 7.228286E
-08 1.246195E+01 3.500000E-01
Mn                          -2.099050E+05 1.400455E
-06 1.164950E+01 6.400000E-01
Cr                          -1.906298E+05 4.828462E
-06 4.038772E+00 2.100000E-01
Mo                          -1.904719E+05 4.877666E
-06 4.169272E+00 4.000000E-01
Ni                          -1.806288E+05 9.177239E
-06 3.407736E+01 2.000000E+00
N                           -2.199983E+05 7.324739E
-07 1.427888E+00 2.000000E-02
Fe                          -1.150760E+05 6.177528E
-04 1.725357E+03 9.635600E+01
Total
1.795180E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7952E+03 LIQUID             0.0011131       0.0069419       0.0064893

                                Cr              Mo              Ni
 1.7952E+03 LIQUID             0.0022498       0.0023225       0.0189827

                                N               Fe
 1.7952E+03 LIQUID             0.0007954       0.9611053

Gibbs Energy = -2.1252086412E+08 J   System Enthalpy =  1.3269455231E+08 J

                      ************************************
                      * WARNING/ERRORS HAVE BEEN DETECTED *
                      ************************************


**************************************************************************
4 Ni


 MULTIPHASE OPTION ? set w(6)=4 !
 MULTIPHASE OPTION ? comp pr br pr mol !
 NUMBER OF STEPS =  27

     573.000
*** MULTIPHASE - Stage 1* Results ***
```

Temperature =   573.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.334111E+04 6.079340E
-02 1.998168E+00 2.400000E-02
Si   -1.495620E+05 2.324248E
-14 1.246195E+01 3.500000E-01
Mn   -3.577740E+04 5.477935E
-04 1.164950E+01 6.400000E-01
Cr   -3.260556E+04 1.065994E
-03 4.038772E+00 2.100000E-01
Mo   -2.471225E+04 5.588425E
-03 4.169272E+00 4.000000E-01
Ni   -2.755296E+04 3.078490E
-03 6.815471E+01 4.000000E+00
N   -1.059907E+05 2.178419E
-10 1.427888E+00 2.000000E-02
Fe   -1.857390E+04 2.026971E
-02 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7853E+03 BCC_A2   0.0000000   0.0069804   0.0065196
 8.1807E+00 FCC_A1   0.2442534   0.0000000   0.0012609

                                Cr   Mo   Ni
 1.7853E+03 BCC_A2   0.0012195   0.0007235   0.0381763
 8.1807E+00 FCC_A1   0.2275636   0.3517606   0.0000001

                                N   Fe
 1.7853E+03 BCC_A2   0.0000000   0.9463807
 8.1807E+00 FCC_A1   0.1745441   0.0006174

Gibbs Energy = -3.5951459907E+07 J   System Enthalpy = 1.2901537314E+07 J
     623.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   623.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.052163E+04 1.311745E
-01 1.998168E+00 2.400000E-02
Si                          -1.521888E+05 1.738777E
-13 1.246195E+01 3.500000E-01
Mn                          -4.078336E+04 3.807651E
-04 1.164950E+01 6.400000E-01
Cr                          -3.797208E+04 6.551791E
-04 4.038772E+00 2.100000E-01
Mo                          -2.931865E+04 3.482391E
-03 4.169272E+00 4.000000E-01
Ni                          -3.161351E+04 2.236003E
-03 6.815471E+01 4.000000E+00
N                           -1.062281E+05 1.240691E
-09 1.427888E+00 2.000000E-02
Fe                          -2.093325E+04 1.757609E
-02 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7855E+03 BCC_A2              0.0000001       0.0069794       0.0065007
 7.7797E+00 FCC_A1              0.2522661       0.0000000       0.0007732
 1.4179E-01 CEMENTITE           0.2500000       0.0000000       0.2556282

                                 Cr              Mo              Ni
 1.7855E+03 BCC_A2              0.0011953       0.0009260       0.0381695
 7.7797E+00 FCC_A1              0.2388839       0.3233510       0.0000002
 1.4179E-01 CEMENTITE           0.3251721       0.0015916       0.0155220

                                 N               Fe
 1.7855E+03 BCC_A2              0.0000000       0.9462289
 7.7797E+00 FCC_A1              0.1835396       0.0011861
 1.4179E-01 CEMENTITE           0.0000000       0.1520861

Gibbs Energy = -4.0335844426E+07 J   System Enthalpy =  1.5787406605E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   673.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -7.611098E+03 2.566152E
-01 1.998168E+00 2.400000E-02
Si                           -1.549537E+05 9.410878E
-13 1.246195E+01 3.500000E-01
Mn                           -4.596486E+04 2.707352E
-04 1.164950E+01 6.400000E-01
Cr                           -4.333569E+04 4.331132E
-04 4.038772E+00 2.100000E-01
Mo                           -3.440648E+04 2.136101E
-03 4.169272E+00 4.000000E-01
Ni                           -3.582023E+04 1.659190E
-03 6.815471E+01 4.000000E+00
N                            -1.066193E+05 5.308760E
-09 1.427888E+00 2.000000E-02
Fe                           -2.341724E+04 1.522390E
-02 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7859E+03 BCC_A2              0.0000009       0.0069782       0.0065211
 7.5936E+00 FCC_A1              0.2629261       0.0000000       0.0005071

                                 Cr              Mo              Ni
 1.7859E+03 BCC_A2              0.0012012       0.0010714       0.0381637
 7.5936E+00 FCC_A1              0.2493730       0.2970919       0.0000003

                                 N               Fe
 1.7859E+03 BCC_A2              0.0000000       0.9460636
 7.5936E+00 FCC_A1              0.1880358       0.0020659

Gibbs Energy = -4.4957452812E+07 J   System Enthalpy =  1.8813361078E+07 J
     723.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -3.801406E+03 5.313326E
-01 1.998168E+00 2.400000E-02
Si                           -1.588082E+05 3.364059E
```

-12 1.246195E+01 3.500000E-01
Mn   -5.852121E+04 5.917253E
-05 1.164950E+01 6.400000E-01
Cr   -4.775375E+04 3.548280E
-04 4.038772E+00 2.100000E-01
Mo   -3.624926E+04 2.405265E
-03 4.169272E+00 4.000000E-01
Ni   -4.225010E+04 8.864017E
-04 6.815471E+01 4.000000E+00
N   -5.927156E+04 5.222891E
-05 1.427888E+00 2.000000E-02
Fe   -2.593653E+04 1.337237E
-02 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7069E+03	BCC_A2	0.0000079	0.0073010	0.0017763
7.9302E+01	FCC_A1	0.0020603	0.0000016	0.1026123
7.2850E+00	CEMENTITE	0.2500000	0.0000000	0.0659075
		Cr	Mo	Ni
1.7069E+03	BCC_A2	0.0013558	0.0020955	0.0256874
7.9302E+01	FCC_A1	0.0040274	0.0064544	0.3055770
7.2850E+00	CEMENTITE	0.1929068	0.0110842	0.0105597
		N	Fe	
1.7069E+03	BCC_A2	0.0001754	0.9616006	
7.9302E+01	FCC_A1	0.0142307	0.5650363	
7.2850E+00	CEMENTITE	0.0000000	0.4695418	

Gibbs Energy = -4.9797887248E+07 J   System Enthalpy = 2.1879486203E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   773.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -5.844957E+03 4.027572E
-01 1.998168E+00 2.400000E-02
Si   -1.607702E+05 1.368997E
-11 1.246195E+01 3.500000E-01

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Mn                          -5.753323E+04 1.295246E
-04 1.164950E+01 6.400000E-01
Cr                          -5.487049E+04 1.960106E
-04 4.038772E+00 2.100000E-01
Mo                          -4.211151E+04 1.427025E
-03 4.169272E+00 4.000000E-01
Ni                          -4.464584E+04 9.620151E
-04 6.815471E+01 4.000000E+00
N                           -1.092030E+05 4.177431E
-08 1.427888E+00 2.000000E-02
Fe                          -2.877386E+04 1.136807E
-02 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7834E+03 BCC_A2             0.0000201       0.0069878       0.0060564
 3.5008E+00 FCC_A1             0.0915281       0.0000000       0.0000235
 6.5677E+00 CEMENTITE          0.2500000       0.0000000       0.1291956

                                Cr              Mo              Ni
 1.7834E+03 BCC_A2             0.0011275       0.0021080       0.0381684
 3.5008E+00 FCC_A1             0.4092672       0.0911472       0.0000000
 6.5677E+00 CEMENTITE          0.0906278       0.0138226       0.0131173

                                N               Fe
 1.7834E+03 BCC_A2             0.0000002       0.9455315
 3.5008E+00 FCC_A1             0.4077658       0.0002683
 6.5677E+00 CEMENTITE          0.0000000       0.5032368

Gibbs Energy = -5.4894951532E+07 J   System Enthalpy =  2.5410318373E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.809020E+03 3.697022E
-01 1.998168E+00 2.400000E-02
Si                          -1.645707E+05 3.590820E
-11 1.246195E+01 3.500000E-01
Mn                          -6.753294E+04 5.174739E
```

-05 1.164950E+01 6.400000E-01
Cr   -5.706533E+04 2.389108E
-04 4.038772E+00 2.100000E-01
Mo   -4.799947E+04 8.987078E
-04 4.169272E+00 4.000000E-01
Ni   -5.128750E+04 5.558238E
-04 6.815471E+01 4.000000E+00
N   -7.262955E+04 2.457096E
-05 1.427888E+00 2.000000E-02
Fe   -3.154959E+04 9.945866E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.6672E+03	BCC_A2	0.0000563	0.0074582	0.0030788
1.2224E+02	FCC_A1	0.0073364	0.0002275	0.0515287
4.0301E+00	CEMENTITE	0.2499998	0.0000000	0.0540307
		Cr	Mo	Ni
1.6672E+03	BCC_A2	0.0018379	0.0020966	0.0276788
1.2224E+02	FCC_A1	0.0043519	0.0051206	0.1797452
4.0301E+00	CEMENTITE	0.1098628	0.0119048	0.0092582
		N	Fe	
1.6672E+03	BCC_A2	0.0001848	0.9576086	
1.2224E+02	FCC_A1	0.0091605	0.7425293	
4.0301E+00	CEMENTITE	0.0000002	0.5649435	

Gibbs Energy = -6.0185212734E+07 J   System Enthalpy = 2.9215883994E+07 J
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.040074E+04 2.386179E
-01 1.998168E+00 2.400000E-02
Si   -1.677088E+05 9.239585E
-11 1.246195E+01 3.500000E-01
Mn   -7.351256E+04 3.995743E
-05 1.164950E+01 6.400000E-01

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Cr                          -6.205548E+04 1.936857E
-04 4.038772E+00 2.100000E-01
Mo                          -5.391554E+04 5.944653E
-04 4.169272E+00 4.000000E-01
Ni                          -5.648314E+04 4.173513E
-04 6.815471E+01 4.000000E+00
N                           -8.046669E+04 1.532916E
-05 1.427888E+00 2.000000E-02
Fe                          -3.452460E+04 8.596557E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.5945E+03 BCC_A2              0.0000963       0.0076968       0.0032943
 1.9898E+02 FCC_A1              0.0092702       0.0009531       0.0321473

                                 Cr              Mo              Ni
 1.5945E+03 BCC_A2              0.0020222       0.0021330       0.0267098
 1.9898E+02 FCC_A1              0.0040932       0.0038614       0.1284874

                                 N               Fe
 1.5945E+03 BCC_A2              0.0001635       0.9578842
 1.9898E+02 FCC_A1              0.0058661       0.8153213

Gibbs Energy = -6.5739085621E+07 J   System Enthalpy =  3.3369941524E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.913546E+04 8.262453E
-02 1.998168E+00 2.400000E-02
Si                          -1.709719E+05 2.111354E
-10 1.246195E+01 3.500000E-01
Mn                          -8.018258E+04 2.900029E
-05 1.164950E+01 6.400000E-01
Cr                          -6.784134E+04 1.448116E
-04 4.038772E+00 2.100000E-01
Mo                          -5.980308E+04 4.127575E
-04 4.169272E+00 4.000000E-01
```

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Ni                          -6.209944E+04 3.060145E
-04 6.815471E+01 4.000000E+00
N                           -8.842981E+04 9.901136E
-06 1.427888E+00 2.000000E-02
Fe                          -3.761543E+04 7.435537E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.4636E+03 BCC_A2             0.0000798       0.0080310       0.0033207
 3.2983E+02 FCC_A1             0.0057041       0.0021455       0.0205840

                                Cr              Mo              Ni
 1.4636E+03 BCC_A2             0.0020106       0.0022052       0.0249987
 3.2983E+02 FCC_A1             0.0033229       0.0028552       0.0957049

                                N               Fe
 1.4636E+03 BCC_A2             0.0001446       0.9592094
 3.2983E+02 FCC_A1             0.0036875       0.8659960

Gibbs Energy = -7.1539260170E+07 J   System Enthalpy =  3.7867172313E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   973.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -2.917218E+04 2.716169E
-02 1.998168E+00 2.400000E-02
Si                          -1.741915E+05 4.455742E
-10 1.246195E+01 3.500000E-01
Mn                          -8.780057E+04 1.934742E
-05 1.164950E+01 6.400000E-01
Cr                          -7.384208E+04 1.086309E
-04 4.038772E+00 2.100000E-01
Mo                          -6.558029E+04 3.016263E
-04 4.169272E+00 4.000000E-01
Ni                          -6.846191E+04 2.112398E
-04 6.815471E+01 4.000000E+00
N                           -9.769372E+04 5.695498E
-06 1.427888E+00 2.000000E-02
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Fe                          -4.082180E+04 6.435365E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.1693E+03 BCC_A2             0.0000579       0.0086755       0.0030990
 6.2410E+02 FCC_A1             0.0030933       0.0037130       0.0128596

                                Cr              Mo              Ni
 1.1693E+03 BCC_A2             0.0019728       0.0023339       0.0218905
 6.2410E+02 FCC_A1             0.0027750       0.0023076       0.0681897

                                N               Fe
 1.1693E+03 BCC_A2             0.0001116       0.9618589
 6.2410E+02 FCC_A1             0.0020789       0.9049829

Gibbs Energy = -7.7599461554E+07 J   System Enthalpy =  4.3010341085E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1023.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.002934E+04 9.039472E
-03 1.998168E+00 2.400000E-02
Si                          -1.768932E+05 9.290059E
-10 1.246195E+01 3.500000E-01
Mn                          -9.621752E+04 1.222454E
-05 1.164950E+01 6.400000E-01
Cr                          -8.006109E+04 8.168898E
-05 4.038772E+00 2.100000E-01
Mo                          -7.076593E+04 2.436491E
-04 4.169272E+00 4.000000E-01
Ni                          -7.561867E+04 1.377175E
-04 6.815471E+01 4.000000E+00
N                           -1.079005E+05 3.095366E
-06 1.427888E+00 2.000000E-02
Fe                          -4.415931E+04 5.562517E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02
```

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 5.4019E+02 BCC_A2              0.0000395       0.0100672       0.0028171
 1.2533E+03 FCC_A1              0.0015774       0.0056044       0.0080812

                                Cr              Mo              Ni
 5.4019E+02 BCC_A2              0.0019233       0.0026596       0.0180085
 1.2533E+03 FCC_A1              0.0023936       0.0021804       0.0466200

                                N               Fe
 5.4019E+02 BCC_A2              0.0000798       0.9644049
 1.2533E+03 FCC_A1              0.0011049       0.9324381

Gibbs Energy = -8.3941333201E+07 J   System Enthalpy =  4.8757359494E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -4.809991E+04 4.555235E
-03 1.998168E+00 2.400000E-02
Si                           -1.794648E+05 1.835296E
-09 1.246195E+01 3.500000E-01
Mn                           -1.034982E+05 9.156727E
-06 1.164950E+01 6.400000E-01
Cr                           -8.608090E+04 6.450706E
-05 4.038772E+00 2.100000E-01
Mo                           -7.582703E+04 2.035929E
-04 4.169272E+00 4.000000E-01
Ni                           -8.186799E+04 1.034405E
-04 6.815471E+01 4.000000E+00
N                            -1.157408E+05 2.321520E
-06 1.427888E+00 2.000000E-02
Fe                           -4.770035E+04 4.763881E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

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

```
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -9.0545770341E+07 J   System Enthalpy =  5.3052706211E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1123.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.298788E+04 3.430927E
-03 1.998168E+00 2.400000E-02
Si                          -1.831973E+05 3.013499E
-09 1.246195E+01 3.500000E-01
Mn                          -1.092880E+05 8.255843E
-06 1.164950E+01 6.400000E-01
Cr                          -9.195375E+04 5.284680E
-05 4.038772E+00 2.100000E-01
Mo                          -8.203501E+04 1.528840E
-04 4.169272E+00 4.000000E-01
Ni                          -8.672363E+04 9.253030E
-05 6.815471E+01 4.000000E+00
N                           -1.207974E+05 2.406778E
-06 1.427888E+00 2.000000E-02
Fe                          -5.140207E+04 4.066033E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667
```

```
Gibbs Energy = -9.7305323032E+07 J   System Enthalpy =  5.6027311706E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1173.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.792806E+04 2.633187E
-03 1.998168E+00 2.400000E-02
Si                          -1.869803E+05 4.718718E
-09 1.246195E+01 3.500000E-01
Mn                          -1.151578E+05 7.448328E
-06 1.164950E+01 6.400000E-01
Cr                          -9.789792E+04 4.371557E
-05 4.038772E+00 2.100000E-01
Mo                          -8.830456E+04 1.169030E
-04 4.169272E+00 4.000000E-01
Ni                          -9.165028E+04 8.295484E
-05 6.815471E+01 4.000000E+00
N                           -1.259744E+05 2.456980E
-06 1.427888E+00 2.000000E-02
Fe                          -5.517558E+04 3.491793E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.0419820252E+08 J   System Enthalpy =  5.9040341817E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K
```

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -6.291747E+04 2.055164E
-03 1.998168E+00 2.400000E-02
Si   -1.908197E+05 7.083505E
-09 1.246195E+01 3.500000E-01
Mn   -1.211091E+05 6.722503E
-06 1.164950E+01 6.400000E-01
Cr   -1.039150E+05 3.646497E
-05 4.038772E+00 2.100000E-01
Mo   -9.463626E+04 9.081622E
-05 4.169272E+00 4.000000E-01
Ni   -9.664924E+04 7.450585E
-05 6.815471E+01 4.000000E+00
N   -1.312642E+05 2.476372E
-06 1.427888E+00 2.000000E-02
Fe   -5.902015E+04 3.015076E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7934E+03 FCC_A1   0.0011142   0.0069486   0.0064956

                                Cr   Mo   Ni
 1.7934E+03 FCC_A1   0.0022520   0.0023247   0.0380021

                                N   Fe
 1.7934E+03 FCC_A1   0.0007962   0.9420667

Gibbs Energy = -1.1122036180E+08 J   System Enthalpy = 6.2091837149E+07 J
     1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1273.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -6.795189E+04 1.628621E
-03 1.998168E+00 2.400000E-02
Si   -1.947245E+05 1.023595E
-08 1.246195E+01 3.500000E-01

```
Mn                          -1.271420E+05 6.069464E
-06 1.164950E+01 6.400000E-01
Cr                          -1.100061E+05 3.063839E
-05 4.038772E+00 2.100000E-01
Mo                          -1.010304E+05 7.154071E
-05 4.169272E+00 4.000000E-01
Ni                          -1.017151E+05 6.705926E
-05 6.815471E+01 4.000000E+00
N                           -1.366602E+05 2.469466E
-06 1.427888E+00 2.000000E-02
Fe                          -6.293477E+04 2.616261E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.1836808713E+08 J   System Enthalpy =  6.5181857261E+07 J
     1323.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1323.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.303453E+04 1.307754E
-03 1.998168E+00 2.400000E-02
Si                          -1.986708E+05 1.433130E
-08 1.246195E+01 3.500000E-01
Mn                          -1.332496E+05 5.485021E
-06 1.164950E+01 6.400000E-01
Cr                          -1.161651E+05 2.592331E
-05 4.038772E+00 2.100000E-01
Mo                          -1.074801E+05 5.709283E
-05 4.169272E+00 4.000000E-01
Ni                          -1.068477E+05 6.047154E
```

-05 6.815471E+01 4.000000E+00
N   -1.421636E+05 2.439175E
-06 1.427888E+00 2.000000E-02
Fe   -6.691727E+04 2.280559E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7934E+03 FCC_A1   0.0011142   0.0069486   0.0064956

                                Cr   Mo   Ni
 1.7934E+03 FCC_A1   0.0022520   0.0023247   0.0380021

                                N   Fe
 1.7934E+03 FCC_A1   0.0007962   0.9420667

Gibbs Energy = -1.2563795936E+08 J   System Enthalpy = 6.8310477252E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1373.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -7.815577E+04 1.063417E
-03 1.998168E+00 2.400000E-02
Si   -2.026883E+05 1.945753E
-08 1.246195E+01 3.500000E-01
Mn   -1.394391E+05 4.957823E
-06 1.164950E+01 6.400000E-01
Cr   -1.224002E+05 2.205477E
-05 4.038772E+00 2.100000E-01
Mo   -1.139928E+05 4.606247E
-05 4.169272E+00 4.000000E-01
Ni   -1.120505E+05 5.460575E
-05 6.815471E+01 4.000000E+00
N   -1.477616E+05 2.391534E
-06 1.427888E+00 2.000000E-02
Fe   -7.096662E+04 1.996191E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.3302682109E+08 J   System Enthalpy =  7.1477784882E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -8.332363E+04 8.739425E
-04 1.998168E+00 2.400000E-02
Si                          -2.067364E+05 2.578904E
-08 1.246195E+01 3.500000E-01
Mn                          -1.456974E+05 4.487039E
-06 1.164950E+01 6.400000E-01
Cr                          -1.286995E+05 1.887538E
-05 4.038772E+00 2.100000E-01
Mo                          -1.205557E+05 3.756859E
-05 4.169272E+00 4.000000E-01
Ni                          -1.173151E+05 4.940540E
-05 6.815471E+01 4.000000E+00
N                           -1.534620E+05 2.327817E
-06 1.427888E+00 2.000000E-02
Fe                          -7.507961E+04 1.754251E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
```

```
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.4053174841E+08 J   System Enthalpy =  7.4683878423E+07 J
     1473.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1473.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -8.853087E+04 7.255222E
-04 1.998168E+00 2.400000E-02
Si                          -2.108476E+05 3.336100E
-08 1.246195E+01 3.500000E-01
Mn                          -1.520322E+05 4.063128E
-06 1.164950E+01 6.400000E-01
Cr                          -1.350713E+05 1.622949E
-05 4.038772E+00 2.100000E-01
Mo                          -1.271764E+05 3.092151E
-05 4.169272E+00 4.000000E-01
Ni                          -1.226433E+05 4.477185E
-05 6.815471E+01 4.000000E+00
N                           -1.592527E+05 2.253293E
-06 1.427888E+00 2.000000E-02
Fe                          -7.925692E+04 1.547069E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.4815002664E+08 J   System Enthalpy =  7.7928864976E+07 J
     1523.00
```

*** MULTIPHASE - Stage 1* Results ***

Temperature = 1523.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -9.378139E+04 6.076338E
-04 1.998168E+00 2.400000E-02
Si   -2.150047E+05 4.227921E
-08 1.246195E+01 3.500000E-01
Mn   -1.584389E+05 3.682349E
-06 1.164950E+01 6.400000E-01
Cr   -1.415109E+05 1.401829E
-05 4.038772E+00 2.100000E-01
Mo   -1.338494E+05 2.567171E
-05 4.169272E+00 4.000000E-01
Ni   -1.280306E+05 4.064616E
-05 6.815471E+01 4.000000E+00
N   -1.651350E+05 2.170076E
-06 1.427888E+00 2.000000E-02
Fe   -8.349860E+04 1.368686E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                               C   Si   Mn
 1.7934E+03 FCC_A1   0.0011142   0.0069486   0.0064956

                               Cr   Mo   Ni
 1.7934E+03 FCC_A1   0.0022520   0.0023247   0.0380021

                               N   Fe
 1.7934E+03 FCC_A1   0.0007962   0.9420667

Gibbs Energy = -1.5587912943E+08 J   System Enthalpy = 8.1212861052E+07 J
     1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1573.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg

```
C                          -9.906887E+04 5.132172E
-04 1.998168E+00 2.400000E-02
Si                         -2.192065E+05 5.260039E
-08 1.246195E+01 3.500000E-01
Mn                         -1.649160E+05 3.340166E
-06 1.164950E+01 6.400000E-01
Cr                         -1.480191E+05 1.215771E
-05 4.038772E+00 2.100000E-01
Mo                         -1.405748E+05 2.148071E
-05 4.169272E+00 4.000000E-01
Ni                         -1.334816E+05 3.694768E
-05 6.815471E+01 4.000000E+00
N                          -1.711048E+05 2.080955E
-06 1.427888E+00 2.000000E-02
Fe                         -8.779943E+04 1.214833E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.6371670371E+08 J   System Enthalpy =  8.4536299732E+07 J
     1623.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -1.043976E+05 4.366696E
-04 1.998168E+00 2.400000E-02
Si                         -2.234425E+05 6.440292E
-08 1.246195E+01 3.500000E-01
Mn                         -1.714565E+05 3.033776E
-06 1.164950E+01 6.400000E-01
Cr                         -1.545918E+05 1.058627E
```

-05 4.038772E+00 2.100000E-01
Mo   -1.473476E+05 1.810855E
-05 4.169272E+00 4.000000E-01
Ni   -1.389931E+05 3.363231E
-05 6.815471E+01 4.000000E+00
N   -1.771634E+05 1.987540E
-06 1.427888E+00 2.000000E-02
Fe   -9.215887E+04 1.081517E
-03 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7934E+03	FCC_A1	0.0011142	0.0069486	0.0064956
		Cr	Mo	Ni
1.7934E+03	FCC_A1	0.0022520	0.0023247	0.0380021
		N	Fe	
1.7934E+03	FCC_A1	0.0007962	0.9420667	

Gibbs Energy = -1.7166055908E+08 J   System Enthalpy = 8.7899341907E+07 J
     1673.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1673.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.097623E+05 3.741722E
-04 1.998168E+00 2.400000E-02
Si   -2.277330E+05 7.760100E
-08 1.246195E+01 3.500000E-01
Mn   -1.780713E+05 2.756589E
-06 1.164950E+01 6.400000E-01
Cr   -1.612345E+05 9.247884E
-06 4.038772E+00 2.100000E-01
Mo   -1.541761E+05 1.536083E
-05 4.169272E+00 4.000000E-01
Ni   -1.445577E+05 3.066993E
-05 6.815471E+01 4.000000E+00
N   -1.833026E+05 1.892536E
-06 1.427888E+00 2.000000E-02

```
Fe                          -9.657554E+04 9.655640E
-04 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.7970863943E+08 J   System Enthalpy =  9.1301913992E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.151605E+05 3.227541E
-04 1.998168E+00 2.400000E-02
Si                          -2.320711E+05 9.219074E
-08 1.246195E+01 3.500000E-01
Mn                          -1.847590E+05 2.505931E
-06 1.164950E+01 6.400000E-01
Cr                          -1.679518E+05 8.100022E
-06 4.038772E+00 2.100000E-01
Mo                          -1.610509E+05 1.311256E
-05 4.169272E+00 4.000000E-01
Ni                          -1.501833E+05 2.799900E
-05 6.815471E+01 4.000000E+00
N                           -1.895196E+05 1.797425E
-06 1.427888E+00 2.000000E-02
Fe                          -1.010522E+05 8.641086E
-04 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
```

```
                                C               Si              Mn
 1.7934E+03 FCC_A1             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 FCC_A1             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 FCC_A1             0.0007962       0.9420667

Gibbs Energy = -1.8785900952E+08 J   System Enthalpy =  9.4743887157E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1773.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.279820E+05 1.696663E
-04 1.998168E+00 2.400000E-02
Si                          -2.389804E+05 9.110424E
-08 1.246195E+01 3.500000E-01
Mn                          -1.926093E+05 2.116657E
-06 1.164950E+01 6.400000E-01
Cr                          -1.754275E+05 6.789399E
-06 4.038772E+00 2.100000E-01
Mo                          -1.707060E+05 9.352559E
-06 4.169272E+00 4.000000E-01
Ni                          -1.561077E+05 2.517683E
-05 6.815471E+01 4.000000E+00
N                           -1.978660E+05 1.481782E
-06 1.427888E+00 2.000000E-02
Fe                          -1.055295E+05 7.781382E
-04 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 4.2382E+02 LIQUID             0.0026522       0.0100878       0.0083984
 2.0041E+02 BCC_A2             0.0003826       0.0062995       0.0056365
 1.1692E+03 FCC_A1             0.0006820       0.0059219       0.0059531

                                Cr              Mo              Ni
 4.2382E+02 LIQUID             0.0025327       0.0031745       0.0410962
```

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 2.0041E+02 BCC_A2             0.0022383       0.0027835       0.0332680
 1.1692E+03 FCC_A1             0.0021525       0.0019381       0.0376920

                                N               Fe
 4.2382E+02 LIQUID             0.0012666       0.9307916
 2.0041E+02 BCC_A2             0.0003896       0.9490020
 1.1692E+03 FCC_A1             0.0006953       0.9449649

Gibbs Energy = -1.9611730249E+08 J   System Enthalpy =  1.0455360723E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.464571E+05 6.362883E
-05 1.998168E+00 2.400000E-02
Si                          -2.497789E+05 6.970048E
-08 1.246195E+01 3.500000E-01
Mn                          -2.031680E+05 1.509205E
-06 1.164950E+01 6.400000E-01
Cr                          -1.838028E+05 5.415114E
-06 4.038772E+00 2.100000E-01
Mo                          -1.825268E+05 5.890733E
-06 4.169272E+00 4.000000E-01
Ni                          -1.636455E+05 2.047223E
-05 6.815471E+01 4.000000E+00
N                           -2.120210E+05 8.415675E
-07 1.427888E+00 2.000000E-02
Fe                          -1.103379E+05 6.895311E
-04 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si               Mn
 1.7934E+03 LIQUID             0.0011142       0.0069486       0.0064956

                                Cr              Mo               Ni
 1.7934E+03 LIQUID             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 LIQUID             0.0007962       0.9420667
```

```
Gibbs Energy = -2.0515007396E+08 J   System Enthalpy =  1.2803152550E+08 J
     1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.519563E+05 5.785180E
-05 1.998168E+00 2.400000E-02
Si                          -2.546246E+05 7.927766E
-08 1.246195E+01 3.500000E-01
Mn                          -2.107245E+05 1.328666E
-06 1.164950E+01 6.400000E-01
Cr                          -1.905801E+05 4.843878E
-06 4.038772E+00 2.100000E-01
Mo                          -1.895315E+05 5.181263E
-06 4.169272E+00 4.000000E-01
Ni                          -1.698106E+05 1.838248E
-05 6.815471E+01 4.000000E+00
N                           -2.188310E+05 7.894882E
-07 1.427888E+00 2.000000E-02
Fe                          -1.153885E+05 6.054804E
-04 1.689545E+03 9.435600E+01
Total
1.793445E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7934E+03 LIQUID             0.0011142       0.0069486       0.0064956

                                Cr              Mo              Ni
 1.7934E+03 LIQUID             0.0022520       0.0023247       0.0380021

                                N               Fe
 1.7934E+03 LIQUID             0.0007962       0.9420667

Gibbs Energy = -2.1434404059E+08 J   System Enthalpy =  1.3212937545E+08 J


**************************************************************************
6 Ni
 MULTIPHASE OPTION ? set w(6)=6 !
```

```
 MULTIPHASE OPTION ? com pr br pr mol !
 NUMBER OF STEPS =  27

     573.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.319265E+04 6.271762E
-02 1.998168E+00 2.400000E-02
Si                          -1.468177E+05 4.134709E
-14 1.246195E+01 3.500000E-01
Mn                          -3.678342E+04 4.435178E
-04 1.164950E+01 6.400000E-01
Cr                          -3.306711E+04 9.675669E
-04 4.038772E+00 2.100000E-01
Mo                          -2.482162E+04 5.461605E
-03 4.169272E+00 4.000000E-01
Ni                          -2.566525E+04 4.575265E
-03 1.022321E+02 6.000000E+00
N                           -1.053690E+05 2.482074E
-10 1.427888E+00 2.000000E-02
Fe                          -1.868171E+04 1.981614E
-02 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7835E+03 BCC_A2             0.0000000       0.0069872       0.0065267
 8.1708E+00 FCC_A1             0.2445499       0.0000000       0.0010851

                                Cr              Mo              Ni
 1.7835E+03 BCC_A2             0.0012400       0.0007094       0.0573198
 8.1708E+00 FCC_A1             0.2236194       0.3554208       0.0000001

                                N               Fe
 1.7835E+03 BCC_A2             0.0000000       0.9272169
 8.1708E+00 FCC_A1             0.1747559       0.0005687

Gibbs Energy = -3.6188933955E+07 J   System Enthalpy =  1.3242899011E+07 J
     623.000
```

*** MULTIPHASE - Stage 1* Results ***

Temperature =   623.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C					
		1.598189E+03	1.361428E+00	1.998168E+00	2.400000E-02
Si			-1.529167E+05	1.510843E	
-13	1.246195E+01	3.500000E-01			
Mn			-5.619422E+04	1.943506E	
-05	1.164950E+01	6.400000E-01			
Cr			-4.171027E+04	3.183786E	
-04	4.038772E+00	2.100000E-01			
Mo			-2.558561E+04	7.159147E	
-03	4.169272E+00	4.000000E-01			
Ni			-3.312854E+04	1.668976E	
-03	1.022321E+02	6.000000E+00			
N			-5.744295E+04	1.527183E	
-05	1.427888E+00	2.000000E-02			
Fe			-2.084449E+04	1.787987E	
-02	1.653733E+03	9.235600E+01			
Total					
		1.791710E+03	1.000000E+02		

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
3.1178E+00	LIQUID	0.0000008	0.0000000	0.0196010
1.6503E+03	BCC_A2	0.0000009	0.0075515	0.0002918
1.3056E+02	FCC_A1	0.0004010	0.0000000	0.0832075
7.7770E+00	CEMENTITE	0.2500000	0.0000000	0.0312553
		Cr	Mo	Ni
3.1178E+00	LIQUID	0.3017626	0.1398858	0.0000037
1.6503E+03	BCC_A2	0.0005293	0.0018479	0.0262080
1.3056E+02	FCC_A1	0.0011581	0.0045807	0.4508972
7.7770E+00	CEMENTITE	0.2665779	0.0109930	0.0143992
		N	Fe	
3.1178E+00	LIQUID	0.4184851	0.1202610	
1.6503E+03	BCC_A2	0.0000177	0.9635527	
1.3056E+02	FCC_A1	0.0007193	0.4590363	
7.7770E+00	CEMENTITE	0.0000000	0.4267746	

Gibbs Energy = -4.0772243076E+07 J System Enthalpy = 1.5436747769E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 673.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-1.943570E+02	9.658628E-01	1.998168E+00	2.400000E-02
Si		-1.552217E+05	8.970859E-13	1.246195E+01	3.500000E-01
Mn		-5.919596E+04	2.544741E-05	1.164950E+01	6.400000E-01
Cr		-4.518191E+04	3.113952E-04	4.038772E+00	2.100000E-01
Mo		-3.095262E+04	3.959907E-03	4.169272E+00	4.000000E-01
Ni		-3.695856E+04	1.353779E-03	1.022321E+02	6.000000E+00
N		-6.008237E+04	2.171939E-05	1.427888E+00	2.000000E-02
Fe		-2.334579E+04	1.541953E-02	1.653733E+03	9.235600E+01
Total				1.791710E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
2.7917E+00	LIQUID	0.0000004	0.0000000	0.0181587
1.6446E+03	BCC_A2	0.0000034	0.0075776	0.0005589
1.3685E+02	FCC_A1	0.0008607	0.0000001	0.0761297
7.4995E+00	CEMENTITE	0.2500000	0.0000000	0.0348283
		Cr	Mo	Ni
2.7917E+00	LIQUID	0.3369143	0.0663747	0.0000066
1.6446E+03	BCC_A2	0.0008085	0.0019367	0.0289636
1.3685E+02	FCC_A1	0.0016715	0.0051341	0.3982361
7.4995E+00	CEMENTITE	0.2053277	0.0128501	0.0133199
		N	Fe	
2.7917E+00	LIQUID	0.4004092	0.1781361	
1.6446E+03	BCC_A2	0.0000429	0.9601085	
1.3685E+02	FCC_A1	0.0017506	0.5162173	

```
 7.4995E+00 CEMENTITE          0.0000000       0.4836740

Gibbs Energy = -4.5407377980E+07 J   System Enthalpy =  1.8634916483E+07 J
     723.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.443456E+03 4.775088E
-01 1.998168E+00 2.400000E-02
Si                          -1.551241E+05 6.208957E
-12 1.246195E+01 3.500000E-01
Mn                          -5.292837E+04 1.500293E
-04 1.164950E+01 6.400000E-01
Cr                          -5.031270E+04 2.318175E
-04 4.038772E+00 2.100000E-01
Mo                          -3.637411E+04 2.355824E
-03 4.169272E+00 4.000000E-01
Ni                          -3.772085E+04 1.882987E
-03 1.022321E+02 6.000000E+00
N                           -1.101327E+05 1.105191E
-08 1.427888E+00 2.000000E-02
Fe                          -2.616976E+04 1.286349E
-02 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                               C              Si             Mn
 1.7818E+03 BCC_A2            0.0000064      0.0069941      0.0059982
 3.7471E+00 FCC_A1            0.1178898      0.0000000      0.0000106
 6.1802E+00 CEMENTITE         0.2500000      0.0000000      0.1556451

                               Cr             Mo             Ni
 1.7818E+03 BCC_A2            0.0010167      0.0020748      0.0572988
 3.7471E+00 FCC_A1            0.3977974      0.1029763      0.0000000
 6.1802E+00 CEMENTITE         0.1191916      0.0140174      0.0223272

                               N              Fe
 1.7818E+03 BCC_A2            0.0000000      0.9266110
 3.7471E+00 FCC_A1            0.3810518      0.0002742
 6.1802E+00 CEMENTITE         0.0000000      0.4388186
```

Gibbs Energy = -5.0202336085E+07 J System Enthalpy = 2.2393026203E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 773.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-4.428480E+03	5.020625E-01	1.998168E+00	2.400000E-02
Si		-1.604413E+05	1.440870E-11	1.246195E+01	3.500000E-01
Mn		-6.667250E+04	3.124577E-05	1.164950E+01	6.400000E-01
Cr		-5.228868E+04	2.929125E-04	4.038772E+00	2.100000E-01
Mo		-4.261976E+04	1.318525E-03	4.169272E+00	4.000000E-01
Ni		-4.546986E+04	8.462538E-04	1.022321E+02	6.000000E+00
N		-6.683392E+04	3.047082E-05	1.427888E+00	2.000000E-02
Fe		-2.872063E+04	1.146260E-02	1.653733E+03	9.235600E+01
Total				1.791710E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.5909E+03	BCC_A2	0.0000246	0.0078305	0.0013827
1.9568E+02	FCC_A1	0.0034034	0.0000245	0.0473656
5.1723E+00	CEMENTITE	0.2499999	0.0000000	0.0350609
		Cr	Mo	Ni
1.5909E+03	BCC_A2	0.0016326	0.0019017	0.0318234
1.9568E+02	FCC_A1	0.0034314	0.0055481	0.2634091
5.1723E+00	CEMENTITE	0.1488775	0.0112658	0.0119584
		N	Fe	
1.5909E+03	BCC_A2	0.0001497	0.9552548	
1.9568E+02	FCC_A1	0.0060800	0.6707380	
5.1723E+00	CEMENTITE	0.0000001	0.5428373	

Gibbs Energy = -5.5411259831E+07 J   System Enthalpy = 2.5710230490E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   823.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -6.240372E+03 4.017376E
-01 1.998168E+00 2.400000E-02
Si   -1.632570E+05 4.350825E
-11 1.246195E+01 3.500000E-01
Mn   -7.141515E+04 2.934246E
-05 1.164950E+01 6.400000E-01
Cr   -5.675428E+04 2.500217E
-04 4.038772E+00 2.100000E-01
Mo   -4.856814E+04 8.270405E
-04 4.169272E+00 4.000000E-01
Ni   -5.024585E+04 6.472141E
-04 1.022321E+02 6.000000E+00
N   -7.498598E+04 1.741273E
-05 1.427888E+00 2.000000E-02
Fe   -3.158201E+04 9.898868E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.5190E+03 BCC_A2   0.0000588   0.0081676   0.0018047
 2.7209E+02 FCC_A1   0.0064818   0.0002023   0.0326710
 5.8060E-01 CEMENTITE   0.2500000   0.0000000   0.0318574

                                Cr   Mo   Ni
 1.5190E+03 BCC_A2   0.0019355   0.0019014   0.0315529
 2.7209E+02 FCC_A1   0.0037846   0.0046845   0.1995490
 5.8060E-01 CEMENTITE   0.1187985   0.0109902   0.0109342

                                N   Fe
 1.5190E+03 BCC_A2   0.0001265   0.9544526
 2.7209E+02 FCC_A1   0.0045417   0.7480850
 5.8060E-01 CEMENTITE   0.0000000   0.5774197

Gibbs Energy = -6.0782292275E+07 J   System Enthalpy = 2.9699412623E+07 J

```
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.400405E+04 1.452480E
-01 1.998168E+00 2.400000E-02
Si                          -1.661305E+05 1.148371E
-10 1.246195E+01 3.500000E-01
Mn                          -7.694385E+04 2.490559E
-05 1.164950E+01 6.400000E-01
Cr                          -6.234348E+04 1.861511E
-04 4.038772E+00 2.100000E-01
Mo                          -5.434361E+04 5.604204E
-04 4.169272E+00 4.000000E-01
Ni                          -5.536060E+04 4.871534E
-04 1.022321E+02 6.000000E+00
N                           -8.293148E+04 1.091553E
-05 1.427888E+00 2.000000E-02
Fe                          -3.456121E+04 8.553315E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.3987E+03 BCC_A2             0.0000562       0.0086784       0.0021222
 3.9301E+02 FCC_A1             0.0048842       0.0008228       0.0220892

                                Cr              Mo              Ni
 1.3987E+03 BCC_A2             0.0019502       0.0019739       0.0304409
 3.9301E+02 FCC_A1             0.0033360       0.0035837       0.1517897

                                N               Fe
 1.3987E+03 BCC_A2             0.0001123       0.9546659
 3.9301E+02 FCC_A1             0.0032335       0.8102609

Gibbs Energy = -6.6404965259E+07 J   System Enthalpy =  3.3980438538E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K
```

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -2.314389E+04 4.900819E
-02 1.998168E+00 2.400000E-02
Si                          -1.689707E+05 2.740363E
-10 1.246195E+01 3.500000E-01
Mn                          -8.342577E+04 1.900500E
-05 1.164950E+01 6.400000E-01
Cr                          -6.820100E+04 1.381815E
-04 4.038772E+00 2.100000E-01
Mo                          -6.005087E+04 3.996433E
-04 4.169272E+00 4.000000E-01
Ni                          -6.102167E+04 3.521551E
-04 1.022321E+02 6.000000E+00
N                           -9.156736E+04 6.578520E
-06 1.427888E+00 2.000000E-02
Fe                          -3.765314E+04 7.399085E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                               C              Si             Mn
 1.1635E+03 BCC_A2            0.0000455      0.0095219      0.0022446
 6.2819E+02 FCC_A1            0.0030966      0.0022016      0.0143872

                               Cr             Mo             Ni
 1.1635E+03 BCC_A2            0.0019180      0.0020847      0.0279252
 6.2819E+02 FCC_A1            0.0028767      0.0027757      0.1110187

                               N              Fe
 1.1635E+03 BCC_A2            0.0000935      0.9561667
 6.2819E+02 FCC_A1            0.0020999      0.8615435

Gibbs Energy = -7.2286842721E+07 J   System Enthalpy =  3.8805539265E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   973.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
```

```
C                          -3.315705E+04 1.659732E
-02 1.998168E+00 2.400000E-02
Si                         -1.714957E+05 6.217811E
-10 1.246195E+01 3.500000E-01
Mn                         -9.090906E+04 1.317501E
-05 1.164950E+01 6.400000E-01
Cr                         -7.425100E+04 1.032765E
-04 4.038772E+00 2.100000E-01
Mo                         -6.545420E+04 3.063643E
-04 4.169272E+00 4.000000E-01
Ni                         -6.738776E+04 2.412345E
-04 1.022321E+02 6.000000E+00
N                          -1.010289E+05 3.771308E
-06 1.427888E+00 2.000000E-02
Fe                         -4.086606E+04 6.400255E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 6.8390E+02 BCC_A2             0.0000339       0.0110391       0.0021843
 1.1078E+03 FCC_A1             0.0017828       0.0044342       0.0091673

                                Cr              Mo              Ni
 6.8390E+02 BCC_A2             0.0018707       0.0022947       0.0240427
 1.1078E+03 FCC_A1             0.0024909       0.0023469       0.0774406

                                N               Fe
 6.8390E+02 BCC_A2             0.0000725       0.9584621
 1.1078E+03 FCC_A1             0.0012442       0.9010930

Gibbs Energy = -7.8449568541E+07 J   System Enthalpy =  4.4375584722E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1023.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -4.240550E+04 6.836271E
-03 1.998168E+00 2.400000E-02
Si                         -1.735289E+05 1.379722E
-09 1.246195E+01 3.500000E-01
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Mn                          -9.859631E+04 9.242177E
-06 1.164950E+01 6.400000E-01
Cr                          -8.028920E+04 7.952734E
-05 4.038772E+00 2.100000E-01
Mo                          -7.033253E+04 2.563855E
-04 4.169272E+00 4.000000E-01
Ni                          -7.382982E+04 1.699518E
-04 1.022321E+02 6.000000E+00
N                           -1.098660E+05 2.456731E
-06 1.427888E+00 2.000000E-02
Fe                          -4.425712E+04 5.498915E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -8.4909752867E+07 J   System Enthalpy =  4.9738690166E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.723763E+04 5.017485E
-03 1.998168E+00 2.400000E-02
Si                          -1.772245E+05 2.359186E
-09 1.246195E+01 3.500000E-01
Mn                          -1.042774E+05 8.390889E
-06 1.164950E+01 6.400000E-01
Cr                          -8.608852E+04 6.445201E
-05 4.038772E+00 2.100000E-01
Mo                          -7.633642E+04 1.922939E
-04 4.169272E+00 4.000000E-01
Ni                          -7.842148E+04 1.522178E
```

-04 1.022321E+02 6.000000E+00
N   -1.148109E+05 2.576565E
-06 1.427888E+00 2.000000E-02
Fe   -4.788813E+04 4.664662E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7917E+03 FCC_A1   0.0011152   0.0069553   0.0065019

                                Cr   Mo   Ni
 1.7917E+03 FCC_A1   0.0022541   0.0023270   0.0570584

                                N   Fe
 1.7917E+03 FCC_A1   0.0007969   0.9229911

Gibbs Energy = -9.1561175440E+07 J   System Enthalpy = 5.2671065561E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1123.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -5.211850E+04 3.765721E
-03 1.998168E+00 2.400000E-02
Si   -1.809862E+05 3.818697E
-09 1.246195E+01 3.500000E-01
Mn   -1.100537E+05 7.605865E
-06 1.164950E+01 6.400000E-01
Cr   -9.196786E+04 5.276704E
-05 4.038772E+00 2.100000E-01
Mo   -8.240518E+04 1.469416E
-04 4.169272E+00 4.000000E-01
Ni   -8.309226E+04 1.365172E
-04 1.022321E+02 6.000000E+00
N   -1.198735E+05 2.657089E
-06 1.427888E+00 2.000000E-02
Fe   -5.159747E+04 3.981829E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -9.8350173943E+07 J   System Enthalpy =  5.5641909453E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1173.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.704780E+04 2.881902E
-03 1.998168E+00 2.400000E-02
Si                          -1.848151E+05 5.891730E
-09 1.246195E+01 3.500000E-01
Mn                          -1.159146E+05 6.892230E
-06 1.164950E+01 6.400000E-01
Cr                          -9.792228E+04 4.360654E
-05 4.038772E+00 2.100000E-01
Mo                          -8.853907E+04 1.141256E
-04 4.169272E+00 4.000000E-01
Ni                          -8.783155E+04 1.227124E
-04 1.022321E+02 6.000000E+00
N                           -1.250513E+05 2.700886E
-06 1.427888E+00 2.000000E-02
Fe                          -5.537875E+04 3.419808E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 6.1494E-06 BCC_A2             0.0000002       0.0096952       0.0000002
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019
```

```
                                Cr              Mo              Ni
 6.1494E-06 BCC_A2             0.0000002       0.0000002       0.0301136
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 6.1494E-06 BCC_A2             0.0000002       0.9601903
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.0527233304E+08 J   System Enthalpy =  5.8651238558E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.202791E+04 2.243050E
-03 1.998168E+00 2.400000E-02
Si                          -1.886905E+05 8.733398E
-09 1.246195E+01 3.500000E-01
Mn                          -1.218564E+05 6.246180E
-06 1.164950E+01 6.400000E-01
Cr                          -1.039490E+05 3.634320E
-05 4.038772E+00 2.100000E-01
Mo                          -9.473451E+04 8.994296E
-05 4.169272E+00 4.000000E-01
Ni                          -9.264933E+04 1.104138E
-04 1.022321E+02 6.000000E+00
N                           -1.303409E+05 2.711736E
-06 1.427888E+00 2.000000E-02
Fe                          -5.923326E+04 2.952543E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911
```

```
Gibbs Energy = -1.1232361538E+08 J   System Enthalpy =  6.1699092718E+07 J
     1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1273.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.705371E+04 1.772858E
-03 1.998168E+00 2.400000E-02
Si                          -1.926206E+05 1.248685E
-08 1.246195E+01 3.500000E-01
Mn                          -1.278769E+05 5.662370E
-06 1.164950E+01 6.400000E-01
Cr                          -1.100468E+05 3.052080E
-05 4.038772E+00 2.100000E-01
Mo                          -1.009894E+05 7.181819E
-05 4.169272E+00 4.000000E-01
Ni                          -9.753380E+04 9.954622E
-05 1.022321E+02 6.000000E+00
N                           -1.357383E+05 2.694210E
-06 1.427888E+00 2.000000E-02
Fe                          -6.315467E+04 2.562466E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7917E+03 FCC_A1              0.0011152       0.0069553       0.0065019

                                 Cr              Mo              Ni
 1.7917E+03 FCC_A1              0.0022541       0.0023270       0.0570584

                                 N               Fe
 1.7917E+03 FCC_A1              0.0007969       0.9229911

Gibbs Energy = -1.1950031606E+08 J   System Enthalpy =  6.4785530339E+07 J
     1323.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1323.0000 K
```

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.212413E+04 1.420592E
-03 1.998168E+00 2.400000E-02
Si                          -1.966213E+05 1.726632E
-08 1.246195E+01 3.500000E-01
Mn                          -1.339792E+05 5.133010E
-06 1.164950E+01 6.400000E-01
Cr                          -1.162197E+05 2.579492E
-05 4.038772E+00 2.100000E-01
Mo                          -1.073071E+05 5.799770E
-05 4.169272E+00 4.000000E-01
Ni                          -1.024832E+05 8.992119E
-05 1.022321E+02 6.000000E+00
N                           -1.412343E+05 2.654186E
-06 1.427888E+00 2.000000E-02
Fe                          -6.714908E+04 2.233003E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.2679902401E+08 J   System Enthalpy =  6.7910625092E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1373.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.724047E+04 1.152192E
-03 1.998168E+00 2.400000E-02
Si                          -2.006519E+05 2.325733E
-08 1.246195E+01 3.500000E-01
```

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Mn                          -1.401537E+05 4.656983E
-06 1.164950E+01 6.400000E-01
Cr                          -1.224590E+05 2.194157E
-05 4.038772E+00 2.100000E-01
Mo                          -1.136781E+05 4.735016E
-05 4.169272E+00 4.000000E-01
Ni                          -1.075009E+05 8.134311E
-05 1.022321E+02 6.000000E+00
N                           -1.468333E+05 2.594116E
-06 1.427888E+00 2.000000E-02
Fe                          -7.121227E+04 1.953696E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.3421658923E+08 J   System Enthalpy =  7.1074463016E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -8.239714E+04 9.451290E
-04 1.998168E+00 2.400000E-02
Si                          -2.047550E+05 3.049038E
-08 1.246195E+01 3.500000E-01
Mn                          -1.464058E+05 4.226278E
-06 1.164950E+01 6.400000E-01
Cr                          -1.287711E+05 1.876143E
-05 4.038772E+00 2.100000E-01
Mo                          -1.201079E+05 3.901766E
-05 4.169272E+00 4.000000E-01
Ni                          -1.125825E+05 7.370435E
```

-05 1.022321E+02 6.000000E+00
N   -1.525247E+05 2.519732E
-06 1.427888E+00 2.000000E-02
Fe   -7.533233E+04 1.717178E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7917E+03	FCC_A1	0.0011152	0.0069553	0.0065019
		Cr	Mo	Ni
1.7917E+03	FCC_A1	0.0022541	0.0023270	0.0570584
		N	Fe	
1.7917E+03	FCC_A1	0.0007969	0.9229911	

Gibbs Energy = -1.4175009464E+08 J   System Enthalpy = 7.4277140512E+07 J
     1473.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1473.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-8.759733E+04	7.829869E		
-04	1.998168E+00	2.400000E-02			
Si		-2.088935E+05	3.913195E		
-08	1.246195E+01	3.500000E-01			
Mn		-1.527282E+05	3.838677E		
-06	1.164950E+01	6.400000E-01			
Cr		-1.351496E+05	1.612598E		
-05	4.038772E+00	2.100000E-01			
Mo		-1.265894E+05	3.243955E		
-05	4.169272E+00	4.000000E-01			
Ni		-1.177263E+05	6.689072E		
-05	1.022321E+02	6.000000E+00			
N		-1.583112E+05	2.433359E		
-06	1.427888E+00	2.000000E-02			
Fe		-7.951922E+04	1.514288E		
-03	1.653733E+03	9.235600E+01			
Total					
1.791710E+03	1.000000E+02				

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.4939683180E+08 J   System Enthalpy =  7.7518762568E+07 J
     1523.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1523.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.283292E+04 6.548938E
-04 1.998168E+00 2.400000E-02
Si                          -2.130893E+05 4.918312E
-08 1.246195E+01 3.500000E-01
Mn                          -1.591273E+05 3.487520E
-06 1.164950E+01 6.400000E-01
Cr                          -1.416020E+05 1.391778E
-05 4.038772E+00 2.100000E-01
Mo                          -1.331293E+05 2.717391E
-05 4.169272E+00 4.000000E-01
Ni                          -1.229407E+05 6.075535E
-05 1.022321E+02 6.000000E+00
N                           -1.641818E+05 2.339727E
-06 1.427888E+00 2.000000E-02
Fe                          -8.377099E+04 1.339559E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
```

```
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.5715428013E+08 J   System Enthalpy =  8.0799443512E+07 J
     1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.811377E+04 5.520983E
-04 1.998168E+00 2.400000E-02
Si                          -2.173202E+05 6.076135E
-08 1.246195E+01 3.500000E-01
Mn                          -1.655905E+05 3.172286E
-06 1.164950E+01 6.400000E-01
Cr                          -1.481166E+05 1.206741E
-05 4.038772E+00 2.100000E-01
Mo                          -1.397151E+05 2.294005E
-05 4.169272E+00 4.000000E-01
Ni                          -1.282068E+05 5.530218E
-05 1.022321E+02 6.000000E+00
N                           -1.701451E+05 2.239389E
-06 1.427888E+00 2.000000E-02
Fe                          -8.807998E+04 1.189050E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.6502009186E+08 J   System Enthalpy =  8.4119614079E+07 J
     1623.00
```

*** MULTIPHASE - Stage 1* Results ***

Temperature = 1623.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.034351E+05 4.689514E
-04 1.998168E+00 2.400000E-02
Si   -2.215992E+05 7.382946E
-08 1.246195E+01 3.500000E-01
Mn   -1.721227E+05 2.887628E
-06 1.164950E+01 6.400000E-01
Cr   -1.546973E+05 1.050380E
-05 4.038772E+00 2.100000E-01
Mo   -1.463501E+05 1.949788E
-05 4.169272E+00 4.000000E-01
Ni   -1.335246E+05 5.043747E
-05 1.022321E+02 6.000000E+00
N   -1.761943E+05 2.135521E
-06 1.427888E+00 2.000000E-02
Fe   -9.244597E+04 1.058750E
-03 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7917E+03 FCC_A1   0.0011152   0.0069553   0.0065019

                                Cr   Mo   Ni
 1.7917E+03 FCC_A1   0.0022541   0.0023270   0.0570584

                                N   Fe
 1.7917E+03 FCC_A1   0.0007969   0.9229911

Gibbs Energy = -1.7299208150E+08 J   System Enthalpy = 8.7479432710E+07 J
     1673.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1673.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg

```
C                          -1.087898E+05 4.012678E
-04 1.998168E+00 2.400000E-02
Si                         -2.259289E+05 8.834778E
-08 1.246195E+01 3.500000E-01
Mn                         -1.787258E+05 2.629900E
-06 1.164950E+01 6.400000E-01
Cr                         -1.613505E+05 9.171070E
-06 4.038772E+00 2.100000E-01
Mo                         -1.530397E+05 1.666843E
-05 4.169272E+00 4.000000E-01
Ni                         -1.389122E+05 4.602297E
-05 1.022321E+02 6.000000E+00
N                          -1.823205E+05 2.030993E
-06 1.427888E+00 2.000000E-02
Fe                         -9.687527E+04 9.449810E
-04 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 FCC_A1             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 FCC_A1             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 FCC_A1             0.0007969       0.9229911

Gibbs Energy = -1.8106819743E+08 J   System Enthalpy =  9.0878823285E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -1.141823E+05 3.455603E
-04 1.998168E+00 2.400000E-02
Si                         -2.302885E+05 1.044062E
-07 1.246195E+01 3.500000E-01
Mn                         -1.854002E+05 2.396242E
-06 1.164950E+01 6.400000E-01
Cr                         -1.680682E+05 8.034460E
```

-06 4.038772E+00 2.100000E-01
Mo   -1.597835E+05 1.432546E
-05 4.169272E+00 4.000000E-01
Ni   -1.443485E+05 4.207515E
-05 1.022321E+02 6.000000E+00
N   -1.885290E+05 1.926107E
-06 1.427888E+00 2.000000E-02
Fe   -1.013554E+05 8.460129E
-04 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7917E+03	FCC_A1	0.0011152	0.0069553	0.0065019
		Cr	Mo	Ni
1.7917E+03	FCC_A1	0.0022541	0.0023270	0.0570584
		N	Fe	
1.7917E+03	FCC_A1	0.0007969	0.9229911	

Gibbs Energy = -1.8924650860E+08 J   System Enthalpy = 9.4317654393E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1773.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.351526E+05 1.043156E
-04 1.998168E+00 2.400000E-02
Si   -2.403810E+05 8.284646E
-08 1.246195E+01 3.500000E-01
Mn   -1.949772E+05 1.802560E
-06 1.164950E+01 6.400000E-01
Cr   -1.762225E+05 6.432977E
-06 4.038772E+00 2.100000E-01
Mo   -1.718636E+05 8.646248E
-06 4.169272E+00 4.000000E-01
Ni   -1.508940E+05 3.585921E
-05 1.022321E+02 6.000000E+00
N   -2.008734E+05 1.208327E
-06 1.427888E+00 2.000000E-02

```
Fe                          -1.057512E+05 7.665247E
-04 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.0647E+03 LIQUID             0.0016038       0.0083471       0.0073857
 7.2699E+02 FCC_A1             0.0003996       0.0049170       0.0052074

                                Cr              Mo              Ni
 1.0647E+03 LIQUID             0.0023844       0.0027856       0.0591525
 7.2699E+02 FCC_A1             0.0020633       0.0016552       0.0539914

                                N               Fe
 1.0647E+03 LIQUID             0.0009751       0.9173656
 7.2699E+02 FCC_A1             0.0005360       0.9312300

Gibbs Energy = -1.9756017816E+08 J   System Enthalpy =  1.1297299352E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.460616E+05 6.531061E
-05 1.998168E+00 2.400000E-02
Si                          -2.482260E+05 7.721994E
-08 1.246195E+01 3.500000E-01
Mn                          -2.040010E+05 1.428510E
-06 1.164950E+01 6.400000E-01
Cr                          -1.837539E+05 5.432635E
-06 4.038772E+00 2.100000E-01
Mo                          -1.816320E+05 6.248966E
-06 4.169272E+00 4.000000E-01
Ni                          -1.574769E+05 3.075460E
-05 1.022321E+02 6.000000E+00
N                           -2.108600E+05 9.085633E
-07 1.427888E+00 2.000000E-02
Fe                          -1.106557E+05 6.752251E
-04 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02
```

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 LIQUID             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
 1.7917E+03 LIQUID             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 LIQUID             0.0007969       0.9229911

Gibbs Energy = -2.0665744203E+08 J   System Enthalpy =  1.2746644369E+08 J
     1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.515633E+05 5.933013E
-05 1.998168E+00 2.400000E-02
Si                          -2.531272E+05 8.727903E
-08 1.246195E+01 3.500000E-01
Mn                          -2.115471E+05 1.260310E
-06 1.164950E+01 6.400000E-01
Cr                          -1.905433E+05 4.855347E
-06 4.038772E+00 2.100000E-01
Mo                          -1.886250E+05 5.491838E
-06 4.169272E+00 4.000000E-01
Ni                          -1.634731E+05 2.761469E
-05 1.022321E+02 6.000000E+00
N                           -2.176580E+05 8.512505E
-07 1.427888E+00 2.000000E-02
Fe                          -1.157222E+05 5.926456E
-04 1.653733E+03 9.235600E+01
Total
1.791710E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7917E+03 LIQUID             0.0011152       0.0069553       0.0065019

                                Cr              Mo              Ni
```

```
 1.7917E+03 LIQUID             0.0022541       0.0023270       0.0570584

                                N               Fe
 1.7917E+03 LIQUID             0.0007969       0.9229911

Gibbs Energy = -2.1587713166E+08 J   System Enthalpy =  1.3155536244E+08 J

                     ************************************
                     * WARNING/ERRORS HAVE BEEN DETECTED *
                     ************************************

   3240 Warnings: Multiphase, temperature range violation -  Unary data

 MULTIPHASE OPTION ?

*************************************************************************
8 Ni
 MULTIPHASE OPTION ? set w(6)=8 !
 MULTIPHASE OPTION ? com pr br pr mol !
 NUMBER OF STEPS =  27

     573.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.306298E+04 6.444810E
-02 1.998168E+00 2.400000E-02
Si                          -1.440176E+05 7.442180E
-14 1.246195E+01 3.500000E-01
Mn                          -3.779830E+04 3.584233E
-04 1.164950E+01 6.400000E-01
Cr                          -3.353397E+04 8.772482E
-04 4.038772E+00 2.100000E-01
Mo                          -2.493047E+04 5.338228E
-03 4.169272E+00 4.000000E-01
Ni                          -2.433895E+04 6.043930E
-03 1.363094E+02 8.000000E+00
N                           -1.047317E+05 2.837300E
-10 1.427888E+00 2.000000E-02
Fe                          -1.879402E+04 1.935449E
-02 1.617920E+03 9.035600E+01
Total
```

1.789975E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7818E+03	BCC_A2	0.0000000	0.0069940	0.0065337
8.1634E+00	FCC_A1	0.2447704	0.0000000	0.0009400
		Cr	Mo	Ni
1.7818E+03	BCC_A2	0.0012612	0.0006933	0.0765005
8.1634E+00	FCC_A1	0.2194523	0.3594005	0.0000002
		N	Fe	
1.7818E+03	BCC_A2	0.0000000	0.9080173	
8.1634E+00	FCC_A1	0.1749134	0.0005232	

Gibbs Energy = -3.6368859867E+07 J System Enthalpy = 1.3579321011E+07 J
     623.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 623.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C					
1.969643E+03	1.462642E+00	1.998168E+00	2.400000E-02		
Si		-1.524203E+05	1.662779E		
-13	1.246195E+01	3.500000E-01			
Mn		-5.811887E+04	1.340356E		
-05	1.164950E+01	6.400000E-01			
Cr		-4.185649E+04	3.095173E		
-04	4.038772E+00	2.100000E-01			
Mo		-2.582967E+04	6.829653E		
-03	4.169272E+00	4.000000E-01			
Ni		-3.282143E+04	1.770920E		
-03	1.363094E+02	8.000000E+00			
N		-5.719194E+04	1.603009E		
-05	1.427888E+00	2.000000E-02			
Fe		-2.085730E+04	1.783571E		
-02	1.617920E+03	9.035600E+01			
Total					
1.789975E+03	1.000000E+02				

Amount	Phase	Mole fraction of component within phase
compnt moles		

		C	Si	Mn
3.1567E+00	LIQUID	0.0000003	0.0000000	0.0116191
1.5748E+03	BCC_A2	0.0000010	0.0079136	0.0002048
2.0433E+02	FCC_A1	0.0003099	0.0000000	0.0544198
7.7331E+00	CEMENTITE	0.2500000	0.0000000	0.0221141

		Cr	Mo	Ni
3.1567E+00	LIQUID	0.3211244	0.1084546	0.0000030
1.5748E+03	BCC_A2	0.0005174	0.0017485	0.0275565
2.0433E+02	FCC_A1	0.0008975	0.0048360	0.4541621
7.7331E+00	CEMENTITE	0.2621153	0.0110273	0.0152059

		N	Fe
3.1567E+00	LIQUID	0.4114277	0.1473709
1.5748E+03	BCC_A2	0.0000184	0.9620399
2.0433E+02	FCC_A1	0.0004905	0.4848842
7.7331E+00	CEMENTITE	0.0000000	0.4395374

Gibbs Energy = -4.1148042766E+07 J System Enthalpy = 1.5499192606E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 673.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-9.478254E+02	8.441833E		
-01	1.998168E+00	2.400000E-02			
Si		-1.545524E+05	1.011066E		
-12	1.246195E+01	3.500000E-01			
Mn		-6.213654E+04	1.504587E		
-05	1.164950E+01	6.400000E-01			
Cr		-4.400758E+04	3.841090E		
-04	4.038772E+00	2.100000E-01			
Mo		-3.143880E+04	3.630369E		
-03	4.169272E+00	4.000000E-01			
Ni		-3.652931E+04	1.461717E		
-03	1.363094E+02	8.000000E+00			
N		-5.283981E+04	7.924306E		
-05	1.427888E+00	2.000000E-02			
Fe		-2.336377E+04	1.537006E		
-02	1.617920E+03	9.035600E+01			
Total					
1.789975E+03	1.000000E+02				

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.5548E+03 BCC_A2              0.0000029       0.0080149       0.0003386
 2.2773E+02 FCC_A1              0.0006360       0.0000001       0.0481855
 7.3954E+00 CEMENTITE           0.2500000       0.0000000       0.0202093

                                 Cr              Mo              Ni
 1.5548E+03 BCC_A2              0.0010095       0.0017563       0.0309186
 2.2773E+02 FCC_A1              0.0022460       0.0060343       0.3869444
 7.3954E+00 CEMENTITE           0.2647213       0.0086871       0.0155560

                                 N               Fe
 1.5548E+03 BCC_A2              0.0001550       0.9578042
 2.2773E+02 FCC_A1              0.0052116       0.5507421
 7.3954E+00 CEMENTITE           0.0000000       0.4408263

Gibbs Energy = -4.5816280417E+07 J   System Enthalpy =  1.8857195400E+07 J
     723.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.842424E+03 4.468459E
-01 1.998168E+00 2.400000E-02
Si                          -1.526164E+05 9.423037E
-12 1.246195E+01 3.500000E-01
Mn                          -5.345752E+04 1.373876E
-04 1.164950E+01 6.400000E-01
Cr                          -4.970792E+04 2.563532E
-04 4.038772E+00 2.100000E-01
Mo                          -3.975608E+04 1.342183E
-03 4.169272E+00 4.000000E-01
Ni                          -3.604669E+04 2.487698E
-03 1.363094E+02 8.000000E+00
N                           -1.058766E+05 2.243472E
-08 1.427888E+00 2.000000E-02
Fe                          -2.630199E+04 1.258363E
-02 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
```

```
compnt moles
                                 C               Si              Mn
 1.7826E+03 BCC_A2             0.0000054       0.0069909       0.0065339
 7.3773E+00 FCC_A1             0.2695616       0.0000000       0.0003016

                                 Cr              Mo              Ni
 1.7826E+03 BCC_A2             0.0012219       0.0011745       0.0764667
 7.3773E+00 FCC_A1             0.2521982       0.2813527       0.0000010

                                 N               Fe
 1.7826E+03 BCC_A2             0.0000001       0.9076067
 7.3773E+00 FCC_A1             0.1935391       0.0030458

Gibbs Energy = -5.0516560811E+07 J   System Enthalpy =  2.2705819681E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   773.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -4.080094E+03 5.300282E
-01 1.998168E+00 2.400000E-02
Si                           -1.595047E+05 1.666922E
-11 1.246195E+01 3.500000E-01
Mn                           -6.962605E+04 1.973394E
-05 1.164950E+01 6.400000E-01
Cr                           -5.222964E+04 2.956155E
-04 4.038772E+00 2.100000E-01
Mo                           -4.324447E+04 1.196396E
-03 4.169272E+00 4.000000E-01
Ni                           -4.495207E+04 9.172524E
-04 1.363094E+02 8.000000E+00
N                            -6.812838E+04 2.491232E
-05 1.427888E+00 2.000000E-02
Fe                           -2.874512E+04 1.141901E
-02 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.4672E+03 BCC_A2             0.0000252       0.0084879       0.0008932
 3.1893E+02 FCC_A1             0.0031332       0.0000265       0.0321441
```

```
 3.8477E+00 CEMENTITE          0.2499999       0.0000000       0.0226876

                                Cr              Mo              Ni
 1.4672E+03 BCC_A2             0.0016543       0.0017038       0.0339553
 3.1893E+02 FCC_A1             0.0032000       0.0051109       0.2710323
 3.8477E+00 CEMENTITE          0.1535883       0.0102675       0.0130739

                                N               Fe
 1.4672E+03 BCC_A2             0.0001202       0.9531600
 3.1893E+02 FCC_A1             0.0039243       0.6814288
 3.8477E+00 CEMENTITE          0.0000001       0.5503828

Gibbs Energy = -5.5921963729E+07 J   System Enthalpy =  2.6051595017E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.931562E+03 3.137674E
-01 1.998168E+00 2.400000E-02
Si                          -1.620755E+05 5.170838E
-11 1.246195E+01 3.500000E-01
Mn                          -7.419868E+04 1.953593E
-05 1.164950E+01 6.400000E-01
Cr                          -5.689556E+04 2.449126E
-04 4.038772E+00 2.100000E-01
Mo                          -4.912528E+04 7.623718E
-04 4.169272E+00 4.000000E-01
Ni                          -4.969817E+04 7.011439E
-04 1.363094E+02 8.000000E+00
N                           -7.644587E+04 1.406732E
-05 1.427888E+00 2.000000E-02
Fe                          -3.160500E+04 9.865656E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.3617E+03 BCC_A2             0.0000446       0.0090902       0.0012275
 4.2830E+02 FCC_A1             0.0045237       0.0001964       0.0232968
```

```
                                Cr              Mo              Ni
 1.3617E+03 BCC_A2             0.0018960       0.0017225       0.0334778
 4.2830E+02 FCC_A1             0.0034020       0.0042581       0.2118223

                                N               Fe
 1.3617E+03 BCC_A2             0.0001003       0.9524411
 4.2830E+02 FCC_A1             0.0030149       0.7494859

Gibbs Energy = -6.1352990746E+07 J   System Enthalpy =  3.0159392692E+07 J
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.640414E+04 1.043536E
-01 1.998168E+00 2.400000E-02
Si                          -1.645574E+05 1.426275E
-10 1.246195E+01 3.500000E-01
Mn                          -7.954929E+04 1.739434E
-05 1.164950E+01 6.400000E-01
Cr                          -6.263009E+04 1.789441E
-04 4.038772E+00 2.100000E-01
Mo                          -5.481473E+04 5.252013E
-04 4.169272E+00 4.000000E-01
Ni                          -5.480688E+04 5.257698E
-04 1.363094E+02 8.000000E+00
N                           -8.473482E+04 8.514275E
-06 1.427888E+00 2.000000E-02
Fe                          -3.458733E+04 8.522581E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.1859E+03 BCC_A2             0.0000391       0.0100774       0.0015155
 6.0407E+02 FCC_A1             0.0032312       0.0008462       0.0163099

                                Cr              Mo              Ni
 1.1859E+03 BCC_A2             0.0018716       0.0018077       0.0319697
 6.0407E+02 FCC_A1             0.0030117       0.0033531       0.1628890
```

```
                                N               Fe
 1.1859E+03 BCC_A2             0.0000863       0.9526329
 6.0407E+02 FCC_A1             0.0021944       0.8081646

Gibbs Energy = -6.7043022633E+07 J   System Enthalpy =  3.4629081183E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -2.564285E+04 3.538754E
-02 1.998168E+00 2.400000E-02
Si                          -1.667374E+05 3.666021E
-10 1.246195E+01 3.500000E-01
Mn                          -8.586486E+04 1.383049E
-05 1.164950E+01 6.400000E-01
Cr                          -6.852400E+04 1.324863E
-04 4.038772E+00 2.100000E-01
Mo                          -6.034264E+04 3.847341E
-04 4.169272E+00 4.000000E-01
Ni                          -6.043105E+04 3.803275E
-04 1.363094E+02 8.000000E+00
N                           -9.360726E+04 5.043002E
-06 1.427888E+00 2.000000E-02
Fe                          -3.768976E+04 7.363867E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 8.5525E+02 BCC_A2             0.0000316       0.0117883       0.0016789
 9.3473E+02 FCC_A1             0.0021088       0.0025463       0.0109268

                                Cr              Mo              Ni
 8.5525E+02 BCC_A2             0.0018319       0.0019418       0.0290292
 9.3473E+02 FCC_A1             0.0026447       0.0026837       0.1192670

                                N               Fe
 8.5525E+02 BCC_A2             0.0000709       0.9536274
 9.3473E+02 FCC_A1             0.0014627       0.8583599
```

Gibbs Energy = -7.3006518665E+07 J System Enthalpy = 3.9751897551E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature = 973.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-3.548302E+04	1.245012E-02	1.998168E+00	2.400000E-02
Si		-1.682219E+05	9.319366E-10	1.246195E+01	3.500000E-01
Mn		-9.320702E+04	9.917222E-06	1.164950E+01	6.400000E-01
Cr		-7.451171E+04	1.000014E-04	4.038772E+00	2.100000E-01
Mo		-6.540011E+04	3.084194E-04	4.169272E+00	4.000000E-01
Ni		-6.663827E+04	2.646514E-04	1.363094E+02	8.000000E+00
N		-1.029576E+05	2.971348E-06	1.427888E+00	2.000000E-02
Fe		-4.092385E+04	6.354700E-03	1.617920E+03	9.035600E+01
Total				1.789975E+03	1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
2.2262E+02	BCC_A2	0.0000242	0.0148951	0.0017152
1.5674E+03	FCC_A1	0.0012714	0.0058353	0.0071890
		Cr	Mo	Ni
2.2262E+02	BCC_A2	0.0018007	0.0021960	0.0249113
1.5674E+03	FCC_A1	0.0023210	0.0023482	0.0834296
		N	Fe	
2.2262E+02	BCC_A2	0.0000569	0.9544006	
1.5674E+03	FCC_A1	0.0009029	0.8967025	

Gibbs Energy = -7.9268516299E+07 J System Enthalpy = 4.5645284090E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

```
Temperature =  1023.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.153158E+04 7.576011E
-03 1.998168E+00 2.400000E-02
Si                          -1.711622E+05 1.822358E
-09 1.246195E+01 3.500000E-01
Mn                          -9.937326E+04 8.435370E
-06 1.164950E+01 6.400000E-01
Cr                          -8.029287E+04 7.949299E
-05 4.038772E+00 2.100000E-01
Mo                          -7.088645E+04 2.402211E
-04 4.169272E+00 4.000000E-01
Ni                          -7.154688E+04 2.222748E
-04 1.363094E+02 8.000000E+00
N                           -1.089213E+05 2.745323E
-06 1.427888E+00 2.000000E-02
Fe                          -4.443680E+04 5.383975E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -8.5796630170E+07 J   System Enthalpy =  4.9344443013E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.635495E+04 5.539298E
-03 1.998168E+00 2.400000E-02
```

```
Si                          -1.748813E+05 3.067819E
-09 1.246195E+01 3.500000E-01
Mn                          -1.050493E+05 7.695431E
-06 1.164950E+01 6.400000E-01
Cr                          -8.610053E+04 6.436531E
-05 4.038772E+00 2.100000E-01
Mo                          -7.675817E+04 1.834150E
-04 4.169272E+00 4.000000E-01
Ni                          -7.600950E+04 1.994710E
-04 1.363094E+02 8.000000E+00
N                           -1.138732E+05 2.862114E
-06 1.427888E+00 2.000000E-02
Fe                          -4.807814E+04 4.566365E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -9.2472038286E+07 J   System Enthalpy =  5.2272995860E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1123.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.122715E+04 4.142924E
-03 1.998168E+00 2.400000E-02
Si                          -1.786865E+05 4.885169E
-09 1.246195E+01 3.500000E-01
Mn                          -1.108156E+05 7.009886E
-06 1.164950E+01 6.400000E-01
Cr                          -9.198811E+04 5.265268E
-05 4.038772E+00 2.100000E-01
Mo                          -8.270067E+04 1.423643E
```

-04 4.169272E+00 4.000000E-01
Ni   -8.053975E+04 1.794364E
-04 1.363094E+02 8.000000E+00
N   -1.189404E+05 2.936354E
-06 1.427888E+00 2.000000E-02
Fe   -5.179546E+04 3.898283E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7900E+03	FCC_A1	0.0011163	0.0069621	0.0065082
		Cr	Mo	Ni
1.7900E+03	FCC_A1	0.0022563	0.0023292	0.0761516
		N	Fe	
1.7900E+03	FCC_A1	0.0007977	0.9038786	

Gibbs Energy = -9.9284845540E+07 J   System Enthalpy = 5.5240078088E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1173.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -5.614574E+04 3.161169E
-03 1.998168E+00 2.400000E-02
Si   -1.825568E+05 7.426791E
-09 1.246195E+01 3.500000E-01
Mn   -1.166699E+05 6.378601E
-06 1.164950E+01 6.400000E-01
Cr   -9.795420E+04 4.346407E
-05 4.038772E+00 2.100000E-01
Mo   -8.871169E+04 1.121234E
-04 4.169272E+00 4.000000E-01
Ni   -8.515397E+04 1.614807E
-04 1.363094E+02 8.000000E+00
N   -1.241177E+05 2.972200E
-06 1.427888E+00 2.000000E-02
Fe   -5.558634E+04 3.347786E
-03 1.617920E+03 9.035600E+01

```
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.0623064718E+08 J   System Enthalpy =  5.8245706112E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.111363E+04 2.454071E
-03 1.998168E+00 2.400000E-02
Si                          -1.864851E+05 1.084860E
-08 1.246195E+01 3.500000E-01
Mn                          -1.226065E+05 5.802023E
-06 1.164950E+01 6.400000E-01
Cr                          -1.039939E+05 3.618307E
-05 4.038772E+00 2.100000E-01
Mo                          -9.478560E+04 8.949215E
-05 4.169272E+00 4.000000E-01
Ni                          -8.983914E+04 1.455608E
-04 1.363094E+02 8.000000E+00
N                           -1.294040E+05 2.973446E
-06 1.427888E+00 2.000000E-02
Fe                          -5.945172E+04 2.889788E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082
```

```
                                  Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                  N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.1330541552E+08 J   System Enthalpy =  6.1289919007E+07 J
     1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1273.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -6.613215E+04 1.934136E
-03 1.998168E+00 2.400000E-02
Si                           -1.904454E+05 1.533580E
-08 1.246195E+01 3.500000E-01
Mn                           -1.286157E+05 5.280586E
-06 1.164950E+01 6.400000E-01
Cr                           -1.100987E+05 3.037148E
-05 4.038772E+00 2.100000E-01
Mo                           -1.009130E+05 7.233855E
-05 4.169272E+00 4.000000E-01
Ni                           -9.458701E+04 1.315032E
-04 1.363094E+02 8.000000E+00
N                            -1.348026E+05 2.943221E
-06 1.427888E+00 2.000000E-02
Fe                           -6.338572E+04 2.507135E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                  C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                  Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                  N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786
```

Gibbs Energy = -1.2050545447E+08 J   System Enthalpy = 6.4372774064E+07 J
     1323.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1323.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -7.119498E+04 1.545800E
-03 1.998168E+00 2.400000E-02
Si   -1.944702E+05 2.099558E
-08 1.246195E+01 3.500000E-01
Mn   -1.347058E+05 4.804905E
-06 1.164950E+01 6.400000E-01
Cr   -1.162776E+05 2.565949E
-05 4.038772E+00 2.100000E-01
Mo   -1.071022E+05 5.908831E
-05 4.169272E+00 4.000000E-01
Ni   -9.940260E+04 1.189841E
-04 1.363094E+02 8.000000E+00
N   -1.402995E+05 2.889623E
-06 1.427888E+00 2.000000E-02
Fe   -6.739067E+04 2.184495E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7900E+03 FCC_A1   0.0011163   0.0069621   0.0065082

                                Cr   Mo   Ni
 1.7900E+03 FCC_A1   0.0022563   0.0023292   0.0761516

                                N   Fe
 1.7900E+03 FCC_A1   0.0007977   0.9038786

Gibbs Energy = -1.2782736106E+08 J   System Enthalpy = 6.7494343481E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1373.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -7.629923E+04 1.251216E
-03 1.998168E+00 2.400000E-02
Si                           -1.985533E+05 2.795096E
-08 1.246195E+01 3.500000E-01
Mn                           -1.408729E+05 4.372632E
-06 1.164950E+01 6.400000E-01
Cr                           -1.225277E+05 2.180980E
-05 4.038772E+00 2.100000E-01
Mo                           -1.133495E+05 4.873289E
-05 4.169272E+00 4.000000E-01
Ni                           -1.042869E+05 1.077935E
-04 1.363094E+02 8.000000E+00
N                            -1.458930E+05 2.816849E
-06 1.427888E+00 2.000000E-02
Fe                           -7.145528E+04 1.912547E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.3526799270E+08 J   System Enthalpy =  7.0654711618E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -8.144821E+04 1.024054E
-03 1.998168E+00 2.400000E-02
Si                           -2.026797E+05 3.633623E
-08 1.246195E+01 3.500000E-01
Mn                           -1.471135E+05 3.980883E
```

-06 1.164950E+01 6.400000E-01
Cr -1.288466E+05 1.864208E
-05 4.038772E+00 2.100000E-01
Mo -1.196516E+05 4.055203E
-05 4.169272E+00 4.000000E-01
Ni -1.092360E+05 9.779793E
-05 1.363094E+02 8.000000E+00
N -1.515816E+05 2.728803E
-06 1.427888E+00 2.000000E-02
Fe -7.558891E+04 1.680340E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7900E+03	FCC_A1	0.0011163	0.0069621	0.0065082
		Cr	Mo	Ni
1.7900E+03	FCC_A1	0.0022563	0.0023292	0.0761516
		N	Fe	
1.7900E+03	FCC_A1	0.0007977	0.9038786	

Gibbs Energy = -1.4282443911E+08 J System Enthalpy = 7.3853972947E+07 J
1473.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1473.0000 K

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

Component Ref.Phase Chem.Pot. Activity Amount/mol Mass/kg
C -8.663823E+04 8.467686E
-04 1.998168E+00 2.400000E-02
Si -2.068584E+05 4.620587E
-08 1.246195E+01 3.500000E-01
Mn -1.534278E+05 3.625533E
-06 1.164950E+01 6.400000E-01
Cr -1.352353E+05 1.601360E
-05 4.038772E+00 2.100000E-01
Mo -1.260087E+05 3.401481E
-05 4.169272E+00 4.000000E-01
Ni -1.142483E+05 8.885804E
-05 1.363094E+02 8.000000E+00

```
N                          -1.573606E+05 2.629747E
-06 1.427888E+00 2.000000E-02
Fe                         -7.978603E+04 1.481655E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.5049399813E+08 J   System Enthalpy =  7.7092230425E+07 J
     1523.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1523.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -9.185710E+04 7.073559E
-04 1.998168E+00 2.400000E-02
Si                         -2.110969E+05 5.756360E
-08 1.246195E+01 3.500000E-01
Mn                         -1.598242E+05 3.300763E
-06 1.164950E+01 6.400000E-01
Cr                         -1.417032E+05 1.380702E
-05 4.038772E+00 2.100000E-01
Mo                         -1.324296E+05 2.871774E
-05 4.169272E+00 4.000000E-01
Ni                         -1.193443E+05 8.071022E
-05 1.363094E+02 8.000000E+00
N                          -1.632171E+05 2.524948E
-06 1.427888E+00 2.000000E-02
Fe                         -8.405283E+04 1.310074E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02
```

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.5827415491E+08 J   System Enthalpy =  8.0369596145E+07 J
     1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.713908E+04 5.948151E
-04 1.998168E+00 2.400000E-02
Si                          -2.153570E+05 7.060212E
-08 1.246195E+01 3.500000E-01
Mn                          -1.662680E+05 3.012141E
-06 1.164950E+01 6.400000E-01
Cr                          -1.482162E+05 1.197581E
-05 4.038772E+00 2.100000E-01
Mo                          -1.388794E+05 2.445382E
-05 4.169272E+00 4.000000E-01
Ni                          -1.244530E+05 7.368690E
-05 1.363094E+02 8.000000E+00
N                           -1.691820E+05 2.410529E
-06 1.427888E+00 2.000000E-02
Fe                          -8.836159E+04 1.163722E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516
```

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                                  N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.6616256700E+08 J   System Enthalpy =  8.3686498480E+07 J
     1623.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -1.024477E+05 5.045524E
-04 1.998168E+00 2.400000E-02
Si                           -2.196747E+05 8.514645E
-08 1.246195E+01 3.500000E-01
Mn                           -1.727948E+05 2.747345E
-06 1.164950E+01 6.400000E-01
Cr                           -1.548096E+05 1.041677E
-05 4.038772E+00 2.100000E-01
Mo                           -1.453924E+05 2.093186E
-05 4.169272E+00 4.000000E-01
Ni                           -1.296468E+05 6.722825E
-05 1.363094E+02 8.000000E+00
N                            -1.752174E+05 2.295862E
-06 1.427888E+00 2.000000E-02
Fe                           -9.274147E+04 1.035818E
-03 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                  C               Si              Mn
 1.7900E+03 FCC_A1             0.0011163       0.0069621       0.0065082

                                  Cr              Mo              Ni
 1.7900E+03 FCC_A1             0.0022563       0.0023292       0.0761516

                                  N               Fe
 1.7900E+03 FCC_A1             0.0007977       0.9038786

Gibbs Energy = -1.7415705381E+08 J   System Enthalpy =  8.7043093455E+07 J
     1673.00
*** MULTIPHASE - Stage 1* Results ***
```

Temperature = 1673.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.077937E+05 4.310559E
-04 1.998168E+00 2.400000E-02
Si   -2.240397E+05 1.011995E
-07 1.246195E+01 3.500000E-01
Mn   -1.793896E+05 2.507345E
-06 1.164950E+01 6.400000E-01
Cr   -1.614702E+05 9.092453E
-06 4.038772E+00 2.100000E-01
Mo   -1.519550E+05 1.802023E
-05 4.169272E+00 4.000000E-01
Ni   -1.348965E+05 6.142550E
-05 1.363094E+02 8.000000E+00
N   -1.813336E+05 2.180319E
-06 1.427888E+00 2.000000E-02
Fe   -9.717794E+04 9.246410E
-04 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7900E+03 FCC_A1   0.0011163   0.0069621   0.0065082

                                Cr   Mo   Ni
 1.7900E+03 FCC_A1   0.0022563   0.0023292   0.0761516

                                N   Fe
 1.7900E+03 FCC_A1   0.0007977   0.9038786

Gibbs Energy = -1.8225556823E+08 J   System Enthalpy = 9.0439302429E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1723.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.131787E+05 3.706367E

-04 1.998168E+00 2.400000E-02
Si   -2.284436E+05 1.187564E
-07 1.246195E+01 3.500000E-01
Mn   -1.860463E+05 2.290572E
-06 1.164950E+01 6.400000E-01
Cr   -1.681958E+05 7.963185E
-06 4.038772E+00 2.100000E-01
Mo   -1.585640E+05 1.559839E
-05 4.169272E+00 4.000000E-01
Ni   -1.402029E+05 5.619552E
-05 1.363094E+02 8.000000E+00
N   -1.875306E+05 2.065130E
-06 1.427888E+00 2.000000E-02
Fe   -1.016698E+05 8.276485E
-04 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7900E+03	FCC_A1	0.0011163	0.0069621	0.0065082
		Cr	Mo	Ni
1.7900E+03	FCC_A1	0.0022563	0.0023292	0.0761516
		N	Fe	
1.7900E+03	FCC_A1	0.0007977	0.9038786	

Gibbs Energy = -1.9045618338E+08 J   System Enthalpy = 9.3874991359E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1773.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -1.401416E+05 7.436503E
-05 1.998168E+00 2.400000E-02
Si   -2.417005E+05 7.575327E
-08 1.246195E+01 3.500000E-01
Mn   -1.973664E+05 1.532868E
-06 1.164950E+01 6.400000E-01
Cr   -1.769764E+05 6.112234E
-06 4.038772E+00 2.100000E-01

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Mo                          -1.738322E+05 7.565396E
-06 4.169272E+00 4.000000E-01
Ni                          -1.472831E+05 4.581185E
-05 1.363094E+02 8.000000E+00
N                           -2.029311E+05 1.050912E
-06 1.427888E+00 2.000000E-02
Fe                          -1.059785E+05 7.547954E
-04 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7900E+03 LIQUID             0.0011163       0.0069621       0.0065082

                                 Cr              Mo              Ni
 1.7900E+03 LIQUID             0.0022563       0.0023292       0.0761516

                                 N               Fe
 1.7900E+03 LIQUID             0.0007977       0.9038786

Gibbs Energy = -1.9884848775E+08 J   System Enthalpy =  1.2284630111E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.456059E+05 6.730435E
-05 1.998168E+00 2.400000E-02
Si                          -2.466175E+05 8.586509E
-08 1.246195E+01 3.500000E-01
Mn                          -2.048369E+05 1.351864E
-06 1.164950E+01 6.400000E-01
Cr                          -1.837176E+05 5.445652E
-06 4.038772E+00 2.100000E-01
Mo                          -1.807712E+05 6.614120E
-06 4.169272E+00 4.000000E-01
Ni                          -1.530884E+05 4.108179E
-05 1.363094E+02 8.000000E+00
N                           -2.096932E+05 9.812679E
-07 1.427888E+00 2.000000E-02
Fe                          -1.109897E+05 6.605106E
```

-04 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

Amount Phase Mole fraction of component within phase
compnt moles
C Si Mn
1.7900E+03 LIQUID 0.0011163 0.0069621 0.0065082

Cr Mo Ni
1.7900E+03 LIQUID 0.0022563 0.0023292 0.0761516

N Fe
1.7900E+03 LIQUID 0.0007977 0.9038786

Gibbs Energy = -2.0797683135E+08 J System Enthalpy = 1.2689386010E+08 J
1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1873.0000 K

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

Component Ref.Phase Chem.Pot. Activity Amount/mol Mass/kg
C -1.511019E+05 6.111449E
-05 1.998168E+00 2.400000E-02
Si -2.515733E+05 9.643700E
-08 1.246195E+01 3.500000E-01
Mn -2.123731E+05 1.195205E
-06 1.164950E+01 6.400000E-01
Cr -1.905194E+05 4.862793E
-06 4.038772E+00 2.100000E-01
Mo -1.877527E+05 5.808212E
-06 4.169272E+00 4.000000E-01
Ni -1.589539E+05 3.691224E
-05 1.363094E+02 8.000000E+00
N -2.164797E+05 9.181591E
-07 1.427888E+00 2.000000E-02
Fe -1.160604E+05 5.799121E
-04 1.617920E+03 9.035600E+01
Total
1.789975E+03 1.000000E+02

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

```
 1.7900E+03 LIQUID             0.0011163       0.0069621       0.0065082

                                Cr              Mo              Ni
 1.7900E+03 LIQUID             0.0022563       0.0023292       0.0761516

                                N               Fe
 1.7900E+03 LIQUID             0.0007977       0.9038786

Gibbs Energy = -2.1721688249E+08 J   System Enthalpy =  1.3097384765E+08 J

                      ************************************
                      * WARNING/ERRORS HAVE BEEN DETECTED *
                      ************************************

   3240 Warnings: Multiphase, temperature range violation -  Unary data

 MULTIPHASE OPTION ?
*******************************************************************************
 MULTIPHASE OPTION ? set w(6)=10 !
 MULTIPHASE OPTION ? com pr br pr mol !
 NUMBER OF STEPS =  27

     573.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.295254E+04 6.595941E
-02 1.998168E+00 2.400000E-02
Si                          -1.411613E+05 1.355399E
-13 1.246195E+01 3.500000E-01
Mn                          -3.882592E+04 2.888825E
-04 1.164950E+01 6.400000E-01
Cr                          -3.400487E+04 7.946880E
-04 4.038772E+00 2.100000E-01
Mo                          -2.503740E+04 5.219748E
-03 4.169272E+00 4.000000E-01
Ni                          -2.331710E+04 7.489776E
-03 1.703868E+02 1.000000E+01
N                           -1.040754E+05 3.256348E
-10 1.427888E+00 2.000000E-02
Fe                          -1.890248E+04 1.891886E
-02 1.582108E+03 8.835600E+01
```

```
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7801E+03 BCC_A2             0.0000000       0.0070008       0.0065406
 8.1584E+00 FCC_A1             0.2449216       0.0000000       0.0008191

                                Cr              Mo              Ni
 1.7801E+03 BCC_A2             0.0012831       0.0006754       0.0957185
 8.1584E+00 FCC_A1             0.2150761       0.3636810       0.0000003

                                N               Fe
 1.7801E+03 BCC_A2             0.0000000       0.8887816
 8.1584E+00 FCC_A1             0.1750214       0.0004806

Gibbs Energy = -3.6505259011E+07 J   System Enthalpy =  1.3911037557E+07 J
     623.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C
2.043244E+03 1.483573E+00 1.998168E+00 2.400000E-02
Si                           -1.520542E+05 1.784562E
-13 1.246195E+01 3.500000E-01
Mn                           -5.882975E+04 1.168474E
-05 1.164950E+01 6.400000E-01
Cr                           -4.185980E+04 3.093194E
-04 4.038772E+00 2.100000E-01
Mo                           -2.602808E+04 6.573009E
-03 4.169272E+00 4.000000E-01
Ni                           -3.273748E+04 1.799852E
-03 1.703868E+02 1.000000E+01
N                            -5.711638E+04 1.626564E
-05 1.427888E+00 2.000000E-02
Fe                           -2.086094E+04 1.782318E
-02 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
```

```
compnt moles
                                  C               Si              Mn
 3.1753E+00 LIQUID             0.0000002       0.0000000       0.0095069
 1.4976E+03 BCC_A2             0.0000010       0.0083214       0.0001794
 2.7978E+02 FCC_A1             0.0002516       0.0000000       0.0400360
 7.7052E+00 CEMENTITE          0.2500000       0.0000000       0.0193903

                                  Cr              Mo              Ni
 3.1753E+00 LIQUID             0.3280210       0.0967035       0.0000028
 1.4976E+03 BCC_A2             0.0005163       0.0016663       0.0277014
 2.7978E+02 FCC_A1             0.0006874       0.0045934       0.4603012
 7.7052E+00 CEMENTITE          0.2636838       0.0105906       0.0154933

                                  N               Fe
 3.1753E+00 LIQUID             0.4089156       0.1568499
 1.4976E+03 BCC_A2             0.0000186       0.9615956
 2.7978E+02 FCC_A1             0.0003631       0.4937673
 7.7052E+00 CEMENTITE          0.0000000       0.4408420

Gibbs Energy = -4.1517744355E+07 J   System Enthalpy =  1.5490583212E+07 J
     673.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   673.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -7.500295E+03 2.617472E
-01 1.998168E+00 2.400000E-02
Si                           -1.468492E+05 4.005351E
-12 1.246195E+01 3.500000E-01
Mn                           -4.904194E+04 1.562157E
-04 1.164950E+01 6.400000E-01
Cr                           -4.460069E+04 3.454791E
-04 4.038772E+00 2.100000E-01
Mo                           -3.463694E+04 2.049911E
-03 4.169272E+00 4.000000E-01
Ni                           -3.077017E+04 4.091145E
-03 1.703868E+02 1.000000E+01
N                            -1.047516E+05 7.412297E
-09 1.427888E+00 2.000000E-02
Fe                           -2.379816E+04 1.422203E
-02 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02
```

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7806E+03 BCC_A2              0.0000007       0.0069986       0.0065407
 7.6098E+00 FCC_A1              0.2624159       0.0000000       0.0003891

                                Cr              Mo              Ni
 1.7806E+03 BCC_A2              0.0012567       0.0010117       0.0956890
 7.6098E+00 FCC_A1              0.2366743       0.3111477       0.0000008

                                N               Fe
 1.7806E+03 BCC_A2              0.0000000       0.8885026
 7.6098E+00 FCC_A1              0.1876360       0.0017362

Gibbs Energy = -4.5785724443E+07 J   System Enthalpy =  1.9847263307E+07 J
     723.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -2.208282E+03 6.925674E
-01 1.998168E+00 2.400000E-02
Si                           -1.562707E+05 5.130811E
-12 1.246195E+01 3.500000E-01
Mn                           -6.770845E+04 1.283469E
-05 1.164950E+01 6.400000E-01
Cr                           -4.798576E+04 3.413943E
-04 4.038772E+00 2.100000E-01
Mo                           -3.786913E+04 1.837108E
-03 4.169272E+00 4.000000E-01
Ni                           -4.031379E+04 1.223263E
-03 1.703868E+02 1.000000E+01
N                            -6.103177E+04 3.897119E
-05 1.427888E+00 2.000000E-02
Fe                           -2.600498E+04 1.322097E
-02 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

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

```
 1.4190E+03 BCC_A2             0.0000094       0.0087814       0.0004190
 3.6326E+02 FCC_A1             0.0013679       0.0000026       0.0301714
 5.9518E+00 CEMENTITE          0.2500000       0.0000000       0.0159301

                                Cr              Mo              Ni
 1.4190E+03 BCC_A2             0.0013359       0.0015498       0.0340446
 3.6326E+02 FCC_A1             0.0026033       0.0052742       0.3358122
 5.9518E+00 CEMENTITE          0.2011995       0.0090960       0.0149133

                                N               Fe
 1.4190E+03 BCC_A2             0.0001215       0.9537385
 3.6326E+02 FCC_A1             0.0034563       0.6213122
 5.9518E+00 CEMENTITE          0.0000000       0.5088611

Gibbs Energy = -5.1191723966E+07 J   System Enthalpy =  2.2536261247E+07 J
     773.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   773.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -3.931819E+03 5.423983E
-01 1.998168E+00 2.400000E-02
Si                          -1.586178E+05 1.913565E
-11 1.246195E+01 3.500000E-01
Mn                          -7.176870E+04 1.413938E
-05 1.164950E+01 6.400000E-01
Cr                          -5.213695E+04 2.999098E
-04 4.038772E+00 2.100000E-01
Mo                          -4.385441E+04 1.088079E
-03 4.169272E+00 4.000000E-01
Ni                          -4.466805E+04 9.586960E
-04 1.703868E+02 1.000000E+01
N                           -6.925425E+04 2.090917E
-05 1.427888E+00 2.000000E-02
Fe                          -2.875639E+04 1.139901E
-02 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.3365E+03 BCC_A2             0.0000253       0.0093146       0.0006489
```

```
 4.4921E+02 FCC_A1             0.0029636       0.0000290       0.0239099
 2.5325E+00 CEMENTITE          0.2499999       0.0000000       0.0164375

                                Cr              Mo              Ni
 1.3365E+03 BCC_A2             0.0016767       0.0015250       0.0348504
 4.4921E+02 FCC_A1             0.0031122       0.0046919       0.2755360
 2.5325E+00 CEMENTITE          0.1579100       0.0092737       0.0137532

                                N               Fe
 1.3365E+03 BCC_A2             0.0001001       0.9518591
 4.4921E+02 FCC_A1             0.0028808       0.6868766
 2.5325E+00 CEMENTITE          0.0000001       0.5526256

Gibbs Energy = -5.6419011641E+07 J   System Enthalpy =  2.6403830997E+07 J
     823.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.547888E+03 2.477561E
-01 1.998168E+00 2.400000E-02
Si                          -1.608812E+05 6.156846E
-11 1.246195E+01 3.500000E-01
Mn                          -7.630003E+04 1.437037E
-05 1.164950E+01 6.400000E-01
Cr                          -5.714385E+04 2.361852E
-04 4.038772E+00 2.100000E-01
Mo                          -4.966885E+04 7.041549E
-04 4.169272E+00 4.000000E-01
Ni                          -4.937656E+04 7.348845E
-04 1.703868E+02 1.000000E+01
N                           -7.759956E+04 1.188476E
-05 1.427888E+00 2.000000E-02
Fe                          -3.162477E+04 9.837193E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.1995E+03 BCC_A2             0.0000342       0.0102887       0.0009181
 5.8875E+02 FCC_A1             0.0033242       0.0002052       0.0179162
```

```
                                Cr              Mo              Ni
 1.1995E+03 BCC_A2             0.0018262       0.0015591       0.0342822
 5.8875E+02 FCC_A1             0.0031393       0.0039052       0.2195582

                                N               Fe
 1.1995E+03 BCC_A2             0.0000840       0.9510076
 5.8875E+02 FCC_A1             0.0022542       0.7496975

Gibbs Energy = -6.1908524021E+07 J   System Enthalpy =  3.0614663143E+07 J
     873.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   873.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.810381E+04 8.256829E
-02 1.998168E+00 2.400000E-02
Si                          -1.628167E+05 1.812817E
-10 1.246195E+01 3.500000E-01
Mn                          -8.155376E+04 1.319705E
-05 1.164950E+01 6.400000E-01
Cr                          -6.289909E+04 1.724339E
-04 4.038772E+00 2.100000E-01
Mo                          -5.528200E+04 4.924567E
-04 4.169272E+00 4.000000E-01
Ni                          -5.444797E+04 5.524204E
-04 1.703868E+02 1.000000E+01
N                           -8.606942E+04 7.084278E
-06 1.427888E+00 2.000000E-02
Fe                          -3.461537E+04 8.489724E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 9.7215E+02 BCC_A2             0.0000299       0.0120268       0.0011737
 8.1610E+02 FCC_A1             0.0024128       0.0009437       0.0128765

                                Cr              Mo              Ni
 9.7215E+02 BCC_A2             0.0017949       0.0016443       0.0324500
 8.1610E+02 FCC_A1             0.0028108       0.0031501       0.1701281
```

```
                                   N               Fe
 9.7215E+02 BCC_A2              0.0000714       0.9508091
 8.1610E+02 FCC_A1              0.0016647       0.8060133

Gibbs Energy = -6.7665137469E+07 J   System Enthalpy =  3.5267270296E+07 J
     923.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   923.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -2.726844E+04 2.863235E
-02 1.998168E+00 2.400000E-02
Si                           -1.640739E+05 5.187063E
-10 1.246195E+01 3.500000E-01
Mn                           -8.774188E+04 1.082968E
-05 1.164950E+01 6.400000E-01
Cr                           -6.878009E+04 1.281382E
-04 4.038772E+00 2.100000E-01
Mo                           -6.064646E+04 3.698002E
-04 4.169272E+00 4.000000E-01
Ni                           -5.995605E+04 4.046113E
-04 1.703868E+02 1.000000E+01
N                            -9.492777E+04 4.245808E
-06 1.427888E+00 2.000000E-02
Fe                           -3.773809E+04 7.317632E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                   C               Si              Mn
 5.6448E+02 BCC_A2              0.0000244       0.0152112       0.0013587
 1.2238E+03 FCC_A1              0.0016215       0.0031669       0.0088927

                                   Cr              Mo              Ni
 5.6448E+02 BCC_A2              0.0017584       0.0017779       0.0292486
 1.2238E+03 FCC_A1              0.0024892       0.0025869       0.1257406

                                   N               Fe
 5.6448E+02 BCC_A2              0.0000597       0.9505612
 1.2238E+03 FCC_A1              0.0011393       0.8543629
```

```
Gibbs Energy = -7.3707136740E+07 J   System Enthalpy =  4.0619579561E+07 J
     973.000
*** MULTIPHASE - Stage 1* Results ***

Temperature =   973.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                            -3.587789E+04 1.185703E
-02 1.998168E+00 2.400000E-02
Si                           -1.650021E+05 1.387502E
-09 1.246195E+01 3.500000E-01
Mn                           -9.457258E+04 8.376900E
-06 1.164950E+01 6.400000E-01
Cr                           -7.456565E+04 9.933684E
-05 4.038772E+00 2.100000E-01
Mo                           -6.565499E+04 2.988540E
-04 4.169272E+00 4.000000E-01
Ni                           -6.551982E+04 3.038893E
-04 1.703868E+02 1.000000E+01
N                            -1.031318E+05 2.908030E
-06 1.427888E+00 2.000000E-02
Fe                           -4.104696E+04 6.258729E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -8.0056216924E+07 J   System Enthalpy =  4.6048791579E+07 J
     1023.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1023.0000 K
```

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.064332E+04 8.409968E
-03 1.998168E+00 2.400000E-02
Si                          -1.687065E+05 2.432311E
-09 1.246195E+01 3.500000E-01
Mn                          -1.001483E+05 7.700703E
-06 1.164950E+01 6.400000E-01
Cr                          -8.030163E+04 7.941119E
-05 4.038772E+00 2.100000E-01
Mo                          -7.134006E+04 2.277458E
-04 4.169272E+00 4.000000E-01
Ni                          -6.979070E+04 2.732492E
-04 1.703868E+02 1.000000E+01
N                           -1.079692E+05 3.070456E
-06 1.427888E+00 2.000000E-02
Fe                          -4.460942E+04 5.275812E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -8.6609184704E+07 J   System Enthalpy =  4.8934919907E+07 J
     1073.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1073.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -4.544551E+04 6.133752E
-03 1.998168E+00 2.400000E-02
Si                          -1.724963E+05 4.008046E
-09 1.246195E+01 3.500000E-01
```

```
Mn                          -1.058265E+05 7.053344E
-06 1.164950E+01 6.400000E-01
Cr                          -8.612883E+04 6.416144E
-05 4.038772E+00 2.100000E-01
Mo                          -7.710793E+04 1.763635E
-04 4.169272E+00 4.000000E-01
Ni                          -7.415126E+04 2.456624E
-04 1.703868E+02 1.000000E+01
N                           -1.129162E+05 3.186202E
-06 1.427888E+00 2.000000E-02
Fe                          -4.826762E+04 4.470404E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -9.3304199146E+07 J   System Enthalpy =  5.1859650115E+07 J
     1123.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1123.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -5.030953E+04 4.570754E
-03 1.998168E+00 2.400000E-02
Si                          -1.763234E+05 6.292048E
-09 1.246195E+01 3.500000E-01
Mn                          -1.115827E+05 6.456983E
-06 1.164950E+01 6.400000E-01
Cr                          -9.202360E+04 5.245297E
-05 4.038772E+00 2.100000E-01
Mo                          -8.293421E+04 1.388476E
-04 4.169272E+00 4.000000E-01
Ni                          -7.858544E+04 2.212126E
```

-04 1.703868E+02 1.000000E+01
N   -1.179891E+05 3.251265E
-06 1.427888E+00 2.000000E-02
Fe   -5.199568E+04 3.815584E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount   Phase   Mole fraction of component within phase
compnt moles
                                C   Si   Mn
 1.7882E+03 FCC_A1   0.0011174   0.0069688   0.0065145

                                Cr   Mo   Ni
 1.7882E+03 FCC_A1   0.0022585   0.0023315   0.0952818

                                N   Fe
 1.7882E+03 FCC_A1   0.0007985   0.8847290

Gibbs Energy = -1.0013643593E+08 J   System Enthalpy = 5.4822970583E+07 J
     1173.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1173.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -5.522074E+04 3.475663E
-03 1.998168E+00 2.400000E-02
Si   -1.802226E+05 9.435011E
-09 1.246195E+01 3.500000E-01
Mn   -1.174253E+05 5.903213E
-06 1.164950E+01 6.400000E-01
Cr   -9.799525E+04 4.328150E
-05 4.038772E+00 2.100000E-01
Mo   -8.882741E+04 1.108009E
-04 4.169272E+00 4.000000E-01
Ni   -8.309036E+04 1.995318E
-04 1.703868E+02 1.000000E+01
N   -1.231723E+05 3.274744E
-06 1.427888E+00 2.000000E-02
Fe   -5.579634E+04 3.276473E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

```
Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.0710150089E+08 J   System Enthalpy =  5.7824897430E+07 J
     1223.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1223.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.018281E+04 2.689316E
-03 1.998168E+00 2.400000E-02
Si                          -1.841719E+05 1.361977E
-08 1.246195E+01 3.500000E-01
Mn                          -1.233479E+05 5.394039E
-06 1.164950E+01 6.400000E-01
Cr                          -1.040383E+05 3.602537E
-05 4.038772E+00 2.100000E-01
Mo                          -9.478129E+04 8.953013E
-05 4.169272E+00 4.000000E-01
Ni                          -8.766433E+04 1.802722E
-04 1.703868E+02 1.000000E+01
N                           -1.284651E+05 3.261076E
-06 1.427888E+00 2.000000E-02
Fe                          -5.967184E+04 2.827905E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
```

```
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.1419537600E+08 J   System Enthalpy =  6.0865468971E+07 J
     1273.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1273.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -6.518966E+04 2.114263E
-03 1.998168E+00 2.400000E-02
Si                          -1.881839E+05 1.898885E
-08 1.246195E+01 3.500000E-01
Mn                          -1.293521E+05 4.925706E
-06 1.164950E+01 6.400000E-01
Cr                          -1.101554E+05 3.020930E
-05 4.038772E+00 2.100000E-01
Mo                          -1.007976E+05 7.313194E
-05 4.169272E+00 4.000000E-01
Ni                          -9.230896E+04 1.630830E
-04 1.703868E+02 1.000000E+01
N                           -1.338598E+05 3.217423E
-06 1.427888E+00 2.000000E-02
Fe                          -6.361584E+04 2.453215E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.2141437399E+08 J   System Enthalpy =  6.3944741351E+07 J
     1323.00
```

```
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1323.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -7.024280E+04 1.685568E
-03 1.998168E+00 2.400000E-02
Si                          -1.922440E+05 2.570513E
-08 1.246195E+01 3.500000E-01
Mn                          -1.354331E+05 4.497485E
-06 1.164950E+01 6.400000E-01
Cr                          -1.163426E+05 2.550841E
-05 4.038772E+00 2.100000E-01
Mo                          -1.068716E+05 6.033988E
-05 4.169272E+00 4.000000E-01
Ni                          -9.702226E+04 1.477294E
-04 1.703868E+02 1.000000E+01
N                           -1.393553E+05 3.148605E
-06 1.427888E+00 2.000000E-02
Fe                          -6.762843E+04 2.137786E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                               C               Si              Mn
 1.7882E+03 FCC_A1            0.0011174       0.0069688       0.0065145

                               Cr              Mo              Ni
 1.7882E+03 FCC_A1            0.0022585       0.0023315       0.0952818

                               N               Fe
 1.7882E+03 FCC_A1            0.0007985       0.8847290

Gibbs Energy = -1.2875509998E+08 J   System Enthalpy =  6.7062785341E+07 J
     1373.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1373.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
```

```
C                          -7.533733E+04 1.361214E
-03 1.998168E+00 2.400000E-02
Si                         -1.963680E+05 3.384799E
-08 1.246195E+01 3.500000E-01
Mn                         -1.415948E+05 4.104685E
-06 1.164950E+01 6.400000E-01
Cr                         -1.226046E+05 2.166345E
-05 4.038772E+00 2.100000E-01
Mo                         -1.130074E+05 5.021519E
-05 4.169272E+00 4.000000E-01
Ni                         -1.018065E+05 1.339536E
-04 1.703868E+02 1.000000E+01
N                          -1.449424E+05 3.061441E
-06 1.427888E+00 2.000000E-02
Fe                         -7.171088E+04 1.870200E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.3621441880E+08 J   System Enthalpy =  7.0219683573E+07 J
     1423.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1423.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                          -8.047877E+04 1.111495E
-03 1.998168E+00 2.400000E-02
Si                         -2.005327E+05 4.356631E
-08 1.246195E+01 3.500000E-01
Mn                         -1.478236E+05 3.749000E
-06 1.164950E+01 6.400000E-01
Cr                         -1.289290E+05 1.851277E
```

-05 4.038772E+00 2.100000E-01
Mo   -1.191916E+05 4.215955E
-05 4.169272E+00 4.000000E-01
Ni   -1.066406E+05 1.217860E
-04 1.703868E+02 1.000000E+01
N   -1.506297E+05 2.957423E
-06 1.427888E+00 2.000000E-02
Fe   -7.585012E+04 1.643649E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7882E+03	FCC_A1	0.0011174	0.0069688	0.0065145
		Cr	Mo	Ni
1.7882E+03	FCC_A1	0.0022585	0.0023315	0.0952818
		N	Fe	
1.7882E+03	FCC_A1	0.0007985	0.8847290	

Gibbs Energy = -1.4378942697E+08 J   System Enthalpy = 7.3415528660E+07 J
     1473.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1473.0000 K

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

Component   Ref.Phase   Chem.Pot.   Activity   Amount/mol   Mass/kg
C   -8.564918E+04 9.179878E
-04 1.998168E+00 2.400000E-02
Si   -2.047509E+05 5.488200E
-08 1.246195E+01 3.500000E-01
Mn   -1.541379E+05 3.421310E
-06 1.164950E+01 6.400000E-01
Cr   -1.353350E+05 1.588379E
-05 4.038772E+00 2.100000E-01
Mo   -1.254427E+05 3.562374E
-05 4.169272E+00 4.000000E-01
Ni   -1.115712E+05 1.105676E
-04 1.703868E+02 1.000000E+01
N   -1.563942E+05 2.845668E
-06 1.427888E+00 2.000000E-02

```
Fe                          -8.006530E+04 1.448252E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.5147742859E+08 J   System Enthalpy =  7.6650421453E+07 J
     1523.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1523.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.087489E+04 7.644062E
-04 1.998168E+00 2.400000E-02
Si                          -2.090113E+05 6.787019E
-08 1.246195E+01 3.500000E-01
Mn                          -1.605106E+05 3.126609E
-06 1.164950E+01 6.400000E-01
Cr                          -1.417965E+05 1.370562E
-05 4.038772E+00 2.100000E-01
Mo                          -1.317338E+05 3.033978E
-05 4.169272E+00 4.000000E-01
Ni                          -1.165312E+05 1.007874E
-04 1.703868E+02 1.000000E+01
N                           -1.622585E+05 2.723509E
-06 1.427888E+00 2.000000E-02
Fe                          -8.433024E+04 1.281686E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
```

```
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.5927591456E+08 J   System Enthalpy =  7.9924471825E+07 J
     1573.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1573.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -9.613604E+04 6.422279E
-04 1.998168E+00 2.400000E-02
Si                          -2.133227E+05 8.248383E
-08 1.246195E+01 3.500000E-01
Mn                          -1.669571E+05 2.857537E
-06 1.164950E+01 6.400000E-01
Cr                          -1.483296E+05 1.187242E
-05 4.038772E+00 2.100000E-01
Mo                          -1.380803E+05 2.599452E
-05 4.169272E+00 4.000000E-01
Ni                          -1.215580E+05 9.194379E
-05 1.703868E+02 1.000000E+01
N                           -1.682035E+05 2.597783E
-06 1.427888E+00 2.000000E-02
Fe                          -8.865790E+04 1.137652E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase              Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
```

```
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.6718254777E+08 J   System Enthalpy =  8.3238105830E+07 J
     1623.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1623.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.014408E+05 5.436380E
-04 1.998168E+00 2.400000E-02
Si                          -2.176729E+05 9.876238E
-08 1.246195E+01 3.500000E-01
Mn                          -1.734688E+05 2.613495E
-06 1.164950E+01 6.400000E-01
Cr                          -1.549256E+05 1.032759E
-05 4.038772E+00 2.100000E-01
Mo                          -1.444725E+05 2.240847E
-05 4.169272E+00 4.000000E-01
Ni                          -1.266322E+05 8.405627E
-05 1.703868E+02 1.000000E+01
N                           -1.742352E+05 2.469185E
-06 1.427888E+00 2.000000E-02
Fe                          -9.304352E+04 1.012891E
-03 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 FCC_A1             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 FCC_A1             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 FCC_A1             0.0007985       0.8847290

Gibbs Energy = -1.7519515249E+08 J   System Enthalpy =  8.6591477028E+07 J
     1673.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1673.0000 K
```

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.067769E+05 4.637481E
-04 1.998168E+00 2.400000E-02
Si                          -2.220746E+05 1.165548E
-07 1.246195E+01 3.500000E-01
Mn                          -1.800564E+05 2.389983E
-06 1.164950E+01 6.400000E-01
Cr                          -1.615955E+05 9.010959E
-06 4.038772E+00 2.100000E-01
Mo                          -1.509209E+05 1.941086E
-05 4.169272E+00 4.000000E-01
Ni                          -1.317787E+05 7.685827E
-05 1.703868E+02 1.000000E+01
N                           -1.803400E+05 2.341759E
-06 1.427888E+00 2.000000E-02
Fe                          -9.749040E+04 9.041030E
-04 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                 C               Si              Mn
 1.7882E+03 FCC_A1              0.0011174       0.0069688       0.0065145

                                 Cr              Mo              Ni
 1.7882E+03 FCC_A1              0.0022585       0.0023315       0.0952818

                                 N               Fe
 1.7882E+03 FCC_A1              0.0007985       0.8847290

Gibbs Energy = -1.8331168613E+08 J   System Enthalpy =  8.9984504287E+07 J
     1723.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1723.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.121527E+05 3.981547E
-04 1.998168E+00 2.400000E-02
Si                          -2.265166E+05 1.358540E
```

-07 1.246195E+01 3.500000E-01
Mn   -1.866970E+05 2.188861E
-06 1.164950E+01 6.400000E-01
Cr   -1.683296E+05 7.889180E
-06 4.038772E+00 2.100000E-01
Mo   -1.574151E+05 1.690090E
-05 4.169272E+00 4.000000E-01
Ni   -1.369855E+05 7.034599E
-05 1.703868E+02 1.000000E+01
N   -1.865249E+05 2.215307E
-06 1.427888E+00 2.000000E-02
Fe   -1.019935E+05 8.091582E
-04 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7882E+03	FCC_A1	0.0011174	0.0069688	0.0065145
		Cr	Mo	Ni
1.7882E+03	FCC_A1	0.0022585	0.0023315	0.0952818
		N	Fe	
1.7882E+03	FCC_A1	0.0007985	0.8847290	

Gibbs Energy = -1.9153022600E+08 J   System Enthalpy = 9.3417050952E+07 J
     1773.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1773.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-1.396188E+05	7.704993E		
-05 1.998168E+00 2.400000E-02					
Si		-2.399791E+05	8.513629E		
-08 1.246195E+01 3.500000E-01					
Mn		-1.982092E+05	1.447689E		
-06 1.164950E+01 6.400000E-01					
Cr		-1.769443E+05	6.125581E		
-06 4.038772E+00 2.100000E-01					
Mo		-1.730208E+05	7.993456E		
-06 4.169272E+00 4.000000E-01					

```
Ni                          -1.439594E+05 5.739774E
-05 1.703868E+02 1.000000E+01
N                           -2.017699E+05 1.137039E
-06 1.427888E+00 2.000000E-02
Fe                          -1.063022E+05 7.384004E
-04 1.582108E+03 8.835600E+01
Total
1.788241E+03 1.000000E+02

Amount      Phase               Mole fraction of component within phase
compnt moles
                                C               Si              Mn
 1.7882E+03 LIQUID             0.0011174       0.0069688       0.0065145

                                Cr              Mo              Ni
 1.7882E+03 LIQUID             0.0022585       0.0023315       0.0952818

                                N               Fe
 1.7882E+03 LIQUID             0.0007985       0.8847290

Gibbs Energy = -2.0000776375E+08 J   System Enthalpy =  1.2227578018E+08 J
     1823.00
*** MULTIPHASE - Stage 1* Results ***

Temperature =  1823.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
C                           -1.450806E+05 6.967773E
-05 1.998168E+00 2.400000E-02
Si                          -2.449559E+05 9.581354E
-08 1.246195E+01 3.500000E-01
Mn                          -2.056761E+05 1.279043E
-06 1.164950E+01 6.400000E-01
Cr                          -1.836942E+05 5.454067E
-06 4.038772E+00 2.100000E-01
Mo                          -1.799450E+05 6.984635E
-06 4.169272E+00 4.000000E-01
Ni                          -1.496650E+05 5.149199E
-05 1.703868E+02 1.000000E+01
N                           -2.085209E+05 1.060170E
-06 1.427888E+00 2.000000E-02
Fe                          -1.113203E+05 6.462579E
-04 1.582108E+03 8.835600E+01
Total
```

1.788241E+03 1.000000E+02

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7882E+03	LIQUID	0.0011174	0.0069688	0.0065145
		Cr	Mo	Ni
1.7882E+03	LIQUID	0.0022585	0.0023315	0.0952818
		N	Fe	
1.7882E+03	LIQUID	0.0007985	0.8847290	

Gibbs Energy = -2.0915260133E+08 J System Enthalpy = 1.2631511990E+08 J
     1873.00
*** MULTIPHASE - Stage 1* Results ***

Temperature = 1873.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
C		-1.505804E+05	6.319567E		
-05	1.998168E+00	2.400000E-02			
Si		-2.499655E+05	1.069260E		
-07	1.246195E+01	3.500000E-01			
Mn		-2.132029E+05	1.133185E		
-06	1.164950E+01	6.400000E-01			
Cr		-1.905087E+05	4.866149E		
-06	4.038772E+00	2.100000E-01			
Mo		-1.869154E+05	6.129062E		
-06	4.169272E+00	4.000000E-01			
Ni		-1.554367E+05	4.626528E		
-05	1.703868E+02	1.000000E+01			
N		-2.152964E+05	9.906443E		
-07	1.427888E+00	2.000000E-02			
Fe		-1.164096E+05	5.670544E		
-04	1.582108E+03	8.835600E+01			
Total					
1.788241E+03	1.000000E+02				

Amount	Phase	Mole fraction of component within phase		
compnt moles				
		C	Si	Mn
1.7882E+03	LIQUID	0.0011174	0.0069688	0.0065145

		Cr	Mo	Ni
1.7882E+03	LIQUID	0.0022585	0.0023315	0.0952818

		N	Fe
1.7882E+03	LIQUID	0.0007985	0.8847290

Gibbs Energy = -2.1840890602E+08 J System Enthalpy = 1.3038617624E+08 J

****
* WARNING/ERRORS HAVE BEEN DETECTED *
****

3240 Warnings: Multiphase, temperature range violation - Unary data

MULTIPHASE OPTION ?