Summary

December 6, 2024

Contents

0.1 Loaded Graphs

0.1.1 g_{0}

$$N \equiv C - H$$

File: out/001_g_0_10300000

$$N \equiv CH$$

File: out/003_g_0_11310100

0.1.2 g_{1}

File: out/005_g_1_10300000

$$NH_3$$

File: out/007_g_1_11310100

0.1.3 g_{2}

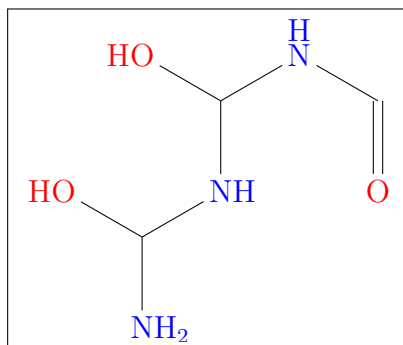File: out/009_g_2_10300000

$$H_2O$$

File: out/011_g_2_11310100

0.2 Product Graphs

0.2.1 p_{0,56}

File: out/013_g_1088_10300000

File: `out/015_g_1088_11310100`

0.3 Enumerated Flows

0.3.1 Solution 0

Overall Data

```
Objective value (non-integral): -0.103709
Vertex/Graph In Out G          logK      t_order
g_{0}       3  0   -5.507141  -3.000000 0
g_{2}       3  0   -5.068033  -3.000000 0
p_{0,13}    0  0   -21.240678 -4.019570 3
p_{0,15}    0  0   -10.625174 -9.000000 63
p_{0,1}     0  0   -10.610101 -3.000000 1
p_{0,56}    0  1   -31.869324 -9.000000 67
p_{0,5}     0  0   -16.158998 -3.000000 2
```

Filtered Graph

p_{0,56}

p_{0,13}

f 1

p_{0,15}

f 1

p_{0,1}

p_{0,5}

f 1

H_2O
g_2

f 1

f 2

f 3

N≡CH
g_0

f 3

File: `out/029_dg_0_11100_f_0_0_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14458.99666	-3.0	-14468.974015	0
g_2	3	0	-13306.118349	-3.0	-13316.095704	0
$p_{0,1}$	0	0	-27856.817054	-3.0	-27866.79441	1
$p_{0,5}$	0	0	-42425.44262	-3.0	-42435.419975	2
$p_{0,13}$	0	0	-55767.391129	-4.01957	-55780.759353	3
$p_{0,15}$	0	0	-27896.389963	-9.0	-27926.322028	63
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-84.892501	-84.892501
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-102.819361	-102.819361
36	$p_{0,1},$	$p_{0,15},$	1	-53.191998	-53.191998
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-31.334883	-31.334883
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	0.006113	0.006113
Sum					-272.2883442524324

$\Delta G = -35.71251238494293$

$\Delta E = -0.10370915316764666$

$|E| = 6$

$|U| = 5$

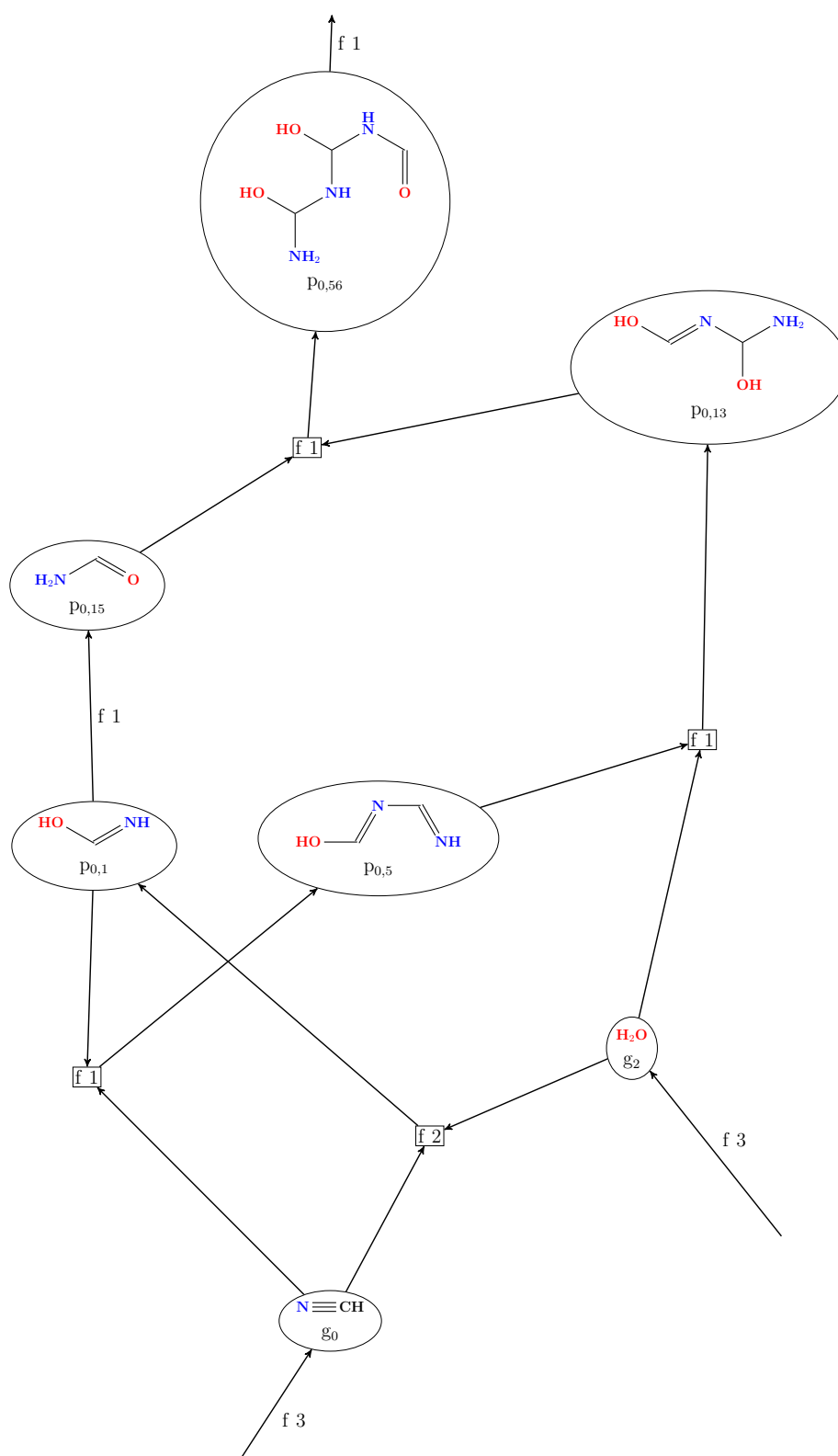## 0.3.2   Solution 1

Overall Data

```
Objective value (non-integral): -0.103709
Vertex/Graph In Out G          logK       t_order
g_{0}        3  0   -5.507152  -3.000000 0
g_{2}        3  0   -5.068043  -3.000000 0
p_{0,13}     0  0   -21.240678 -9.000000 3
p_{0,17}     0  0   -21.248844 -9.000000 65
p_{0,1}      0  0   -10.610101 -9.000000 1
p_{0,56}     0  1   -31.869260 -6.066265 67
p_{0,5}      0  0   -16.158998 -3.000000 2
```
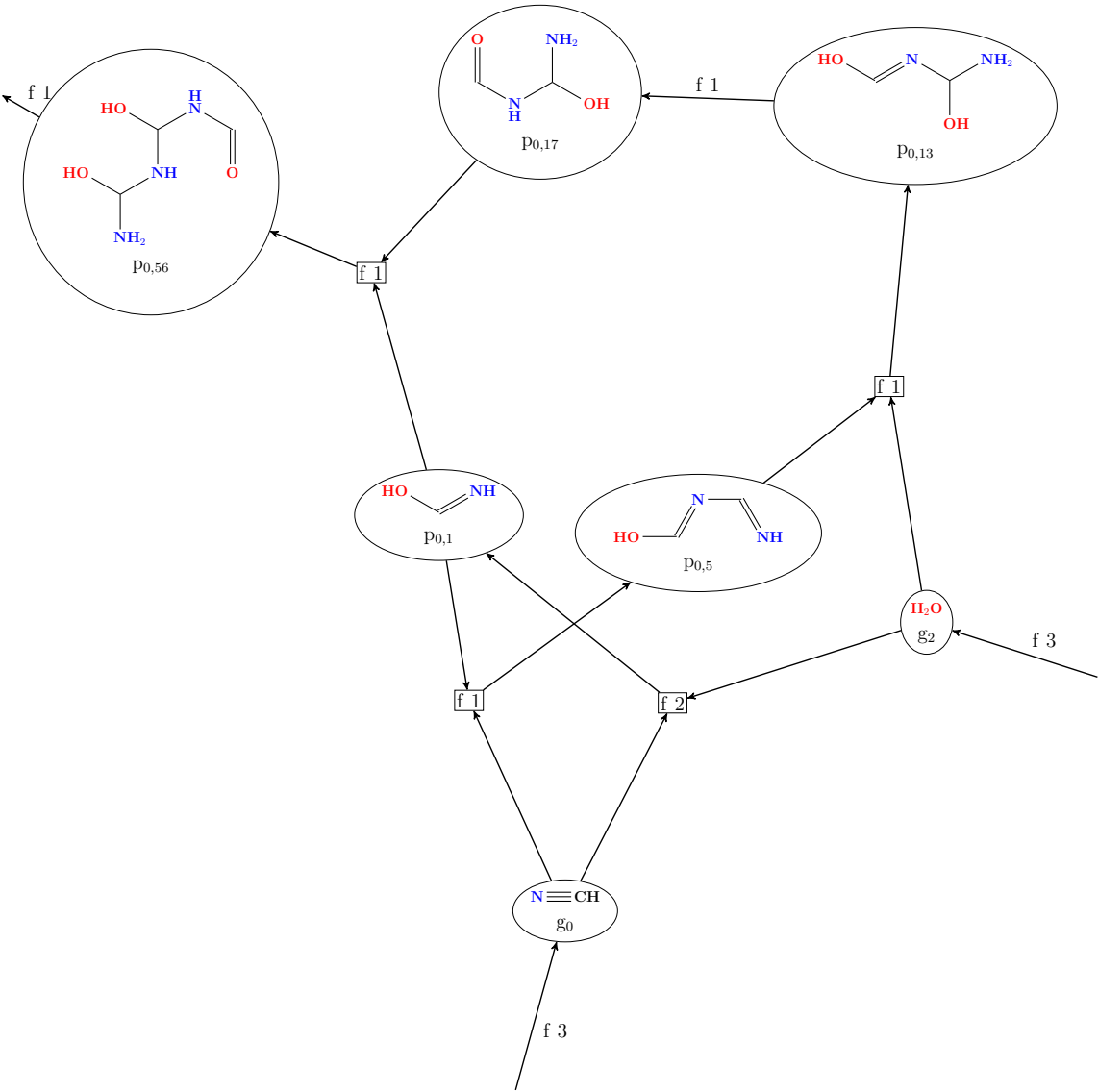
Filtered Graph

File: `out/040_dg_0_11100_f_0_1_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-3.0	-13316.122316	0
$p_{0,1}$	0	0	-27856.817054	-9.0	-27886.74912	1
$p_{0,5}$	0	0	-42425.44262	-3.0	-42435.419975	2
$p_{0,13}$	0	0	-55767.391129	-9.0	-55797.323194	3
$p_{0,17}$	0	0	-55788.832737	-9.0	-55818.764803	65
$p_{0,56}$	0	1	-83672.731446	-6.066265	-83692.90654	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-98.45606	-98.45606
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-89.171354	-89.171354
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-42.613092	-42.613092
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	0.006113	0.006113
250	$p_{0,13},$	$p_{0,17},$	1	-21.441608	-21.441608
Sum					-272.2883442524324

ΔG = -35.01320530496815
ΔE = -0.10370915316764666
|E| = 6
|U| = 5
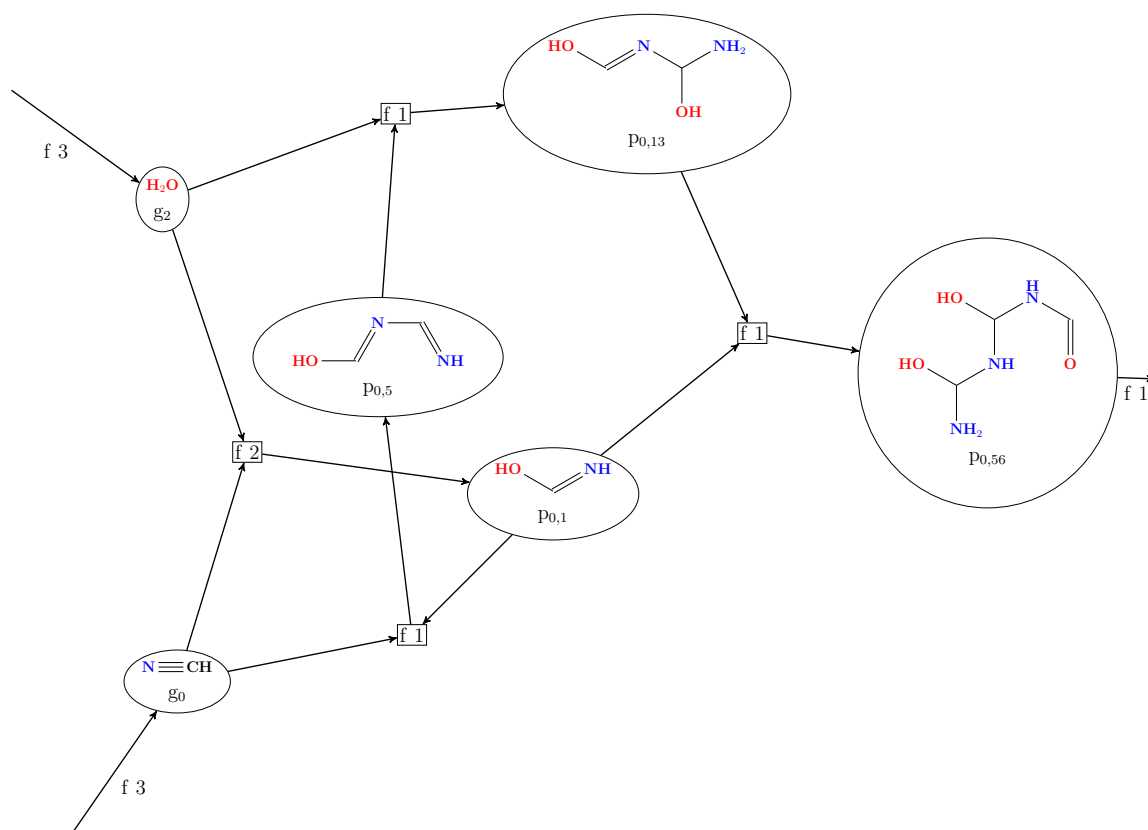
0.3.3 Solution 2

Overall Data

```
Objective value (non-integral): -0.103709
Vertex/Graph In Out G          logK      t_order
g_{0}       3  0   -5.507152  -3.000000 0
g_{2}       3  0   -5.068043  -9.000000 20
p_{0,13}    0  0   -21.240678 -9.000000 44
p_{0,1}     0  0   -10.610101 -3.000000 22
p_{0,56}    0  1   -31.869324 -9.000000 67
p_{0,5}     0  0   -16.158998 -3.000000 23
```

Filtered Graph

File: `out/049_dg_0_11100_f_0_2_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-9.0	-13336.077027	20
$p_{0,1}$	0	0	-27856.817054	-3.0	-27866.79441	22
$p_{0,5}$	0	0	-42425.44262	-3.0	-42435.419975	23
$p_{0,13}$	0	0	-55767.391129	-9.0	-55797.323194	44
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-71.217881	-71.217881
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-102.790443	-102.790443
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-28.994003	-28.994003
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-41.881064	-41.881064
Sum					-272.2883442524335

ΔG = -31.610126665161275
ΔE = -0.10370915316764706
|E| = 5
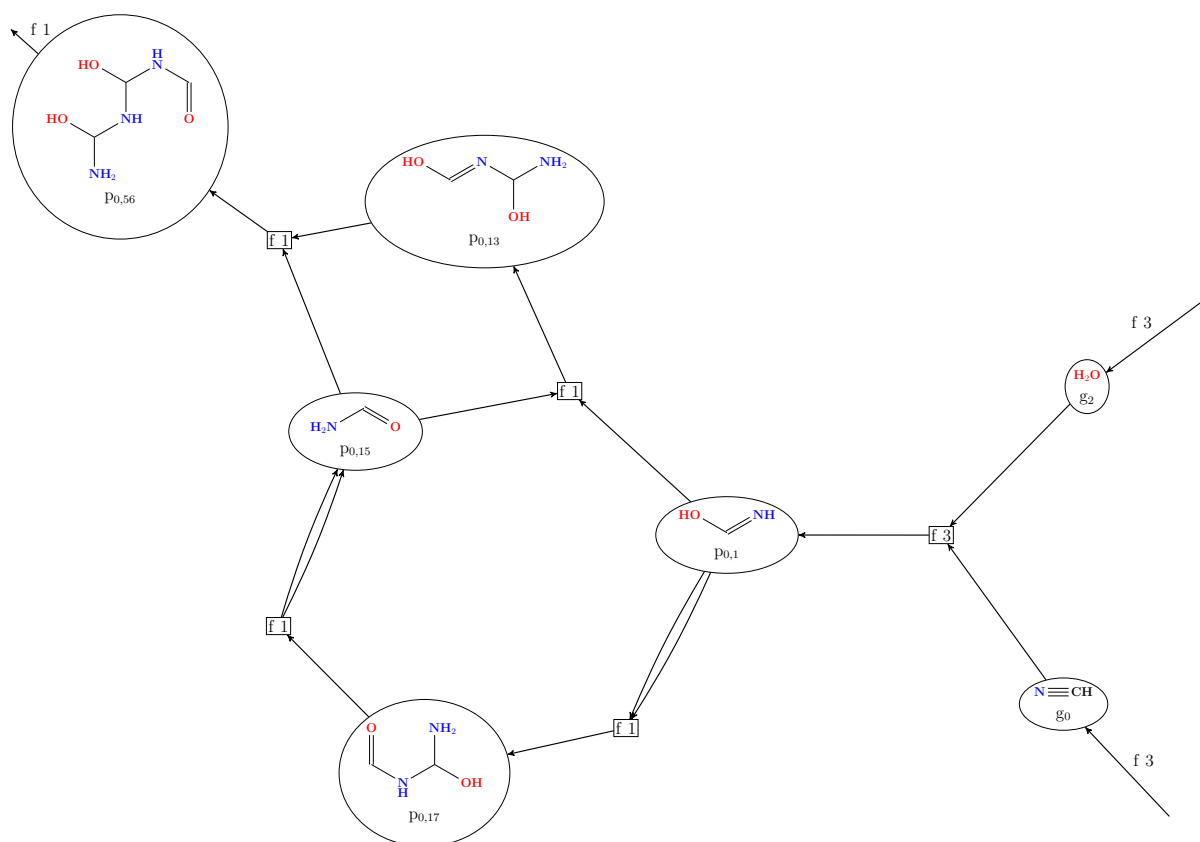|U| = 4

0.3.4 Solution 3

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK      t_order
g_{0}        3  0   -5.507152  -3.000000 0
g_{2}        3  0   -5.068043  -9.000000 0
p_{0,13}     0  0   -21.240635 -4.933113 34
p_{0,15}     0  0   -10.625174 -8.135594 32
p_{0,17}     0  0   -21.248887 -9.000000 31
p_{0,1}      0  0   -10.610101 -3.000000 1
p_{0,56}     0  1   -31.869324 -9.000000 67
```

Filtered Graph

File: `out/058_dg_0_11100_f_0_3_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-9.0	-13336.077027	0
$p_{0,1}$	0	0	-27856.817054	-3.0	-27866.79441	1
$p_{0,13}$	0	0	-55767.279594	-4.933113	-55783.686069	34
$p_{0,15}$	0	0	-27896.389963	-8.135594	-27923.447199	32
$p_{0,17}$	0	0	-55788.944315	-9.0	-55818.87638	31
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-71.217881	-71.217881
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-82.119751	-82.119751
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	0.006113	0.006113
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	0.006113	0.006113
237	$p_{0,17},$	$p_{0,15}, p_{0,15},$	1	-20.340104	-20.340104
Sum					-187.45155688948088

ΔG = -31.610126927711235
ΔE = -0.0713965273739742
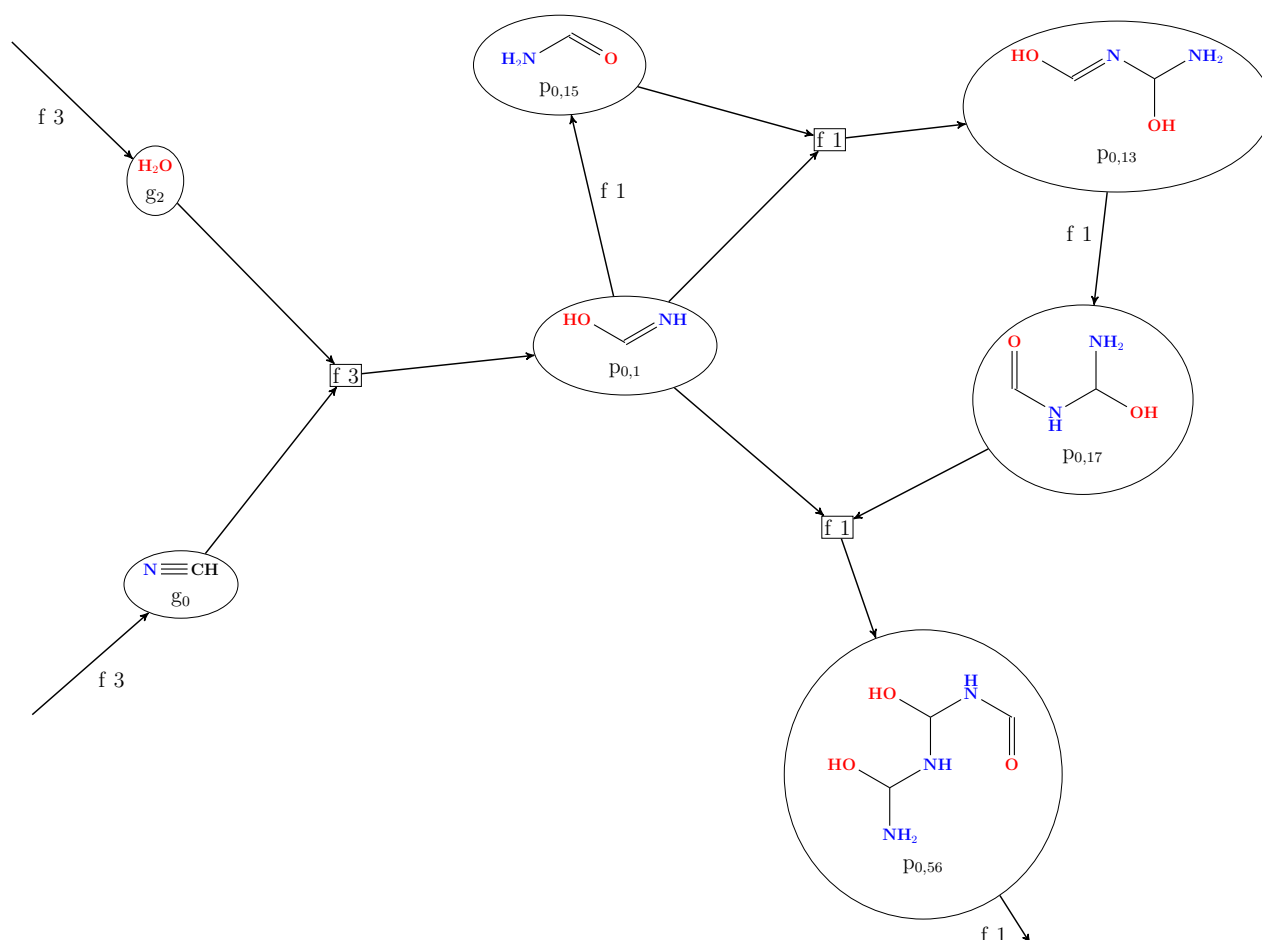|E| = 7
|U| = 5

0.3.5 Solution 4

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK      t_order
g_{0}       3   0  -5.507152  -3.000000 0
g_{2}       3   0  -5.068043  -3.000000 0
p_{0,13}    0   0  -21.240635 -3.000000 4
p_{0,15}    0   0  -10.625195 -3.000000 2
p_{0,17}    0   0  -21.248844 -9.000000 5
p_{0,1}     0   0  -10.610080 -3.000000 1
p_{0,56}    0   1  -31.869324 -9.000000 67
```

Filtered Graph

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-3.0	-13316.122316	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	1
$p_{0,13}$	0	0	-55767.279594	-3.0	-55777.256949	4
$p_{0,15}$	0	0	-27896.445756	-3.0	-27906.423111	2
$p_{0,17}$	0	0	-55788.832737	-9.0	-55818.764803	5
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-84.781257	-84.781257
36	$p_{0,1},$	$p_{0,15},$	1	-39.684415	-39.684415
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	-7.262953	-7.262953
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-20.495169	-20.495169
250	$p_{0,13},$	$p_{0,17},$	1	-35.172233	-35.172233
Sum					-187.45155688947875

$\Delta G = $ -35.695853064630505

$\Delta E = $ -0.07139652737739662

$|E| = 7$
$|U| = 5$

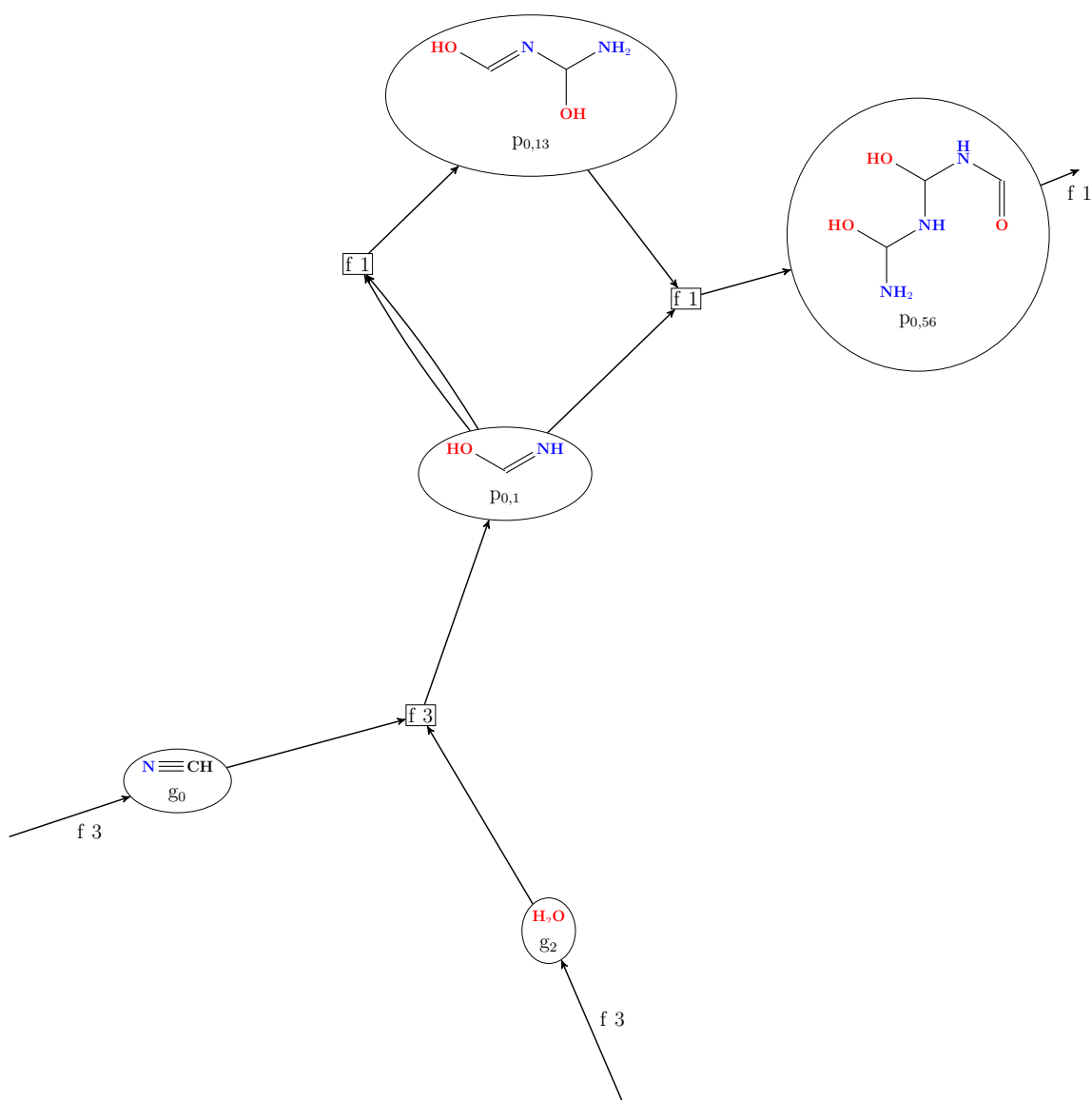## 0.3.6 Solution 5

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK      t_order
g_{0}       3   0  -5.507152  -3.000000 0
g_{2}       3   0  -5.068043  -9.000000 0
p_{0,13}    0   0  -21.240635 -3.000000 3
p_{0,1}     0   0  -10.610080 -3.000000 1
p_{0,56}    0   1  -31.869324 -9.000000 67
```

Filtered Graph

File: `out/076_dg_0_11100_f_0_5_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-9.0	-13336.077027	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	1
$p_{0,13}$	0	0	-55767.279594	-3.0	-55777.256949	3
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-71.162167	-71.162167
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-46.947368	-46.947368
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-55.667402	-55.667402
Sum					-187.45155688947875

ΔG = -31.610126927711235
ΔE = -0.07139652737739662
$|E| = 5$
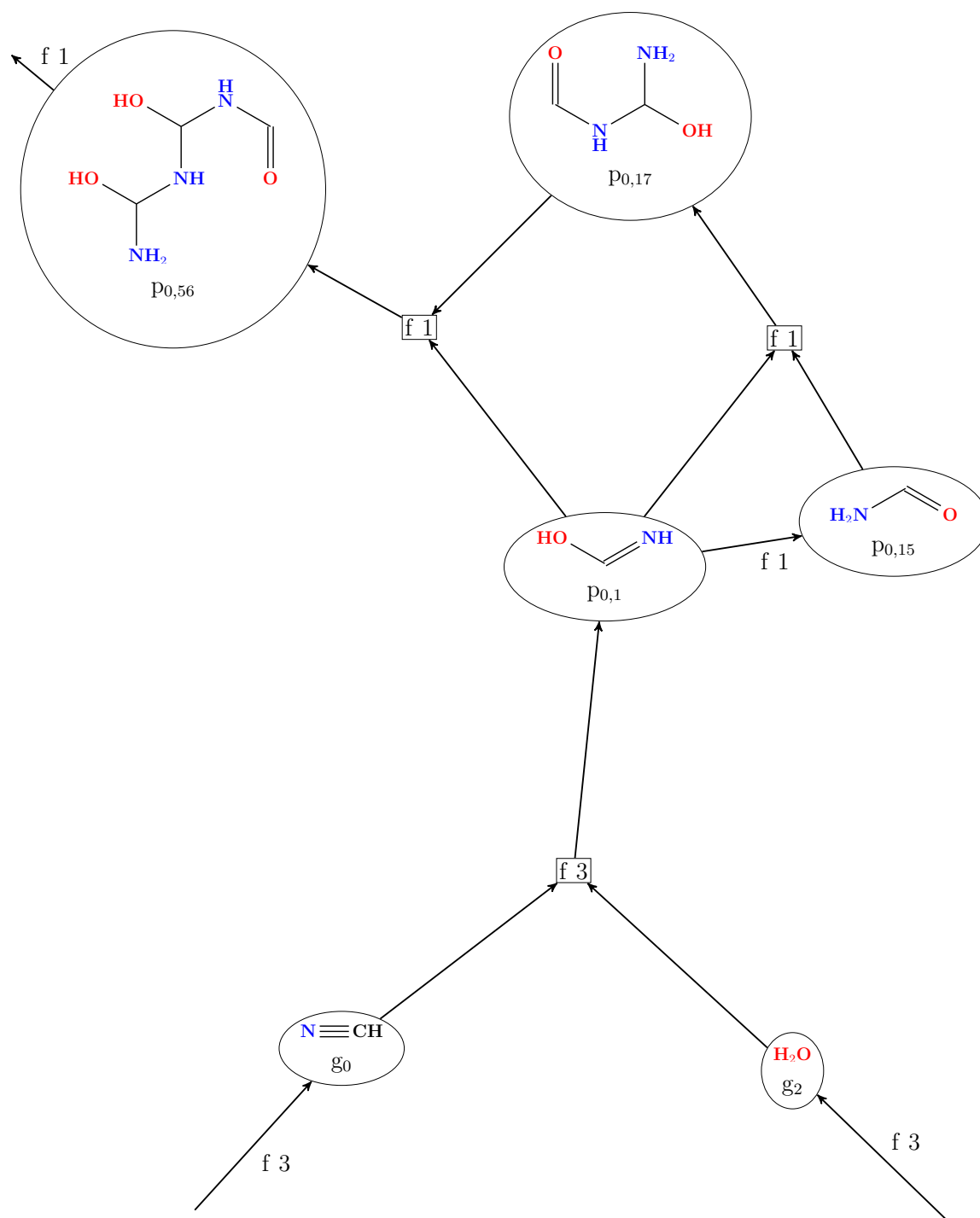$|U| = 3$

0.3.7 Solution 6

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK       t_order
g_{0}        3  0   -5.507152  -3.000000 0
g_{2}        3  0   -5.068043  -3.000000 0
p_{0,15}     0  0   -10.625174 -9.000000 63
p_{0,17}     0  0   -21.248844 -3.000000 65
p_{0,1}      0  0   -10.610080 -3.000000 1
p_{0,56}     0  1   -31.869324 -9.000000 67
```

Filtered Graph

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-3.0	-13316.122316	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	1
$p_{0,15}$	0	0	-27896.389963	-9.0	-27926.322028	63
$p_{0,17}$	0	0	-55788.832737	-3.0	-55798.810092	65
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-84.781257	-84.781257
36	$p_{0,1},$	$p_{0,15},$	1	-53.247712	-53.247712
183	$p_{0,1}, p_{0,15},$	$p_{0,17},$	1	-15.252799	-15.252799
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-34.114259	-34.114259
Sum					-187.4515568894777

ΔG = -35.69585358973043
ΔE = -0.07139652737739621
|E| = 6
|U| = 4
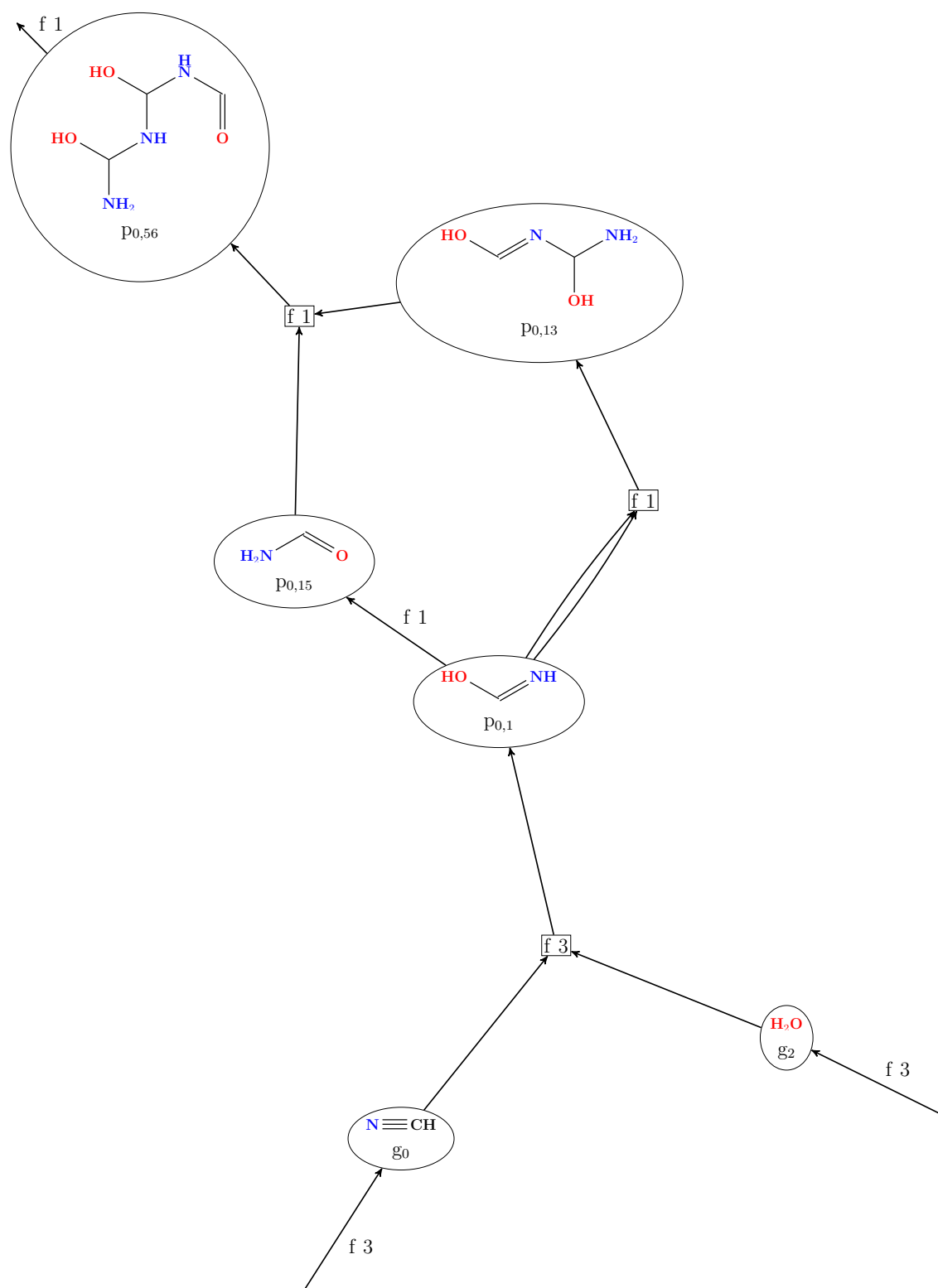
0.3.8   Solution 7

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK       t_order
g_{0}         3   0   -5.507152  -3.000000 0
g_{2}         3   0   -5.068043  -3.000000 20
p_{0,13}      0   0   -21.240678 -9.000000 43
p_{0,15}      0   0   -10.625195 -3.000000 23
p_{0,1}       0   0   -10.610101 -3.000000 21
p_{0,56}      0   1   -31.869324 -9.000000 67
```

Filtered Graph

p₀,₅₆

HO NH
HO NH
NH₂
O

f 1

HO N NH₂
OH
p₀,₁₃

f 1

H₂N O
p₀,₁₅

f 1

f 1

HO NH
p₀,₁

f 3

N≡CH
g₀

H₂O
g₂

f 3

f 3

File: `out/094_dg_0_11100_f_0_7_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-3.0	-13316.122316	20
$p_{0,1}$	0	0	-27856.817054	-3.0	-27866.79441	21
$p_{0,13}$	0	0	-55767.391129	-9.0	-55797.323194	43
$p_{0,15}$	0	0	-27896.445756	-3.0	-27906.423111	23
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-84.836971	-84.836971
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-60.566565	-60.566565
36	$p_{0,1},$	$p_{0,15},$	1	-39.628701	-39.628701
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	-2.252362	-2.252362
Sum					-187.4515568894777

$\Delta G = $ -35.695853327180465
$\Delta E = $ -0.07139652737739621
$|\text{E}| = 6$
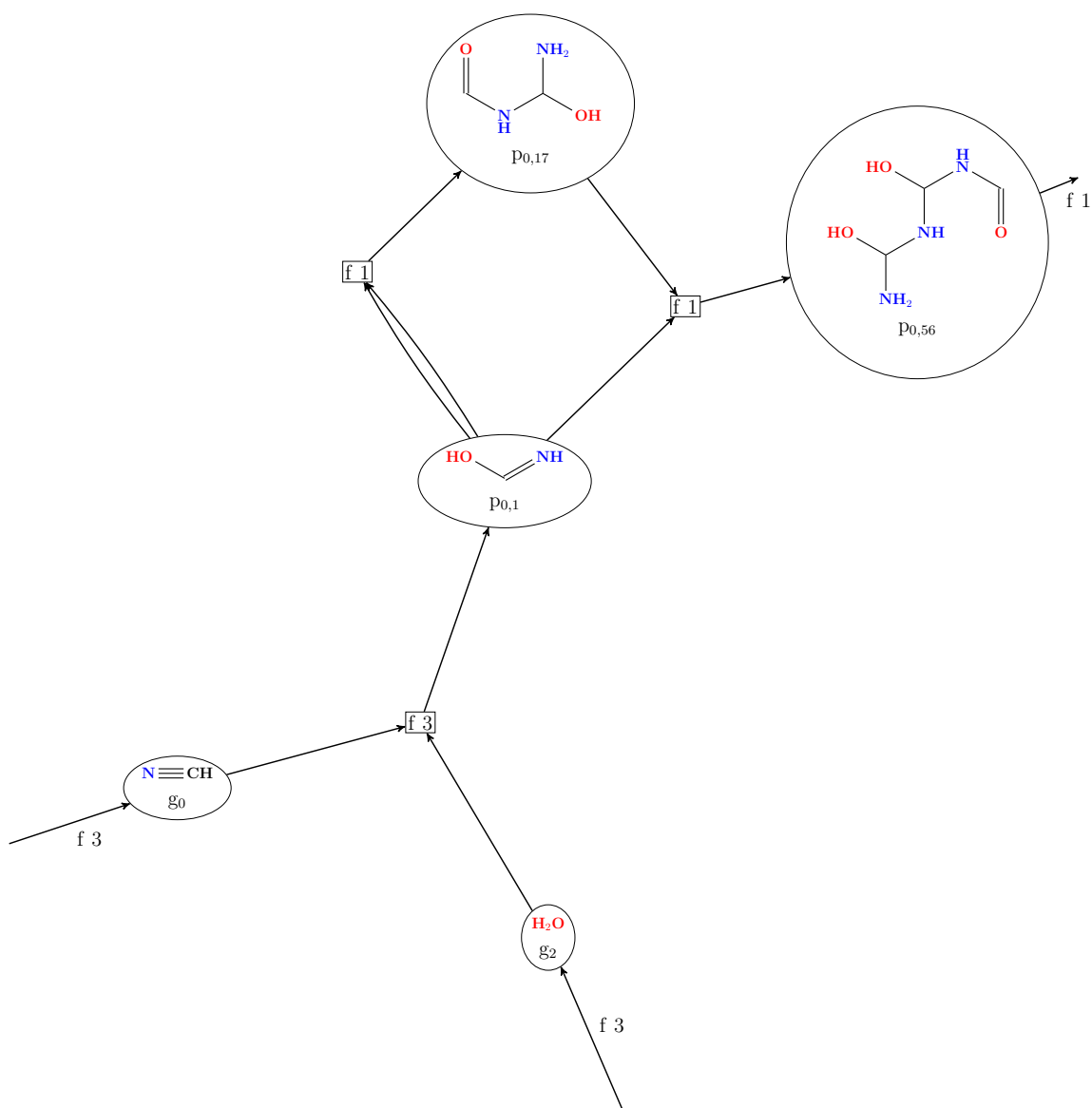$|\text{U}| = 4$

0.3.9 Solution 8

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK      t_order
g_{0}        3  0   -5.507152  -9.000000 0
g_{2}        3  0   -5.068043  -9.000000 0
p_{0,17}     0  0   -21.248844 -3.000000 45
p_{0,1}      0  0   -10.610080 -3.000000 21
p_{0,56}     0  1   -31.869324 -9.000000 67
```

Filtered Graph

File: out/103_dg_0_11100_f_0_8_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-9.0	-14488.957643	0
g_2	3	0	-13306.144961	-9.0	-13336.077027	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	21
$p_{0,17}$	0	0	-55788.832737	-3.0	-55798.810092	45
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-57.543078	-57.543078
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-68.500511	-68.500511
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-34.114259	-34.114259
Sum					-187.45155688947875

ΔG = -27.52439947804215

ΔE = -0.07139652737739662

|E| = 5
|U| = 3

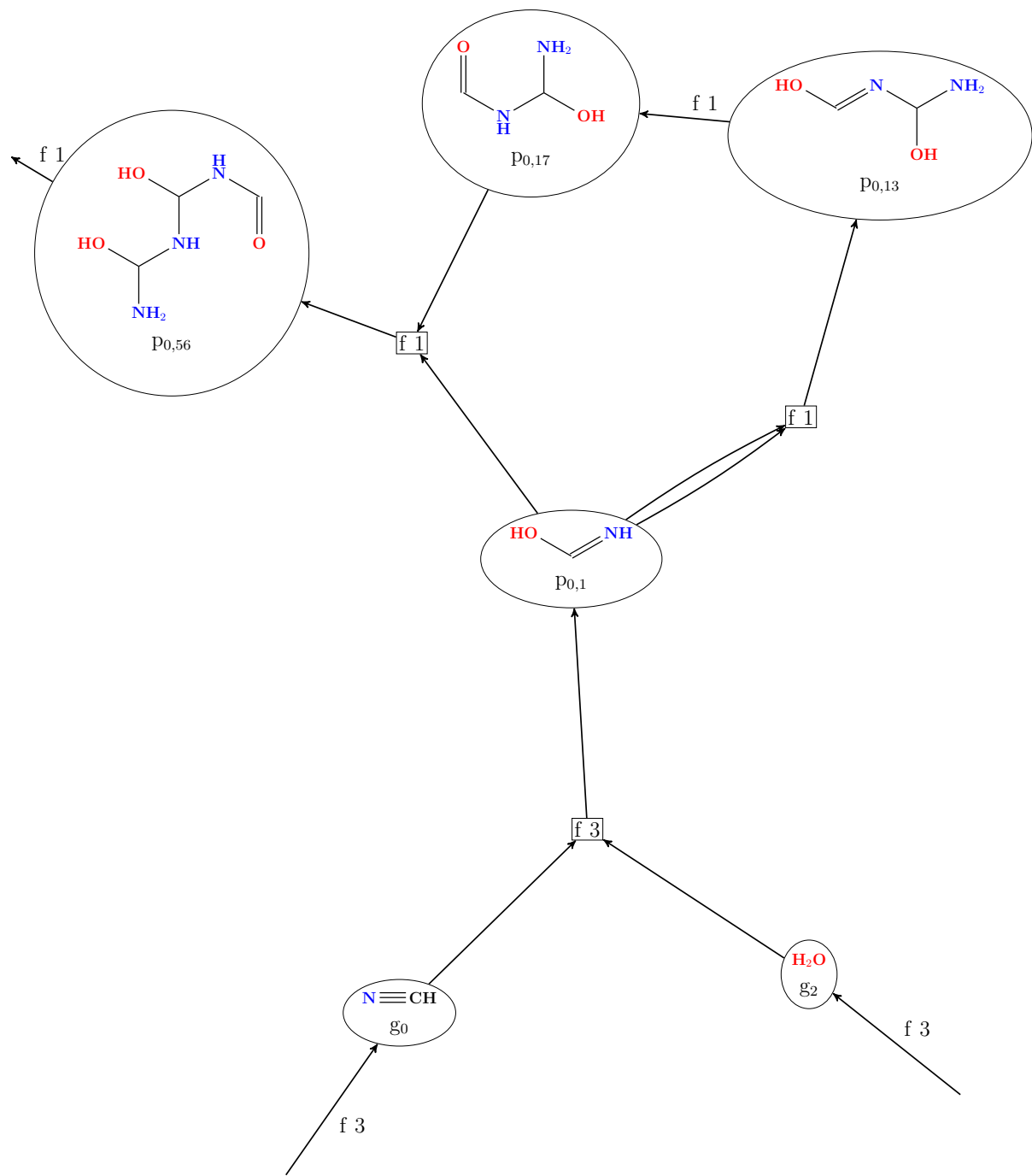## 0.3.10   Solution 9

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G            logK       t_order
g_{0}         3  0   -5.507141  -3.000000 0
g_{2}         3  0   -5.068033  -3.000000 0
p_{0,13}      0  0   -21.240635 -3.000000 64
p_{0,17}      0  0   -21.248844 -3.000000 65
p_{0,1}       0  0   -10.610080 -3.000000 1
p_{0,56}      0  1   -31.869324 -9.000000 67
```

Filtered Graph

File: `out/112_dg_0_11100_f_0_9_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14458.99666	-3.0	-14468.974015	0
g_2	3	0	-13306.118349	-3.0	-13316.095704	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	1
$p_{0,13}$	0	0	-55767.279594	-3.0	-55777.256949	64
$p_{0,17}$	0	0	-55788.832737	-3.0	-55798.810092	65
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-84.836787	-84.836787
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-46.947368	-46.947368
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-34.114259	-34.114259
250	$p_{0,13},$	$p_{0,17},$	1	-21.553143	-21.553143
Sum					-187.45155688947557

ΔG = -35.71251238494293
ΔE = -0.0713965273773954
|E| = 6
|U| = 4

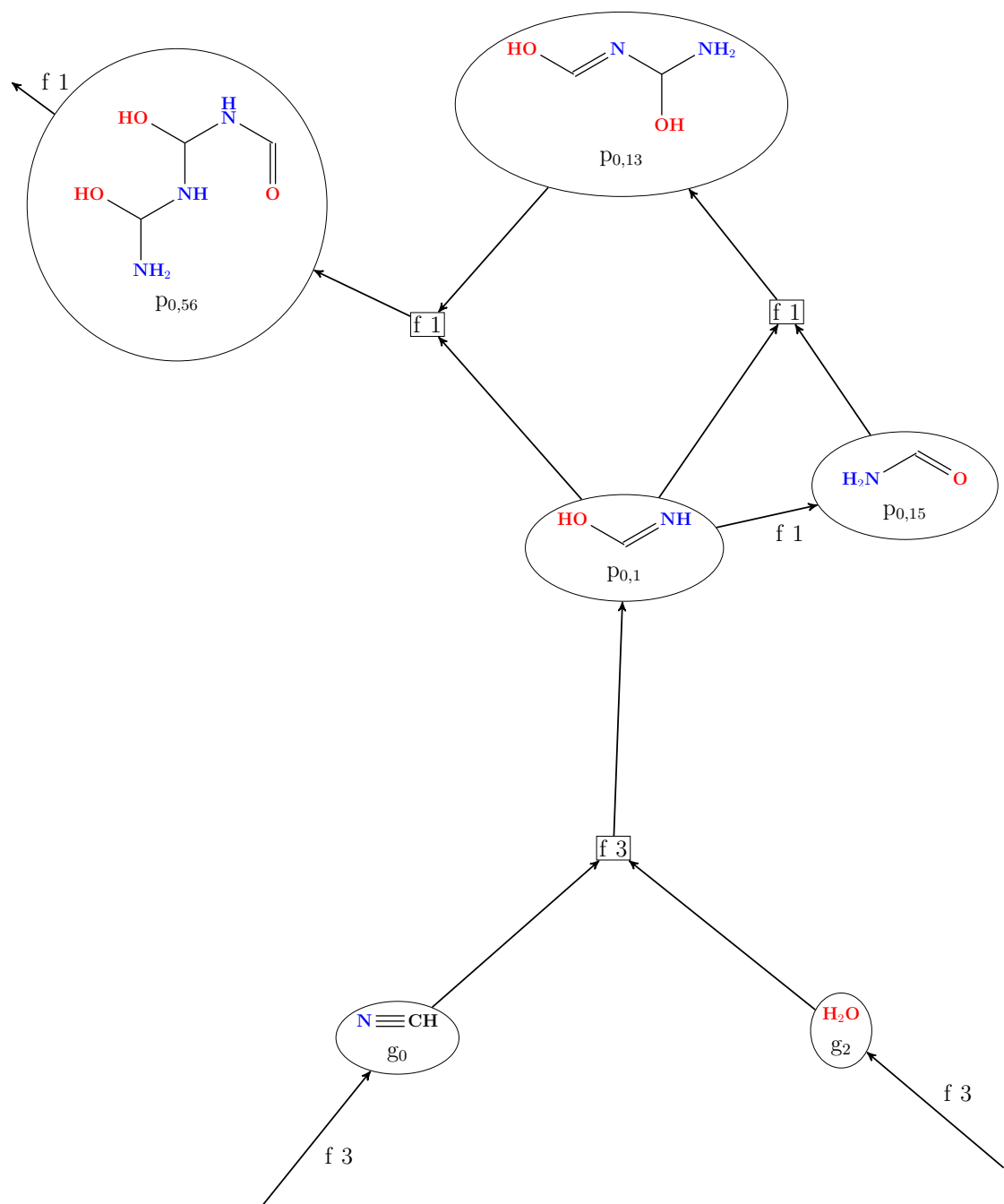## 0.3.11   Solution 10

Overall Data

```
Objective value (non-integral): -0.0713965
Vertex/Graph In Out G          logK       t_order
g_{0}        3  0   -5.507152  -3.000000 0
g_{2}        3  0   -5.068043  -9.000000 0
p_{0,13}     0  0   -21.240678 -3.000000 65
p_{0,15}     0  0   -10.625174 -6.251618 33
p_{0,1}      0  0   -10.610101 -3.000000 1
p_{0,56}     0  1   -31.869260 -3.000000 67
```

Filtered Graph

File: `out/121_dg_0_11100_f_0_10_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-9.0	-13336.077027	0
$p_{0,1}$	0	0	-27856.817054	-3.0	-27866.79441	1
$p_{0,13}$	0	0	-55767.391129	-3.0	-55777.368484	65
$p_{0,15}$	0	0	-27896.389963	-6.251618	-27917.181501	33
$p_{0,56}$	0	1	-83672.731446	-3.0	-83682.708802	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-71.217881	-71.217881
36	$p_{0,1},$	$p_{0,15},$	1	-46.953588	-46.953588
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	0.006113	0.006113
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-41.713718	-41.713718
Sum					-187.45155688947517

ΔG = -30.231483368219422
ΔE = -0.07139652737739524
$|\text{E}| = 6$
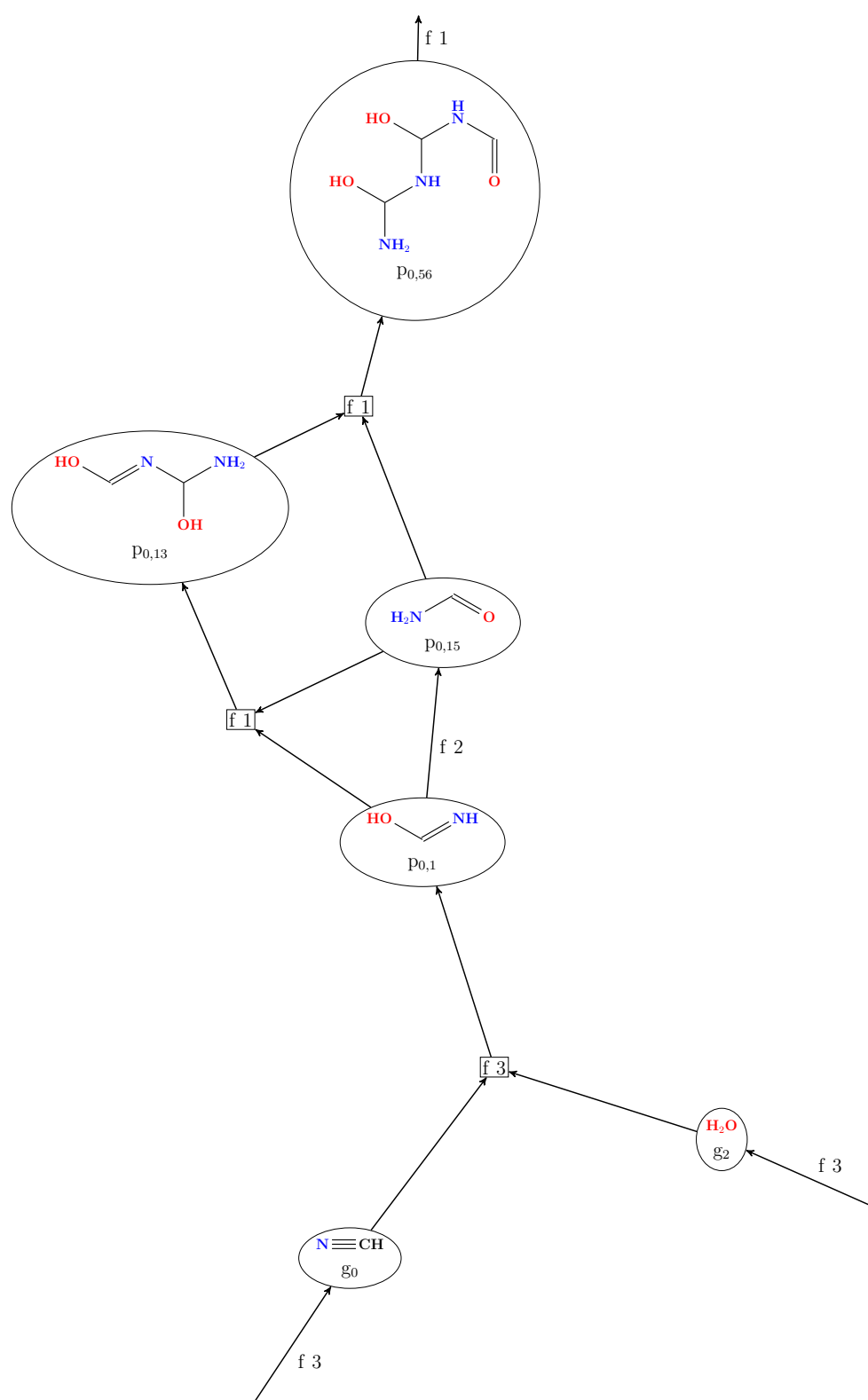$|\text{U}| = 4$

0.3.12   Solution 11

Overall Data

```
Objective value (non-integral): -0.0563028
Vertex/Graph In Out G          logK       t_order
g_{0}       3  0   -5.507152  -3.000000  0
g_{2}       3  0   -5.068043  -3.000000  0
p_{0,13}    0  0   -21.240678 -9.000000  44
p_{0,15}    0  0   -10.625174 -3.000000  22
p_{0,1}     0  0   -10.610080 -3.000000  21
p_{0,56}    0  1   -31.869324 -9.000000  67
```

Filtered Graph

File: `out/130_dg_0_11100_f_0_11_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.144961	-3.0	-13316.122316	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	21
$p_{0,13}$	0	0	-55767.391129	-9.0	-55797.323194	44
$p_{0,15}$	0	0	-27896.389963	-3.0	-27906.367318	22
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-84.781257	-84.781257
36	$p_{0,1},$	$p_{0,15},$	2	-39.628622	-39.628622
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	-2.308155	-2.308155
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	-21.04937	-21.04937
Sum					-147.82293478568474

ΔG = -35.695853327180465
ΔE = -0.0563027823591559
|E| = 7
|U| = 4
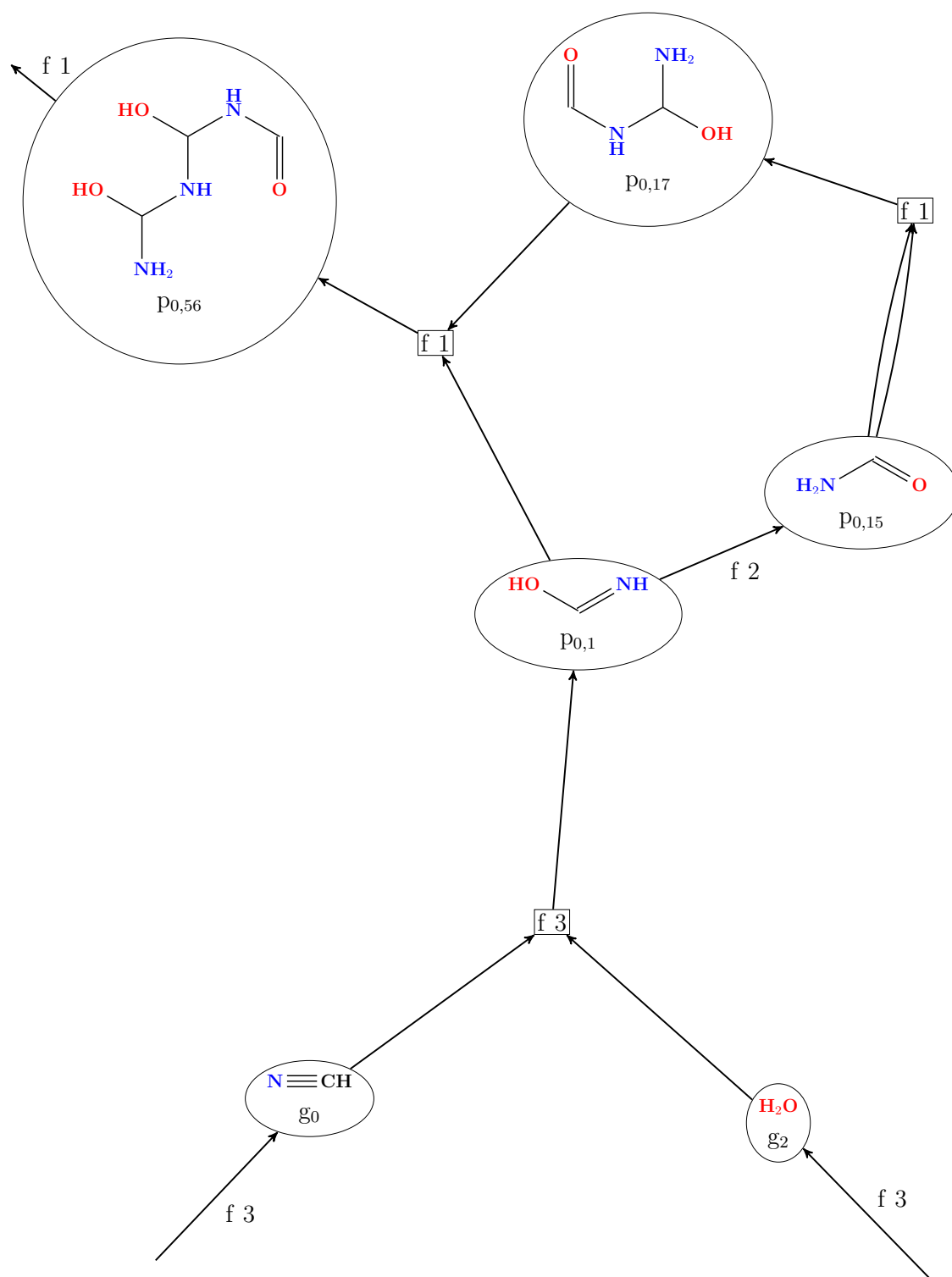
0.3.13 Solution 12

Overall Data

```
Objective value (non-integral): -0.0563028
Vertex/Graph In Out G         logK       t_order
g_{0}        3  0   -5.507152  -3.000000 0
g_{2}        3  0   -5.068033  -9.000000 0
p_{0,15}     0  0   -10.625174 -3.000000 21
p_{0,17}     0  0   -21.248844 -7.738966 45
p_{0,1}      0  0   -10.610080 -3.000000 1
p_{0,56}     0  1   -31.869324 -9.000000 67
```

Filtered Graph

File: `out/139_dg_0_11100_f_0_12_filt`

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-3.0	-14469.002933	0
g_2	3	0	-13306.118349	-9.0	-13336.050414	0
$p_{0,1}$	0	0	-27856.761341	-3.0	-27866.738696	1
$p_{0,15}$	0	0	-27896.389963	-3.0	-27906.367318	21
$p_{0,17}$	0	0	-55788.832737	-7.738966	-55814.570874	45
$p_{0,56}$	0	1	-83672.898792	-9.0	-83702.830857	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\overline{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-71.18878	-71.18878
36	$p_{0,1},$	$p_{0,15},$	2	-39.628622	-39.628622
180	$p_{0,15}, p_{0,15},$	$p_{0,17},$	1	0.0	0.0
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-23.357525	-23.357525
Sum					-147.82293478568366

ΔG = -31.618110547014965
ΔE = -0.05630278235915549
|E| = 7
|U| = 4