```
 Date and time of run 20-MAY-2011  16:36:03
> 20110520163549 MTDATA 4.81 2007-12-06, LOG /obelix/users/ashwin/mt/mt944.log
> 20110520163549 U-32986 on LNX-000-* (UNIX) using sgm000.exe
> 20110520163603 MODULE 3     creates MPI file /obelix/users/ashwin/mt/def.mpi
> 20110520163603 MODULE 3     reads MPI file /obelix/users/ashwin/mt/def.mpi
> 20110520163603 MODULE 3     creates MPR file /obelix/users/ashwin/mt/def.mpr
 $(Number of lines of title)   8
 * DATAFILE = /obelix/users/ashwin/mt/def.mpi -  CREATED 16:36:03 20-MAY-2011
 * SYSTEM = Fe,C,
 * NUMBER OF PHASES  =   14
 * NUMBER OF SPECIES =   20
 *

 DATA FILE = /obelix/users/ashwin/mt/def.mpi



 *** PROBLEM settings ***

 SYSTEM ELEMENTS : CFe


 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P
    1      Fe                      # TO BAL    1776.35
    2      C                       NORMAL      66.6073


 NUMBER    PHASE                   STATUS      MODEL
    1      DIAMOND_FCC_A4          absent      PURE SUBSTANCE
    2      GRAPHITE                absent      PURE SUBSTANCE
    3      LIQUID                  absent      REDLICH-KISTER
    4      BCC_A2                  NORMAL      SUBLATTICE
    5      CEMENTITE               NORMAL      PURE SUBSTANCE
    6      FCC_A1                  NORMAL      REDLICH-KISTER
    7      FE4N                    absent      PURE SUBSTANCE
    8      FECN_CHI                absent      PURE SUBSTANCE
    9      HCP_A3                  absent      SUBLATTICE
   10      KSI_CARBIDE             absent      PURE SUBSTANCE
   11      M5C2                    absent      PURE SUBSTANCE
   12      M7C3                    absent      PURE SUBSTANCE
   13      M23C6                   absent      PURE SUBSTANCE
   14      LAVES_PHASE_C14         absent      PURE SUBSTANCE


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT
    1      C<DIAMOND_FCC_A4>       NORMAL
    2      C<GRAPHITE>             NORMAL
    3      C<LIQUID>               NORMAL
    4      Fe<LIQUID>              NORMAL
    5      Fe:1<BCC_A2>            NORMAL
    6      C:2<BCC_A2>             NORMAL
    7      Va:2<BCC_A2>            NORMAL
    8      Fe3C<CEMENTITE>         NORMAL
    9      FeC<FCC_A1>             NORMAL
   10      Fe<FCC_A1>              NORMAL
   11      Fe4C<FE4N>              NORMAL
   12      Fe2.2C<FECN_CHI>        NORMAL
   13      Fe:1<HCP_A3>            NORMAL
   14      C:2<HCP_A3>             NORMAL
   15      Va:2<HCP_A3>            NORMAL
   16      Fe3C<KSI_CARBIDE>       NORMAL
   17      Fe5C2<M5C2>             NORMAL
   18      Fe7C3<M7C3>             NORMAL
   19      Fe20Fe3C6<M23C6>        NORMAL
   20      Fe2Fe<LAVES_PHASE_C1    NORMAL
```

UNARY	SOURCE	Tmin/K	Tmax/K
C<DIAMOND_FCC_A4>	tcfe	298.15	6000.00
C<GRAPHITE>	tcfe	298.15	6000.00
C<LIQUID>	tcfe	298.15	6000.00
Fe<LIQUID>	tcfe	298.15	6000.00
Fe:C<BCC_A2:1:3>	tcfe	298.15	6000.00
Fe:Va<BCC_A2:1:3>	tcfe	298.15	6000.00
Fe3C<CEMENTITE>	tcfe	298.15	6000.00
FeC<FCC_A1>	tcfe	298.15	6000.00
Fe<FCC_A1>	tcfe	298.15	6000.00
Fe4C<FE4N>	tcfe	298.15	6000.00
Fe2.2C<FECN_CHI>	tcfe	298.15	6000.00
Fe:C<HCP_A3:1:0.5>	tcfe	298.15	6000.00
Fe:Va<HCP_A3:1:0.5>	tcfe	298.15	6000.00
Fe3C<KSI_CARBIDE>	tcfe	298.15	6000.00
Fe5C2<M5C2>	tcfe	298.15	6000.00
Fe7C3<M7C3>	tcfe	298.15	6000.00
Fe20Fe3C6<M23C6>	tcfe	298.15	6000.00
Fe2Fe<LAVES_PHASE_C14>	tcfe	298.15	6000.00

TEMPERATURE	:	800.0000	
PRESSURE/Pa	:	101325.0	
VOLUME/m3	:	undefined	
SYSTEM AMOUNT/mol	:	undefined	
COMP. AMOUNTS/mol	:	1776.345	66.60727
SYSTEM MASS/kg	:	100.0000	
COMP. MASSES/kg	:	99.20000	0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

Stage 1* only requested

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

Temperature = 800.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-2.990722E+04	1.115085E-02	1.776345E+03	9.920000E+01
C		-1.122770E+03	8.446806E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
8.806461E+01	BCC_A2	0.9999820	0.0000180
1.193539E+01	CEMENTITE	0.9331051	0.0668949

Gibbs Energy = -5.3200206788E+07 J System Enthalpy = 3.0287493924E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

```
 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   810.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   810.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.047821E+04 1.082917E-02 1.776345E+03 9.920000E+01
C                           -1.624340E+03 7.856941E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.806820E+01 BCC_A2             0.9999793       0.0000207
 1.193180E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -5.4248175006E+07 J   System Enthalpy =  3.0991224095E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   820.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   820.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-3.105452E+04	1.051606E-02	1.776345E+03	9.920000E+01
C		-2.125352E+03	7.321783E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
8.807223E+01	BCC_A2	0.9999762	0.0000238
1.192777E+01	CEMENTITE	0.9331051	0.0668949

Gibbs Energy = -5.5304880102E+07 J   System Enthalpy = 3.1702912632E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

NUMBER	SUBSTANCE	STATUS/CONSTRAINT

TEMPERATURE	:	830.0000
PRESSURE/Pa	:	101325.0
VOLUME/m3	:	undefined
SYSTEM AMOUNT/mol	:	undefined
COMP. AMOUNTS/mol	:	1776.345 66.60727
SYSTEM MASS/kg	:	100.0000
COMP. MASSES/kg	:	99.20000 0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature =   830.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-3.163549E+04	1.021232E-02	1.776345E+03	9.920000E+01
C		-2.626756E+03	6.834296E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
8.807676E+01	BCC_A2	0.9999728	0.0000272
1.192324E+01	CEMENTITE	0.9331051	0.0668949

Gibbs Energy = -5.6370314354E+07 J   System Enthalpy = 3.2422854700E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

```
 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   840.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   840.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.222128E+04 9.917435E-03 1.776345E+03 9.920000E+01
C                           -3.128103E+03 6.389791E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.808183E+01 BCC_A2             0.9999690       0.0000310
 1.191817E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -5.7444473908E+07 J   System Enthalpy =  3.3151366551E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   850.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
```

```
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   850.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.281221E+04 9.630704E-03 1.776345E+03 9.920000E+01
C                           -3.628666E+03 5.984322E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.808748E+01 BCC_A2             0.9999647       0.0000353
 1.191252E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -5.8527358900E+07 J   System Enthalpy =  3.3888787565E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   860.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   860.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.340788E+04 9.352444E-03 1.776345E+03 9.920000E+01
C                           -4.128971E+03 5.613337E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.809378E+01 BCC_A2             0.9999599       0.0000401
 1.190622E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -5.9618973602E+07 J   System Enthalpy =  3.4635482423E+07 J
```

```
 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   870.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   870.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.400877E+04 9.081788E-03 1.776345E+03 9.920000E+01
C                           -4.627927E+03 5.274085E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.810079E+01 BCC_A2             0.9999546       0.0000454
 1.189921E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.0719326592E+07 J   System Enthalpy =  3.5391844682E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   880.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
```

```
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   880.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.461432E+04 8.819234E-03 1.776345E+03 9.920000E+01
C                           -5.126401E+03 4.962689E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.810856E+01 BCC_A2             0.9999487       0.0000513
 1.189144E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.1828430942E+07 J   System Enthalpy =  3.6158297711E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   890.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   890.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.522476E+04 8.564256E-03 1.776345E+03 9.920000E+01
C                           -5.623787E+03 4.676757E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
```

```
                                   Fe              C
 8.811717E+01 BCC_A2              0.9999421       0.0000579
 1.188283E+01 CEMENTITE           0.9331051       0.0668949

Gibbs Energy = -6.2946304434E+07 J   System Enthalpy =  3.6935299902E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   900.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   900.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.584068E+04 8.315980E-03 1.776345E+03 9.920000E+01
C                           -6.118920E+03 4.414445E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                   Fe              C
 8.812669E+01 BCC_A2              0.9999349       0.0000651
 1.187331E+01 CEMENTITE           0.9331051       0.0668949

Gibbs Energy = -6.4072969809E+07 J   System Enthalpy =  3.7723346899E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT
```

```
 TEMPERATURE       :   910.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   910.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.646144E+04 8.074965E-03 1.776345E+03 9.920000E+01
C                           -6.612676E+03 4.172893E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.813720E+01 BCC_A2             0.9999270       0.0000730
 1.186280E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.5208455038E+07 J   System Enthalpy =  3.8522977024E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   920.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   920.0000 K

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

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

```
Fe                          -3.708680E+04 7.841223E-03 1.776345E+03 9.920000E+01
C                           -7.105266E+03 3.949990E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.814878E+01 BCC_A2             0.9999182       0.0000818
 1.185122E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.6352793638E+07 J   System Enthalpy =  3.9334774211E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   930.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   930.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.771826E+04 7.613062E-03 1.776345E+03 9.920000E+01
C                           -7.594024E+03 3.745266E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.816153E+01 BCC_A2             0.9999085       0.0000915
 1.183847E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.7506025017E+07 J   System Enthalpy =  4.0159372771E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL
```

```
 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   940.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   940.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -3.835409E+04 7.392036E-03 1.776345E+03 9.920000E+01
C                           -8.081606E+03 3.555711E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.817555E+01 BCC_A2             0.9998979       0.0001021
 1.182445E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -6.8668194863E+07 J   System Enthalpy =  4.0997465709E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   950.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   950.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-3.899531E+04	7.176995E-03	1.776345E+03	9.920000E+01
C		-8.566193E+03	3.380724E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
8.819094E+01	BCC_A2	0.9998862	0.0001138
1.180906E+01	CEMENTITE	0.9331051	0.0668949

Gibbs Energy = -6.9839355577E+07 J   System Enthalpy = 4.1849806386E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

NUMBER	SUBSTANCE	STATUS/CONSTRAINT

TEMPERATURE	:	960.0000
PRESSURE/Pa	:	101325.0
VOLUME/m3	:	undefined
SYSTEM AMOUNT/mol	:	undefined
COMP. AMOUNTS/mol	:	1776.345 66.60727
SYSTEM MASS/kg	:	100.0000
COMP. MASSES/kg	:	99.20000 0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature =   960.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-3.964136E+04	6.968272E-03	1.776345E+03	9.920000E+01
C		-9.048510E+03	3.218646E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
8.820781E+01	BCC_A2	0.9998735	0.0001265
1.179219E+01	CEMENTITE	0.9331051	0.0668949

Gibbs Energy = -7.1019566759E+07 J   System Enthalpy = 4.2717218908E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

```
 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   970.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   970.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.029296E+04 6.765085E-03 1.776345E+03 9.920000E+01
C                           -9.527086E+03 3.068866E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.822630E+01 BCC_A2             0.9998595       0.0001405
 1.177370E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -7.2208895747E+07 J   System Enthalpy =  4.3600605811E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   980.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
```

```
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   980.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.094994E+04 6.567449E-03 1.776345E+03 9.920000E+01
C                           -1.000207E+04 2.930196E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.824654E+01 BCC_A2             0.9998442       0.0001558
 1.175346E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -7.3407418210E+07 J   System Enthalpy =  4.4500952366E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   990.0000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =   990.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.161218E+04 6.375326E-03 1.776345E+03 9.920000E+01
C                           -1.047343E+04 2.801639E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 8.826867E+01 BCC_A2             0.9998274       0.0001726
 1.173133E+01 CEMENTITE          0.9331051       0.0668949

Gibbs Energy = -7.4615218818E+07 J   System Enthalpy =  4.5419340733E+07 J
```

```
 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1000.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1000.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.228096E+04 6.187642E-03 1.776345E+03 9.920000E+01
C                           -1.093742E+04 2.683504E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 6.490142E-01 CEMENTITE          0.9331051       0.0668949
 9.935099E+01 FCC_A1             0.9923847       0.0076153

Gibbs Energy = -7.5834085406E+07 J   System Enthalpy =  5.4138868335E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1010.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
```

```
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1010.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.300260E+04 5.971323E-03 1.776345E+03 9.920000E+01
C                           -1.125485E+04 2.617836E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 2.335808E-01 CEMENTITE          0.9331051       0.0668949
 9.976642E+01 FCC_A1             0.9921379       0.0078621

Gibbs Energy = -7.7137125606E+07 J   System Enthalpy =  5.4803723138E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1020.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1020.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.372191E+04 5.768174E-03 1.776345E+03 9.920000E+01
C                           -1.173305E+04 2.507036E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
```

```
                                    Fe              C
 1.000000E+02 FCC_A1              0.9920000       0.0080000

Gibbs Energy = -7.8446689210E+07 J   System Enthalpy =  5.5437536485E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1030.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1030.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.443702E+04 5.578425E-03 1.776345E+03 9.920000E+01
C                           -1.241144E+04 2.347423E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                    Fe              C
 1.000000E+02 FCC_A1              0.9920000       0.0080000

Gibbs Energy = -7.9762177803E+07 J   System Enthalpy =  5.6030947709E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1040.000
 PRESSURE/Pa       :   101325.0
```

```
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1040.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.515532E+04 5.396394E-03 1.776345E+03 9.920000E+01
C                           -1.309192E+04 2.200223E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.1083435302E+07 J   System Enthalpy =  5.6625917476E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1050.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1050.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.587677E+04 5.221717E-03 1.776345E+03 9.920000E+01
C                           -1.377450E+04 2.064304E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02
```

```
Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.2410421218E+07 J   System Enthalpy =  5.7222444729E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1060.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1060.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.660131E+04 5.054061E-03 1.776345E+03 9.920000E+01
C                           -1.445919E+04 1.938646E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.3743095821E+07 J   System Enthalpy =  5.7820528495E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT
```

```
 TEMPERATURE       :   1070.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1070.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.732898E+04 4.893048E-03 1.776345E+03 9.920000E+01
C                           -1.514592E+04 1.822359E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.5081420123E+07 J   System Enthalpy =  5.8420167876E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1080.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1080.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.805971E+04 4.738392E-03 1.776345E+03 9.920000E+01
```

```
C                          -1.583474E+04 1.714612E-01 6.660727E+01 8.000000E-01
Total                                                 1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe             C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.6425355856E+07 J   System Enthalpy =  5.9021362047E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1090.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1090.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                         -4.879356E+04 4.589751E-03 1.776345E+03 9.920000E+01
C                          -1.652554E+04 1.614686E-01 6.660727E+01 8.000000E-01
Total                                                 1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe             C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.7774865455E+07 J   System Enthalpy =  5.9624110258E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT
```

```
 TEMPERATURE       :   1100.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1100.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -4.953041E+04 4.446893E-03 1.776345E+03 9.920000E+01
C                           -1.721842E+04 1.521900E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -8.9129912036E+07 J   System Enthalpy =  6.0228411815E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1110.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1110.0000 K

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

```
Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.027030E+04 4.309513E-03 1.776345E+03 9.920000E+01
C                           -1.791329E+04 1.435666E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe             C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -9.0490459379E+07 J   System Enthalpy =  6.0834266104E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1120.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1120.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.101315E+04 4.177391E-03 1.776345E+03 9.920000E+01
C                           -1.861021E+04 1.355432E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe             C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -9.1856471915E+07 J   System Enthalpy =  6.1441672557E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL
```

```
 NUMBER    SUBSTANCE              STATUS/CONSTRAINT


 TEMPERATURE       :   1130.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1130.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.175896E+04 4.050275E-03 1.776345E+03 9.920000E+01
C                           -1.930914E+04 1.280710E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -9.3227914701E+07 J   System Enthalpy =  6.2050630675E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT              STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                  STATUS      MODEL


 NUMBER    SUBSTANCE              STATUS/CONSTRAINT


 TEMPERATURE       :   1140.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1140.0000 K
```

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.250778E+04	3.927912E-03	1.776345E+03	9.920000E+01
C		-2.001001E+04	1.211064E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -9.4604753412E+07 J System Enthalpy = 6.2661140019E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

NUMBER	SUBSTANCE	STATUS/CONSTRAINT

TEMPERATURE	:	1150.000	
PRESSURE/Pa	:	101325.0	
VOLUME/m3	:	undefined	
SYSTEM AMOUNT/mol	:	undefined	
COMP. AMOUNTS/mol	:	1776.345	66.60727
SYSTEM MASS/kg	:	100.0000	
COMP. MASSES/kg	:	99.20000	0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature = 1150.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.325957E+04	3.810092E-03	1.776345E+03	9.920000E+01
C		-2.071282E+04	1.146088E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -9.5986954319E+07 J System Enthalpy = 6.3273200199E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

```
 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT

 TEMPERATURE       :   1160.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000

 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000

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

Temperature =  1160.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.401426E+04 3.696637E-03 1.776345E+03 9.920000E+01
C                           -2.141761E+04 1.085406E-01 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe             C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -9.7374484277E+07 J   System Enthalpy =  6.3886810878E+07 J


 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT

 TEMPERATURE       :   1170.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000

 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000

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

Temperature = 1170.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.477187E+04	3.587335E-03	1.776345E+03	9.920000E+01
C		-2.212432E+04	1.028690E-01	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -9.8767310711E+07 J   System Enthalpy = 6.4501971772E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

NUMBER	SUBSTANCE	STATUS/CONSTRAINT

TEMPERATURE	:	1180.000
PRESSURE/Pa	:	101325.0
VOLUME/m3	:	undefined
SYSTEM AMOUNT/mol	:	undefined
COMP. AMOUNTS/mol	:	1776.345 66.60727
SYSTEM MASS/kg	:	100.0000
COMP. MASSES/kg	:	99.20000 0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature = 1180.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.553231E+04	3.482034E-03	1.776345E+03	9.920000E+01
C		-2.283304E+04	9.756266E-02	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -1.0016540160E+08 J   System Enthalpy = 6.5118682641E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

```
 NUMBER    PHASE                    STATUS      MODEL

 NUMBER    SUBSTANCE                STATUS/CONSTRAINT

 TEMPERATURE       :   1190.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000

 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1190.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.629574E+04 3.380494E-03 1.776345E+03 9.920000E+01
C                           -2.354354E+04 9.259559E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.0156872546E+08 J   System Enthalpy =  6.5736943294E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT                STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                    STATUS      MODEL

 NUMBER    SUBSTANCE                STATUS/CONSTRAINT

 TEMPERATURE       :   1200.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000

 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000
```

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

Temperature = 1200.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.706191E+04	3.282632E-03	1.776345E+03	9.920000E+01
C		-2.425608E+04	8.794013E-02	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -1.0297725135E+08 J   System Enthalpy = 6.6356753584E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER COMPONENT STATUS AMOUNT DELTA REF.P

NUMBER PHASE STATUS MODEL

NUMBER SUBSTANCE STATUS/CONSTRAINT

TEMPERATURE	:	1210.000	
PRESSURE/Pa	:	101325.0	
VOLUME/m3	:	undefined	
SYSTEM AMOUNT/mol	:	undefined	
COMP. AMOUNTS/mol	:	1776.345	66.60727
SYSTEM MASS/kg	:	100.0000	
COMP. MASSES/kg	:	99.20000	0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature = 1210.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.783095E+04	3.188242E-03	1.776345E+03	9.920000E+01
C		-2.497047E+04	8.357449E-02	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -1.0439094882E+08 J   System Enthalpy = 6.6978113414E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

```
 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1220.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1220.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -5.860284E+04 3.097181E-03 1.776345E+03 9.920000E+01
C                           -2.568673E+04 7.947729E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.0580978794E+08 J   System Enthalpy =  6.7601022713E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P

 NUMBER    PHASE                   STATUS      MODEL

 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1230.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000
```

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

Temperature = 1230.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.937756E+04	3.009301E-03	1.776345E+03	9.920000E+01
C		-2.640483E+04	7.562918E-02	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -1.0723373926E+08 J   System Enthalpy = 6.8225481467E+07 J

*** PROBLEM settings ***
Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P

NUMBER	PHASE	STATUS	MODEL

NUMBER	SUBSTANCE	STATUS/CONSTRAINT

TEMPERATURE	:	1240.000
PRESSURE/Pa	:	101325.0
VOLUME/m3	:	undefined
SYSTEM AMOUNT/mol	:	undefined
COMP. AMOUNTS/mol	:	1776.345 66.60727
SYSTEM MASS/kg	:	100.0000
COMP. MASSES/kg	:	99.20000 0.8000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	800.000	to	1300.00	by	10.0000

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

Temperature = 1240.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.015506E+04	2.924486E-03	1.776345E+03	9.920000E+01
C		-2.712481E+04	7.201188E-02	6.660727E+01	8.000000E-01
Total				1.842953E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase	
		Fe	C
1.000000E+02	FCC_A1	0.9920000	0.0080000

Gibbs Energy = -1.0866277382E+08 J   System Enthalpy = 6.8851489696E+07 J

```
 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1250.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1250.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.093526E+04 2.842621E-03 1.776345E+03 9.920000E+01
C                           -2.784670E+04 6.860877E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.1009686312E+08 J   System Enthalpy =  6.9479047448E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1260.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000
```

```
 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1260.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.171838E+04 2.763526E-03 1.776345E+03 9.920000E+01
C                           -2.857028E+04 6.540616E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.1153597911E+08 J   System Enthalpy =  7.0108154817E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1270.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1270.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.250406E+04 2.687173E-03 1.776345E+03 9.920000E+01
C                           -2.929586E+04 6.238816E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.1298009421E+08 J   System Enthalpy =  7.0738811915E+07 J
```

```
 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1280.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1280.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.329255E+04 2.613384E-03 1.776345E+03 9.920000E+01
C                           -3.002318E+04 5.954366E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.1442918125E+08 J   System Enthalpy =  7.1371018918E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1290.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000
```

```
 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1290.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.408376E+04 2.542072E-03 1.776345E+03 9.920000E+01
C                           -3.075230E+04 5.686045E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000

Gibbs Energy = -1.1588321350E+08 J   System Enthalpy =  7.2004775998E+07 J



 *** PROBLEM settings ***
 Changes only listed under components/phases/substances

 NUMBER    COMPONENT               STATUS      AMOUNT     DELTA    REF.P


 NUMBER    PHASE                   STATUS      MODEL


 NUMBER    SUBSTANCE               STATUS/CONSTRAINT


 TEMPERATURE       :   1300.000
 PRESSURE/Pa       :   101325.0
 VOLUME/m3         :    undefined
 SYSTEM AMOUNT/mol :    undefined
 COMP. AMOUNTS/mol :   1776.345       66.60727
 SYSTEM MASS/kg    :   100.0000
 COMP. MASSES/kg   :   99.20000      0.8000000


 STEPPED VARIABLE     INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE            800.000       to      1300.00       by      10.0000


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

Temperature =  1300.0000 K

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

Component      Ref.Phase     Chem.Pot.    Activity     Amount/mol   Mass/kg
Fe                          -6.487767E+04 2.473141E-03 1.776345E+03 9.920000E+01
C                           -3.148321E+04 5.432767E-02 6.660727E+01 8.000000E-01
Total                                                  1.842953E+03 1.000000E+02

Mass/kg       Phase               Mass fraction of component within phase
                                  Fe              C
 1.000000E+02 FCC_A1             0.9920000       0.0080000
```

Gibbs Energy = -1.1734216463E+08 J System Enthalpy = 7.2640083374E+07 J