

Printed: Wednesday, September 23, 2009 12:34:22

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Date and time of run 23-SEP-2009 11:18:02
> 20090923111729 MTDATA 4.81 2007-12-06, LOG /obelix/users/ashwin/mt_data_ash/mt4.log
> 20090923111729 U-32986 on LNX-000-* (UNIX) using sgm000.exe
> 20090923111802 MODULE 3      creates MPI file /obelix/users/ashwin/mt_data_ash/def.mpi
> 20090923111802 MODULE 3      reads MPI file /obelix/users/ashwin/mt_data_ash/def.mpi
> 20090923111802 MODULE 3      creates MPR file /obelix/users/ashwin/mt_data_ash/def.mpr
$(Number of lines of title)  8
* DATAFILE = /obelix/users/ashwin/mt_data_ash/def.mpi -   CREATED 11:18:02 23-SEP-2009
* SYSTEM = Fe,Cr,Mn,C,
* NUMBER OF PHASES = 18
* NUMBER OF SPECIES = 68
*

```

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

*** PROBLEM settings ***

SYSTEM ELEMENTS : CCrFeMn

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
1	Fe	# TO BAL	1534.60		
2	Cr	NORMAL	263.481		
3	Mn	NORMAL	7.28093		
4	C	NORMAL	16.6518		

NUMBER	PHASE	STATUS	MODEL
1	DIAMOND_FCC_A4	absent	PURE SUBSTANCE
2	GRAPHITE	absent	PURE SUBSTANCE
3	LIQUID	absent	REDLICH-KISTER
4	BCC_A2	1 M-G	SUBLATTICE
5	CEMENTITE	absent	SUBLATTICE
6	FCC_A1	1 M-G	SUBLATTICE
7	FE4N	absent	SUBLATTICE
8	HCP_A3	absent	SUBLATTICE
9	KSI_CARBIDE	absent	SUBLATTICE
10	M3C2	absent	PURE SUBSTANCE
11	M7C3	absent	SUBLATTICE
12	M23C6	absent	SUBLATTICE
13	FECN_CHI	absent	PURE SUBSTANCE
14	M5C2	absent	SUBLATTICE
15	CR3SI	absent	SUBLATTICE
16	LAVES_PHASE_C14	absent	SUBLATTICE
17	CHI_A12	absent	SUBLATTICE
18	SIGMA	absent	SUBLATTICE

NUMBER	SUBSTANCE	STATUS/CONSTRAINT
1	C<DIAMOND_FCC_A4>	NORMAL
2	C<GRAPHITE>	NORMAL
3	C<LIQUID>	NORMAL
4	Cr<LIQUID>	NORMAL
5	Fe<LIQUID>	NORMAL
6	Mn<LIQUID>	NORMAL
7	Cr:1<BCC_A2>	NORMAL
8	Fe:1<BCC_A2>	NORMAL
9	Mn:1<BCC_A2>	NORMAL
10	C:2<BCC_A2>	NORMAL

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11	Va:2<BCC_A2>	NORMAL
12	Cr:1<CEMENTITE>	NORMAL
13	Fe:1<CEMENTITE>	NORMAL
14	Mn:1<CEMENTITE>	NORMAL
15	C:2<CEMENTITE>	NORMAL
16	Cr:1<FCC_A1>	NORMAL
17	Fe:1<FCC_A1>	NORMAL
18	Mn:1<FCC_A1>	NORMAL
19	C:2<FCC_A1>	NORMAL
20	Va:2<FCC_A1>	NORMAL
21	Cr:1<FE4N>	NORMAL
22	Fe:1<FE4N>	NORMAL
23	Mn:1<FE4N>	NORMAL
24	C:2<FE4N>	NORMAL
25	Cr:1<HCP_A3>	NORMAL
26	Fe:1<HCP_A3>	NORMAL
27	Mn:1<HCP_A3>	NORMAL
28	C:2<HCP_A3>	NORMAL
29	Va:2<HCP_A3>	NORMAL
30	Cr:1<KSI_CARBIDE>	NORMAL
31	Fe:1<KSI_CARBIDE>	NORMAL
32	C:2<KSI_CARBIDE>	NORMAL
33	Cr3C2<M3C2>	NORMAL
34	Cr:1<M7C3>	NORMAL
35	Fe:1<M7C3>	NORMAL
36	Mn:1<M7C3>	NORMAL
37	C:2<M7C3>	NORMAL
38	Cr:1<M23C6>	NORMAL
39	Fe:1<M23C6>	NORMAL
40	Mn:1<M23C6>	NORMAL
41	Cr:2<M23C6>	NORMAL
42	Fe:2<M23C6>	NORMAL
43	Mn:2<M23C6>	NORMAL
44	C:3<M23C6>	NORMAL
45	Fe2.2C<FECN_CHI>	NORMAL
46	Fe:1<M5C2>	NORMAL
47	Mn:1<M5C2>	NORMAL
48	C:2<M5C2>	NORMAL
49	Cr:1<CR3SI>	NORMAL
50	Fe:1<CR3SI>	NORMAL
51	Cr:2<CR3SI>	NORMAL
52	Cr:1<LAVES_PHASE_C14>	NORMAL
53	Fe:1<LAVES_PHASE_C14>	NORMAL
54	Mn:1<LAVES_PHASE_C14>	NORMAL
55	Cr:2<LAVES_PHASE_C14>	NORMAL
56	Fe:2<LAVES_PHASE_C14>	NORMAL
57	Mn:2<LAVES_PHASE_C14>	NORMAL
58	Cr:1<CHI_A12>	NORMAL
59	Fe:1<CHI_A12>	NORMAL
60	Cr:2<CHI_A12>	NORMAL
61	Cr:3<CHI_A12>	NORMAL
62	Fe:3<CHI_A12>	NORMAL
63	Fe:1<SIGMA>	NORMAL
64	Mn:1<SIGMA>	NORMAL
65	Cr:2<SIGMA>	NORMAL
66	Cr:3<SIGMA>	NORMAL
67	Fe:3<SIGMA>	NORMAL
68	Mn:3<SIGMA>	NORMAL

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C<DIAMOND_FCC_A4>	tcfe	298.15	6000.00
C<GRAPHITE>	tcfe	298.15	6000.00
C<LIQUID>	tcfe	298.15	6000.00
Cr<LIQUID>	tcfe	298.15	6000.00
Fe<LIQUID>	tcfe	298.15	6000.00
Mn<LIQUID>	tcfe	298.15	2000.00
Cr:C<BCC_A2:1:3>	tcfe	298.15	6000.00
Cr:Va<BCC_A2:1:3>	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
Mn:C<BCC_A2:1:3>	tcfe	298.15	2000.00
Mn:Va<BCC_A2:1:3>	tcfe	298.15	2000.00
Cr:C<CEMENTITE:3:1>	tcfe	298.15	6000.00
Fe:C<CEMENTITE:3:1>	tcfe	298.15	6000.00
Mn:C<CEMENTITE:3:1>	tcfe	298.15	2000.00
Cr:C<FCC_A1:1:1>	tcfe	298.15	6000.00
Cr:Va<FCC_A1:1:1>	tcfe	298.15	6000.00
Fe:C<FCC_A1:1:1>	tcfe	298.15	6000.00
Fe:Va<FCC_A1:1:1>	tcfe	298.15	6000.00
Mn:C<FCC_A1:1:1>	tcfe	298.15	2000.00
Mn:Va<FCC_A1:1:1>	tcfe	298.15	2000.00
Cr:C<FE4N:4:1>	tcfe	298.15	300.00
Fe:C<FE4N:4:1>	tcfe	298.15	6000.00
Mn:C<FE4N:4:1>	tcfe	298.15	300.00
Cr:C<HCP_A3:1:0.5>	tcfe	298.15	6000.00
Cr:Va<HCP_A3:1:0.5>	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
Mn:C<HCP_A3:1:0.5>	tcfe	298.15	2000.00
Mn:Va<HCP_A3:1:0.5>	tcfe	298.15	2000.00
Cr:C<KSI_CARBIIDE:3:1>	tcfe	298.15	6000.00
Fe:C<KSI_CARBIIDE:3:1>	tcfe	298.15	6000.00
Cr3C2<M3C2>	tcfe	298.15	6000.00
Cr:C<M7C3:7:3>	tcfe	298.15	6000.00
Fe:C<M7C3:7:3>	tcfe	298.15	6000.00
Mn:C<M7C3:7:3>	tcfe	298.15	2000.00
Cr:Cr:C<M23C6:20:3:6>	tcfe	298.15	6000.00
Cr:Fe:C<M23C6:20:3:6>	tcfe	298.15	6000.00
Cr:Mn:C<M23C6:20:3:6>	tcfe	298.15	2000.00
Fe:Cr:C<M23C6:20:3:6>	tcfe	298.15	6000.00
Fe:Fe:C<M23C6:20:3:6>	tcfe	298.15	6000.00
Fe:Mn:C<M23C6:20:3:6>	tcfe	298.15	2000.00
Mn:Cr:C<M23C6:20:3:6>	tcfe	298.15	2000.00
Mn:Fe:C<M23C6:20:3:6>	tcfe	298.15	2000.00
Mn:Mn:C<M23C6:20:3:6>	tcfe	298.15	2000.00
Fe2.2C<FECN_CHI>	tcfe	298.15	6000.00
Fe:C<M5C2:5:2>	tcfe	298.15	6000.00
Mn:C<M5C2:5:2>	tcfe	298.15	2000.00
Cr:Cr<CR3SI:3:1>	tcfe	298.15	6000.00
Fe:Cr<CR3SI:3:1>	tcfe	298.15	6000.00
Cr:Cr<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Cr:Fe<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Cr:Mn<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Fe:Cr<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Fe:Fe<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Fe:Mn<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Mn:Cr<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Mn:Fe<LAVES_PHASE_C14:2:1>	tcfe	298.15	6000.00
Mn:Mn<LAVES_PHASE_C14:2:1>	tcfe	298.15	2000.00
Cr:Cr:Cr<CHI_A12:24:10:24>	tcfe	298.15	6000.00
Cr:Cr:Fe<CHI_A12:24:10:24>	tcfe	298.15	6000.00

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Fe:Cr:Cr<CHI_A12:24:10:24>      tcfe      298.15      6000.00
Fe:Cr:Fe<CHI_A12:24:10:24>      tcfe      298.15      6000.00
Fe:Cr:Cr<SIGMA:8:4:18>          tcfe      298.15      6000.00
Fe:Cr:Fe<SIGMA:8:4:18>          tcfe      298.15      6000.00
Fe:Cr:Mn<SIGMA:8:4:18>          tcfe      298.15      2000.00
Mn:Cr:Cr<SIGMA:8:4:18>          tcfe      298.15      2000.00
Mn:Cr:Fe<SIGMA:8:4:18>          tcfe      298.15      2000.00
Mn:Cr:Mn<SIGMA:8:4:18>          tcfe      298.15      2000.00
    
```

```

TEMPERATURE      :      973.0000
PRESSURE/Pa      :      101325.0
VOLUME/m3        :      undefined
SYSTEM AMOUNT/mol :      undefined
COMP. AMOUNTS/mol :      1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   :      100.0000
COMP. MASSES/kg  :      85.70000      13.70000      0.4000000      0.2000000
    
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STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

Stage 1* only requested

*** 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
Fe		-4.145268E+04	5.952588E-03	1.534605E+03	8.570000E+01
Cr		-4.234879E+04	5.328440E-03	2.634813E+02	1.370000E+01
Mn		-8.956714E+04	1.555209E-05	7.280928E+00	4.000000E-01
C		-2.868575E+04	2.884494E-02	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
7.340631E+01	BCC_A2	0.8697751	0.1272584	0.0027271
2.659369E+01	FCC_A1	0.8217371	0.1638898	0.0075136
		C		
7.340631E+01	BCC_A2	0.0002395		
2.659369E+01	FCC_A1	0.0068595		

Gibbs Energy = -7.5901397072E+07 J System Enthalpy = 4.8536448037E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE      : 993.0000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000

```

```

STEPPED VARIABLE  INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE       973.000      to      1773.00      by      20.0000

```

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

Temperature = 993.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-4.281391E+04	5.596577E-03	1.534605E+03	8.570000E+01
Cr		-4.394305E+04	4.881217E-03	2.634813E+02	1.370000E+01
Mn		-9.291401E+04	1.295927E-05	7.280928E+00	4.000000E-01
C		-3.147297E+04	2.210414E-02	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
6.426330E+01	BCC_A2	0.8677204	0.1293847	0.0026662
3.573670E+01	FCC_A1	0.8377221	0.1506942	0.0063985
		C		
6.426330E+01	BCC_A2	0.0002287		
3.573670E+01	FCC_A1	0.0051852		

Gibbs Energy = -7.8481189790E+07 J System Enthalpy = 5.0690984381E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1013.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000

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```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000          to          1773.00          by          20.0000

```

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

Temperature = 1013.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-4.420663E+04	5.255008E-03	1.534605E+03	8.570000E+01
Cr		-4.550060E+04	4.506635E-03	2.634813E+02	1.370000E+01
Mn		-9.618455E+04	1.097579E-05	7.280928E+00	4.000000E-01
C		-3.452499E+04	1.658776E-02	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
5.287997E+01	BCC_A2	0.8650680	0.1321123	0.0026056
4.712003E+01	FCC_A1	0.8479457	0.1424852	0.0055649
		C		
5.287997E+01	BCC_A2	0.0002141		
4.712003E+01	FCC_A1	0.0040042		

Gibbs Energy = -8.1103479347E+07 J System Enthalpy = 5.2698631536E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1033.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000          to          1773.00          by          20.0000

```

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

Temperature = 1033.0000 K

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

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Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-4.563140E+04	4.927904E-03	1.534605E+03	8.570000E+01
Cr		-4.700143E+04	4.201338E-03	2.634813E+02	1.370000E+01
Mn		-9.938524E+04	9.432269E-06	7.280928E+00	4.000000E-01
C		-3.781390E+04	1.224480E-02	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
3.865136E+01	BCC_A2	0.8616085	0.1356687	0.0025250
6.134864E+01	FCC_A1	0.8540965	0.1378387	0.0049293
		C		
3.865136E+01	BCC_A2	0.0001978		
6.134864E+01	FCC_A1	0.0031354		

Gibbs Energy = -8.3763453690E+07 J System Enthalpy = 5.4544929425E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
--------	-----------	--------	--------	-------	-------

NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1053.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

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

Temperature = 1053.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-4.708816E+04	4.615569E-03	1.534605E+03	8.570000E+01
Cr		-4.844251E+04	3.954062E-03	2.634813E+02	1.370000E+01
Mn		-1.025318E+05	8.203145E-06	7.280928E+00	4.000000E-01
C		-4.120986E+04	9.032619E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn

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2.188947E+01	BCC_A2	0.8568044	0.1405570	0.0024541
7.811053E+01	FCC_A1	0.8570548	0.1360032	0.0044332

C

2.188947E+01	BCC_A2	0.0001844
7.811053E+01	FCC_A1	0.0025088

Gibbs Energy = -8.6458148426E+07 J System Enthalpy = 5.6280371496E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
--------	-------	--------	-------

NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1073.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE	973.000 to 1773.00 by 20.0000

*** 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
Fe		-4.857718E+04	4.317945E-03	1.534605E+03	8.570000E+01
Cr		-4.982566E+04	3.754062E-03	2.634813E+02	1.370000E+01
Mn		-1.055512E+05	7.274390E-06	7.280928E+00	4.000000E-01
C		-4.450428E+04	6.816238E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
4.627314E+00	BCC_A2	0.8505223	0.1468846	0.0024157
9.537269E+01	FCC_A1	0.8573143	0.1365204	0.0040769
		C		
4.627314E+00	BCC_A2	0.0001774		
9.537269E+01	FCC_A1	0.0020884		

Gibbs Energy = -8.9184491635E+07 J System Enthalpy = 5.7869624839E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
--------	-----------	--------	--------	-------	-------

NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1093.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

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STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1093.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.007565E+04	4.045174E-03	1.534605E+03	8.570000E+01
Cr		-5.135418E+04	3.514291E-03	2.634813E+02	1.370000E+01
Mn		-1.080589E+05	6.854563E-06	7.280928E+00	4.000000E-01
C		-4.649377E+04	5.999451E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -9.1937899561E+07 J System Enthalpy = 5.9152658211E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1113.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1113.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.158038E+04	3.795965E-03	1.534605E+03	8.570000E+01
Cr		-5.296130E+04	3.269755E-03	2.634813E+02	1.370000E+01
Mn		-1.104208E+05	6.575526E-06	7.280928E+00	4.000000E-01
C		-4.803340E+04	5.569070E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -9.4713577715E+07 J System Enthalpy = 6.0361640879E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1133.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1133.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.309718E+04	3.565539E-03	1.534605E+03	8.570000E+01
Cr		-5.458068E+04	3.046022E-03	2.634813E+02	1.370000E+01
Mn		-1.127958E+05	6.308318E-06	7.280928E+00	4.000000E-01
C		-4.958106E+04	5.178748E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -9.7511044524E+07 J System Enthalpy = 6.1577653020E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1153.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE	973.000 to 1773.00 by 20.0000

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

Temperature = 1153.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.462583E+04	3.352241E-03	1.534605E+03	8.570000E+01
Cr		-5.621198E+04	2.841052E-03	2.634813E+02	1.370000E+01
Mn		-1.151842E+05	6.052203E-06	7.280928E+00	4.000000E-01

C -5.113662E+04 4.823958E-03 1.665182E+01 2.000000E-01
 Total 1.822019E+03 1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000

Mass/kg	Phase	Mass fraction of component within phase		
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.0033003974E+08 J System Enthalpy = 6.2800729932E+07 J

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

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1173.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	973.000	to	1773.00	by	20.0000

*** 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
Fe		-5.616569E+04	3.154710E-03	1.534605E+03	8.570000E+01
Cr		-5.785581E+04	2.652767E-03	2.634813E+02	1.370000E+01
Mn		-1.175860E+05	5.806745E-06	7.280928E+00	4.000000E-01
C		-5.269992E+04	4.500793E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000

Mass/kg	Phase	Mass fraction of component within phase		
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.0317031275E+08 J System Enthalpy = 6.4030907628E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1193.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1193.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.771769E+04	2.971233E-03	1.534605E+03	8.570000E+01
Cr		-5.951054E+04	2.479933E-03	2.634813E+02	1.370000E+01
Mn		-1.200008E+05	5.571646E-06	7.280928E+00	4.000000E-01
C		-5.427101E+04	4.205748E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.0603162214E+08 J System Enthalpy = 6.5268222778E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1213.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

```

STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1213.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-5.928143E+04	2.800699E-03	1.534605E+03	8.570000E+01
Cr		-6.117639E+04	2.320956E-03	2.634813E+02	1.370000E+01
Mn		-1.224286E+05	5.346501E-06	7.280928E+00	4.000000E-01
C		-5.584978E+04	3.935842E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.0891373516E+08 J System Enthalpy = 6.6512712641E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1233.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
```

```

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

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TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1233.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.085594E+04	2.642241E-03	1.534605E+03	8.570000E+01
Cr		-6.285461E+04	2.174219E-03	2.634813E+02	1.370000E+01
Mn		-1.248693E+05	5.130839E-06	7.280928E+00	4.000000E-01
C		-5.743597E+04	3.688517E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.1181642741E+08 J System Enthalpy = 6.7764415064E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1253.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	973.000	to	1773.00	by	20.0000

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

Temperature = 1253.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.244147E+04	2.494750E-03	1.534605E+03	8.570000E+01
Cr		-6.454456E+04	2.038713E-03	2.634813E+02	1.370000E+01

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Mn	-1.273227E+05	4.924319E-06	7.280928E+00	4.000000E-01
C	-5.902957E+04	3.461444E-03	1.665182E+01	2.000000E-01
Total			1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.1473948235E+08 J System Enthalpy = 6.9023368369E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1273.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	973.000	to	1773.00	by	20.0000

*** 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
Fe		-6.403858E+04	2.357164E-03	1.534605E+03	8.570000E+01
Cr		-6.624514E+04	1.913599E-03	2.634813E+02	1.370000E+01
Mn		-1.297887E+05	4.726624E-06	7.280928E+00	4.000000E-01
C		-6.063059E+04	3.252559E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.1768269099E+08 J System Enthalpy = 7.0289611384E+07 J

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*** 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	:	1293.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE	973.000 to 1773.00 by 20.0000

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

Temperature = 1293.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.564610E+04	2.228920E-03	1.534605E+03	8.570000E+01
Cr		-6.795785E+04	1.797656E-03	2.634813E+02	1.370000E+01
Mn		-1.322673E+05	4.537316E-06	7.280928E+00	4.000000E-01
C		-6.223879E+04	3.060128E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase
		Fe Cr Mn
1.000000E+02	FCC_A1	0.8570000 0.1370000 0.0040000
		C
1.000000E+02	FCC_A1	0.0020000

Gibbs Energy = -1.2064585151E+08 J System Enthalpy = 7.1563183365E+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	:	1313.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1313.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.726470E+04	2.109105E-03	1.534605E+03	8.570000E+01
Cr		-6.968148E+04	1.690265E-03	2.634813E+02	1.370000E+01
Mn		-1.347581E+05	4.356096E-06	7.280928E+00	4.000000E-01
C		-6.385419E+04	2.882534E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.2362876895E+08 J System Enthalpy = 7.2844123941E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
--------	-------	--------	-------

NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1333.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

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STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1333.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-6.889435E+04	1.997052E-03	1.534605E+03	8.570000E+01
Cr		-7.141598E+04	1.590670E-03	2.634813E+02	1.370000E+01
Mn		-1.372612E+05	4.182613E-06	7.280928E+00	4.000000E-01
C		-6.547668E+04	2.718381E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.2663125490E+08 J System Enthalpy = 7.4132473174E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
--------	-------	--------	-------

NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1353.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1353.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.053336E+04	1.892432E-03	1.534605E+03	8.570000E+01

Cr	-7.316325E+04	1.497930E-03	2.634813E+02	1.370000E+01
Mn	-1.397766E+05	4.016491E-06	7.280928E+00	4.000000E-01
C	-6.710605E+04	2.566452E-03	1.665182E+01	2.000000E-01
Total			1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.2965312719E+08 J System Enthalpy = 7.5428271424E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1373.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	973.000	to	1773.00	by	20.0000

*** 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
Fe		-7.218357E+04	1.794343E-03	1.534605E+03	8.570000E+01
Cr		-7.492074E+04	1.411805E-03	2.634813E+02	1.370000E+01
Mn		-1.423039E+05	3.857482E-06	7.280928E+00	4.000000E-01
C		-6.874243E+04	2.425592E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

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Gibbs Energy = -1.3269420967E+08 J System Enthalpy = 7.6731559406E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1393.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE	973.000 to 1773.00 by 20.0000

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

Temperature = 1393.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.384349E+04	1.702513E-03	1.534605E+03	8.570000E+01
Cr		-7.668885E+04	1.331674E-03	2.634813E+02	1.370000E+01
Mn		-1.448450E+05	3.704635E-06	7.280928E+00	4.000000E-01
C		-7.038545E+04	2.294863E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase
		Fe Cr Mn
1.000000E+02	FCC_A1	0.8570000 0.1370000 0.0040000
		C
1.000000E+02	FCC_A1	0.0020000

Gibbs Energy = -1.3575433188E+08 J System Enthalpy = 7.8042378110E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT			
TEMPERATURE	:	1413.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1413.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.551466E+04	1.616239E-03	1.534605E+03	8.570000E+01
Cr		-7.846919E+04	1.256862E-03	2.634813E+02	1.370000E+01
Mn		-1.473947E+05	3.559332E-06	7.280928E+00	4.000000E-01
C		-7.203552E+04	2.173284E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	FCC_A1	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	FCC_A1	0.0020000		

Gibbs Energy = -1.3883332887E+08 J System Enthalpy = 7.9360768816E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1433.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

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STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1433.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.719328E+04	1.535605E-03	1.534605E+03	8.570000E+01
Cr		-8.028052E+04	1.185082E-03	2.634813E+02	1.370000E+01
Mn		-1.499481E+05	3.422478E-06	7.280928E+00	4.000000E-01
C		-7.360707E+04	2.074905E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
7.240375E-01	BCC_A2	0.8351887	0.1608492	0.0034976
9.927596E+01	FCC_A1	0.8571591	0.1368261	0.0040037
		C		
7.240375E-01	BCC_A2	0.0004645		
9.927596E+01	FCC_A1	0.0020112		

Gibbs Energy = -1.4193104868E+08 J System Enthalpy = 8.0695814893E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1453.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.400000	0.200000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1453.0000 K

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

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Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-7.886396E+04	1.462011E-03	1.534605E+03	8.570000E+01
Cr		-8.225162E+04	1.104508E-03	2.634813E+02	1.370000E+01
Mn		-1.524511E+05	3.308217E-06	7.280928E+00	4.000000E-01
C		-7.454132E+04	2.090950E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
6.816079E+00	BCC_A2	0.8374307	0.1585190	0.0035477
9.318392E+01	FCC_A1	0.8584314	0.1354260	0.0040331
		C		
6.816079E+00	BCC_A2	0.0005027		
9.318392E+01	FCC_A1	0.0021095		

Gibbs Energy = -1.4504800096E+08 J System Enthalpy = 8.2111807563E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1473.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

*** 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
Fe		-8.054501E+04	1.392622E-03	1.534605E+03	8.570000E+01
Cr		-8.424025E+04	1.029908E-03	2.634813E+02	1.370000E+01
Mn		-1.549690E+05	3.196838E-06	7.280928E+00	4.000000E-01
C		-7.541556E+04	2.117026E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn

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1.323644E+01	BCC_A2	0.8396265	0.1562309	0.0035963
8.676356E+01	FCC_A1	0.8596505	0.1340662	0.0040616

C

1.323644E+01	BCC_A2	0.0005463
8.676356E+01	FCC_A1	0.0022218

Gibbs Energy = -1.4818460521E+08 J System Enthalpy = 8.3551236501E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1493.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE	973.000	to	1773.00	by	20.0000

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

Temperature = 1493.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.223681E+04	1.327107E-03	1.534605E+03	8.570000E+01
Cr		-8.624423E+04	9.609573E-04	2.634813E+02	1.370000E+01
Mn		-1.575030E+05	3.088030E-06	7.280928E+00	4.000000E-01
C		-7.623235E+04	2.152656E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.991166E+01	BCC_A2	0.8417454	0.1540154	0.0036432
8.008834E+01	FCC_A1	0.8607926	0.1327696	0.0040887
		C		
1.991166E+01	BCC_A2	0.0005960		
8.008834E+01	FCC_A1	0.0023491		

Gibbs Energy = -1.5134091106E+08 J System Enthalpy = 8.5013794481E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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```

TEMPERATURE      : 1513.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
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STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1513.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.393970E+04	1.265169E-03	1.534605E+03	8.570000E+01
Cr		-8.826143E+04	8.973237E-04	2.634813E+02	1.370000E+01
Mn		-1.600545E+05	2.981515E-06	7.280928E+00	4.000000E-01
C		-7.699551E+04	2.197266E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
2.676166E+01	BCC_A2	0.8437612	0.1518982	0.0036879
7.323834E+01	FCC_A1	0.8618375	0.1315561	0.0041141
	C			
2.676166E+01	BCC_A2	0.0006527		
7.323834E+01	FCC_A1	0.0024923		

Gibbs Energy = -1.5451696085E+08 J System Enthalpy = 8.6498901138E+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	:	1533.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1533.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.565400E+04	1.206546E-03	1.534605E+03	8.570000E+01
Cr		-9.028982E+04	8.386668E-04	2.634813E+02	1.370000E+01
Mn		-1.626246E+05	2.877093E-06	7.280928E+00	4.000000E-01
C		-7.771017E+04	2.250147E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
3.370513E+01	BCC_A2	0.8456537	0.1498992	0.0037301
6.629487E+01	FCC_A1	0.8627686	0.1304419	0.0041372
		C		
3.370513E+01	BCC_A2	0.0007170		
6.629487E+01	FCC_A1	0.0026523		

Gibbs Energy = -1.5771278664E+08 J System Enthalpy = 8.8005779489E+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	:	1553.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

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STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1553.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.737996E+04	1.151008E-03	1.534605E+03	8.570000E+01
Cr		-9.232756E+04	7.846417E-04	2.634813E+02	1.370000E+01
Mn		-1.652145E+05	2.774630E-06	7.280928E+00	4.000000E-01
C		-7.838234E+04	2.310482E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
4.066555E+01	BCC_A2	0.8474085	0.1480323	0.0037697
5.933445E+01	FCC_A1	0.8635737	0.1294389	0.0041579
		C		
4.066555E+01	BCC_A2	0.0007896		
5.933445E+01	FCC_A1	0.0028296		

Gibbs Energy = -1.6092840896E+08 J System Enthalpy = 8.9533552936E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
--------	-----------	--------	--------	-------	-------

NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1573.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
 TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1573.0000 K

Printed: Wednesday, September 23, 2009 12:34:22

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-8.911778E+04	1.098346E-03	1.534605E+03	8.570000E+01
Cr		-9.437310E+04	7.349026E-04	2.634813E+02	1.370000E+01
Mn		-1.678249E+05	2.674080E-06	7.280928E+00	4.000000E-01
C		-7.901853E+04	2.377368E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
4.757576E+01	BCC_A2	0.8490169	0.1463057	0.0038063
5.242424E+01	FCC_A1	0.8642448	0.1285550	0.0041758
		C		
4.757576E+01	BCC_A2	0.0008711		
5.242424E+01	FCC_A1	0.0030245		

Gibbs Energy = -1.6416383597E+08 J System Enthalpy = 9.1081302328E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
--------	-----------	-------------------

TEMPERATURE	:	1593.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

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

Temperature = 1593.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-9.086760E+04	1.048376E-03	1.534605E+03	8.570000E+01
Cr		-9.642518E+04	6.891088E-04	2.634813E+02	1.370000E+01
Mn		-1.704564E+05	2.575471E-06	7.280928E+00	4.000000E-01
C		-7.962529E+04	2.449876E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
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*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1633.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE	973.000 to 1773.00 by 20.0000

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

Temperature = 1633.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-9.440357E+04	9.558656E-04	1.534605E+03	8.570000E+01
Cr		-1.005453E+05	6.080614E-04	2.634813E+02	1.370000E+01
Mn		-1.757830E+05	2.384435E-06	7.280928E+00	4.000000E-01
C		-8.077481E+04	2.608121E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
6.753988E+01	BCC_A2	0.8529490	0.1419778	0.0038979
3.246012E+01	FCC_A1	0.8654289	0.1266428	0.0042125
		C		
6.753988E+01	BCC_A2	0.0011754		
3.246012E+01	FCC_A1	0.0037158		

Gibbs Energy = -1.7398887114E+08 J System Enthalpy = 9.5837188972E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT			
TEMPERATURE	:	1653.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

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

Temperature = 1653.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-9.618980E+04	9.130365E-04	1.534605E+03	8.570000E+01
Cr		-1.026120E+05	5.722063E-04	2.634813E+02	1.370000E+01
Mn		-1.784778E+05	2.292245E-06	7.280928E+00	4.000000E-01
C		-8.132792E+04	2.692218E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
7.385430E+01	BCC_A2	0.8539728	0.1408063	0.0039224
2.614570E+01	FCC_A1	0.8655510	0.1262482	0.0042192
		C		
7.385430E+01	BCC_A2	0.0012985		
2.614570E+01	FCC_A1	0.0039816		

Gibbs Energy = -1.7730340897E+08 J System Enthalpy = 9.7458663579E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1673.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			

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COMP. MASSES/kg : 85.70000 13.70000 0.4000000 0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE 973.000 to 1773.00 by 20.0000

*** 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
Fe		-9.798824E+04	8.723178E-04	1.534605E+03	8.570000E+01
Cr		-1.046825E+05	5.391003E-04	2.634813E+02	1.370000E+01
Mn		-1.811932E+05	2.202439E-06	7.280928E+00	4.000000E-01
C		-8.187212E+04	2.778700E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
7.998609E+01	BCC_A2	0.8548627	0.1397599	0.0039441
2.001391E+01	FCC_A1	0.8655417	0.1259701	0.0042233
		C		
7.998609E+01	BCC_A2	0.0014333		
2.001391E+01	FCC_A1	0.0042648		

Gibbs Energy = -1.8063767407E+08 J System Enthalpy = 9.9098124996E+07 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE : 1693.000
PRESSURE/Pa : 101325.0
VOLUME/m3 : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605 263.4813 7.280928 16.65182
SYSTEM MASS/kg : 100.0000
COMP. MASSES/kg : 85.70000 13.70000 0.4000000 0.2000000

STEPPED VARIABLE INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE 973.000 to 1773.00 by 20.0000

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

Temperature = 1693.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-9.979889E+04	8.335900E-04	1.534605E+03	8.570000E+01
Cr		-1.067565E+05	5.085011E-04	2.634813E+02	1.370000E+01
Mn		-1.839287E+05	2.115117E-06	7.280928E+00	4.000000E-01
C		-8.241053E+04	2.866997E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
8.594063E+01	BCC_A2	0.8556251	0.1388314	0.0039632
1.405937E+01	FCC_A1	0.8654041	0.1258053	0.0042251
		C		
8.594063E+01	BCC_A2	0.0015803		
1.405937E+01	FCC_A1	0.0045655		

Gibbs Energy = -1.8399164697E+08 J System Enthalpy = 1.0075583143E+08 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE	:	1713.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

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

Temperature = 1713.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-1.016218E+05	7.967409E-04	1.534605E+03	8.570000E+01
Cr		-1.088336E+05	4.801904E-04	2.634813E+02	1.370000E+01
Mn		-1.866840E+05	2.030359E-06	7.280928E+00	4.000000E-01
C		-8.294555E+04	2.956643E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

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Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
9.172820E+01	BCC_A2	0.8562659	0.1380144	0.0039797
8.271795E+00	FCC_A1	0.8651409	0.1257511	0.0042246
		C		
9.172820E+01	BCC_A2	0.0017400		
8.271795E+00	FCC_A1	0.0048834		

Gibbs Energy = -1.8736531276E+08 J System Enthalpy = 1.0243220934E+08 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	:	1733.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000
STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE				
TEMPERATURE		973.000	to	1773.00	by 20.0000

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

Temperature = 1733.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-1.034570E+05	7.616630E-04	1.534605E+03	8.570000E+01
Cr		-1.109133E+05	4.539717E-04	2.634813E+02	1.370000E+01
Mn		-1.894588E+05	1.948201E-06	7.280928E+00	4.000000E-01
C		-8.347902E+04	3.047253E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
9.736199E+01	BCC_A2	0.8567899	0.1373033	0.0039940
2.638012E+00	FCC_A1	0.8647536	0.1258057	0.0042219
		C		
9.736199E+01	BCC_A2	0.0019128		
2.638012E+00	FCC_A1	0.0052188		

Gibbs Energy = -1.9075866263E+08 J System Enthalpy = 1.0412781561E+08 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT
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TEMPERATURE      : 1753.000
PRESSURE/Pa      : 101325.0
VOLUME/m3        : undefined
SYSTEM AMOUNT/mol : undefined
COMP. AMOUNTS/mol : 1534.605      263.4813      7.280928      16.65182
SYSTEM MASS/kg   : 100.0000
COMP. MASSES/kg  : 85.70000      13.70000      0.4000000     0.2000000
    
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STEPPED VARIABLE      INITIAL, FINAL AND STEP VALUES OF VARIABLE
TEMPERATURE           973.000      to      1773.00      by      20.0000
    
```

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

Temperature = 1753.0000 K

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

Component	Ref.Phase	Chem.Pot.	Activity	Amount/mol	Mass/kg
Fe		-1.053046E+05	7.282651E-04	1.534605E+03	8.570000E+01
Cr		-1.129462E+05	4.311156E-04	2.634813E+02	1.370000E+01
Mn		-1.922615E+05	1.867556E-06	7.280928E+00	4.000000E-01
C		-8.476535E+04	2.980481E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	BCC_A2	0.8570000	0.1370000	0.0040000
		C		
1.000000E+02	BCC_A2	0.0020000		

Gibbs Energy = -1.9417137193E+08 J System Enthalpy = 1.0573484108E+08 J

*** PROBLEM settings ***

Changes only listed under components/phases/substances

NUMBER	COMPONENT	STATUS	AMOUNT	DELTA	REF.P
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NUMBER	PHASE	STATUS	MODEL
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NUMBER	SUBSTANCE	STATUS/CONSTRAINT			
TEMPERATURE	:	1773.000			
PRESSURE/Pa	:	101325.0			
VOLUME/m3	:	undefined			
SYSTEM AMOUNT/mol	:	undefined			
COMP. AMOUNTS/mol	:	1534.605	263.4813	7.280928	16.65182
SYSTEM MASS/kg	:	100.0000			
COMP. MASSES/kg	:	85.70000	13.70000	0.4000000	0.2000000

STEPPED VARIABLE	INITIAL, FINAL AND STEP VALUES OF VARIABLE			
TEMPERATURE	973.000	to	1773.00	by 20.0000

*** 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
Fe		-1.071623E+05	6.965540E-04	1.534605E+03	8.570000E+01
Cr		-1.149431E+05	4.108913E-04	2.634813E+02	1.370000E+01
Mn		-1.950845E+05	1.789489E-06	7.280928E+00	4.000000E-01
C		-8.674363E+04	2.782892E-03	1.665182E+01	2.000000E-01
Total				1.822019E+03	1.000000E+02

Mass/kg	Phase	Mass fraction of component within phase		
		Fe	Cr	Mn
1.000000E+02	BCC_A2	0.8570000	0.1370000	0.0040000
1.000000E+02	BCC_A2	0.0020000		

Gibbs Energy = -1.9760162972E+08 J System Enthalpy = 1.0725365562E+08 J