

Summary

December 7, 2024

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0.1 Loaded Graphs

0.1.1 g_{0}



File: out/001_g_0_10300000



File: out/003_g_0_11310100

0.1.2 g_{1}



File: out/005_g_1_10300000



File: out/007_g_1_11310100

0.1.3 g_{2}



File: out/009_g_2_10300000



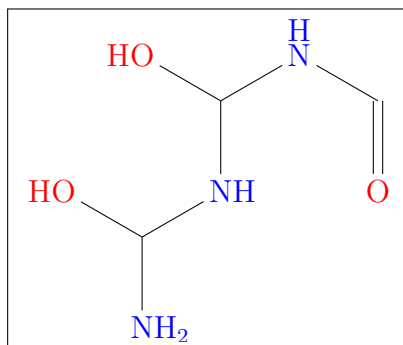
File: out/011_g_2_11310100

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

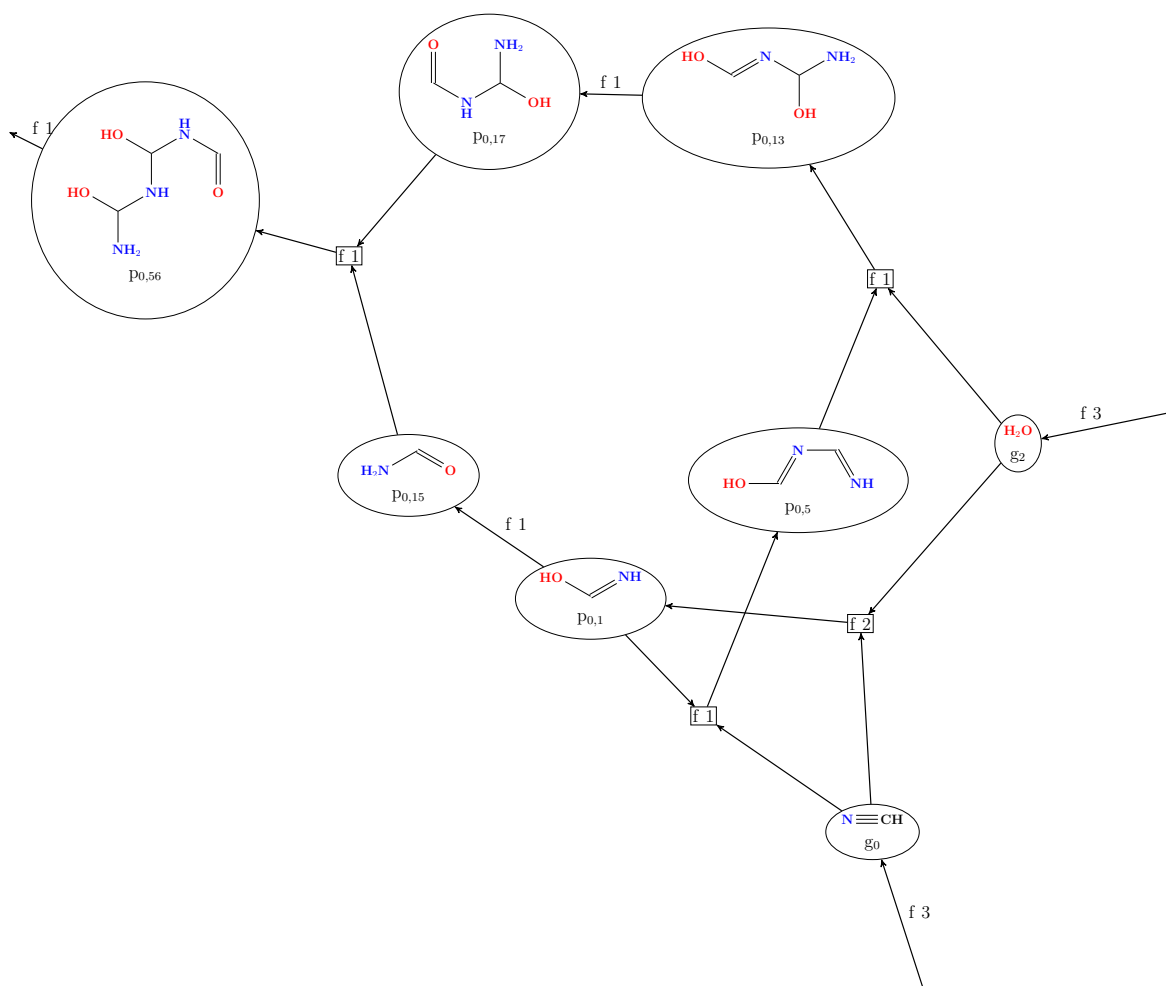
0.3.1 Solution 0

Overall Data

Objective value (non-integral): -0.12189

Vertex/Graph	In	Out	G	logK	t_order
g_{0}	3	0	-5.507152	1.000000	0
g_{2}	3	0	-5.068043	1.000000	0
p_{0,13}	0	0	-21.240678	-5.951710	3
p_{0,15}	0	0	-10.625174	-2.938239	2
p_{0,17}	0	0	-21.248887	1.000000	4
p_{0,1}	0	0	-10.610101	1.000000	1
p_{0,56}	0	1	-31.869260	-6.000000	67
p_{0,5}	0	0	-16.158998	-6.000000	2

Filtered Graph



File: out/033_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	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,5}$	0	0	-42425.44262	-6.0	-42445.397331	2
$p_{0,13}$	0	0	-55767.391129	-5.95171	-55787.185236	3
$p_{0,15}$	0	0	-27896.389963	-2.938239	-27906.161913	2
$p_{0,17}$	0	0	-55788.944315	1.0	-55785.61853	4
$p_{0,56}$	0	1	-83672.731446	-6.0	-83692.686157	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-94.74781	-94.74781
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-134.410345	-134.410345
36	$p_{0,1},$	$p_{0,15},$	1	-51.786547	-51.786547
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-38.755079	-38.755079
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.006113	0.006113
250	$p_{0,13},$	$p_{0,17},$	1	0.006113	0.006113
Sum					-320.02167414324634

$\Delta G = -41.443535701238524$
 $\Delta E = -0.12188981835344265$
 $|E| = 7$
 $|U| = 6$

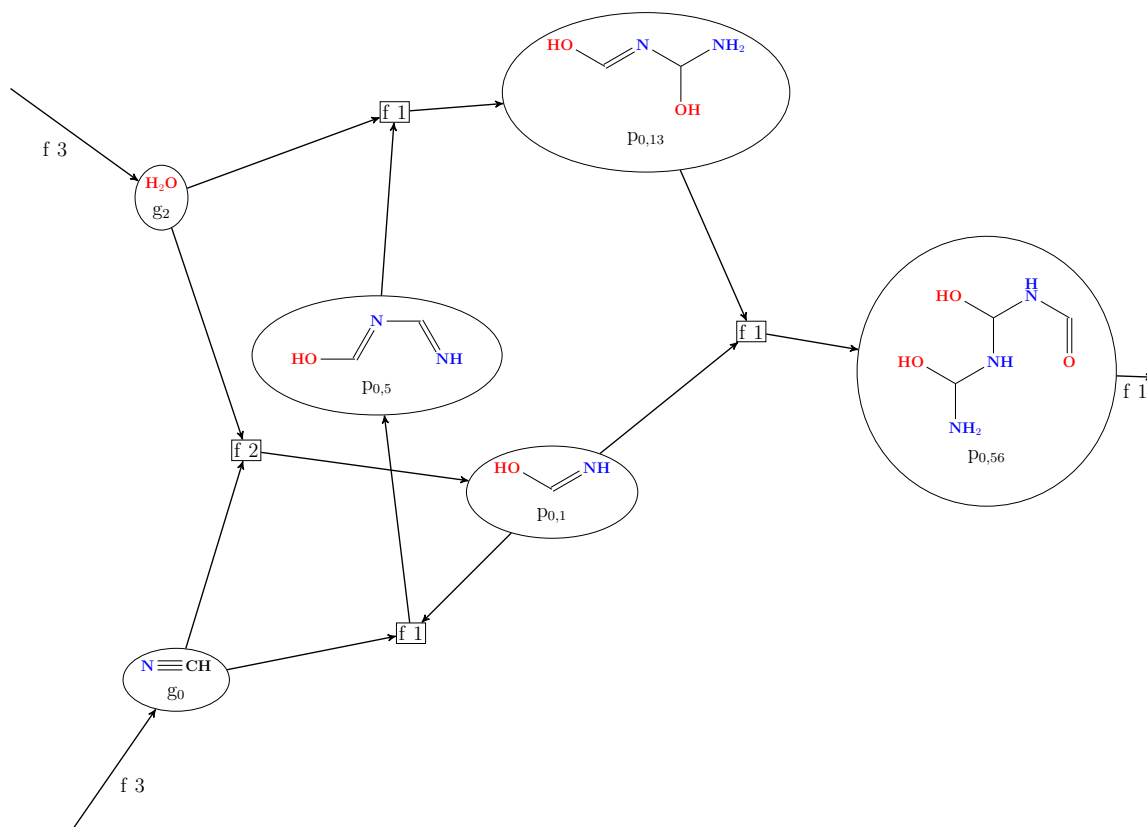
0.3.2 Solution 1

Overall Data

Objective value (non-integral): -0.12189

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	1.000000	45
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	21
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67
$p_{\{0,5\}}$	0	0	-16.158998	1.000000	22

Filtered Graph



File: out/042_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	21
$p_{0,5}$	0	0	-42425.44262	1.0	-42422.116835	22
$p_{0,13}$	0	0	-55767.391129	1.0	-55764.065344	45
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-94.74781	-94.74781
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-112.701283	-112.701283
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-38.904842	-38.904842
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-73.500965	-73.500965
Sum					-320.0216741432485

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.12188981835344345$$

$$|E| = 5$$

$$|U| = 4$$

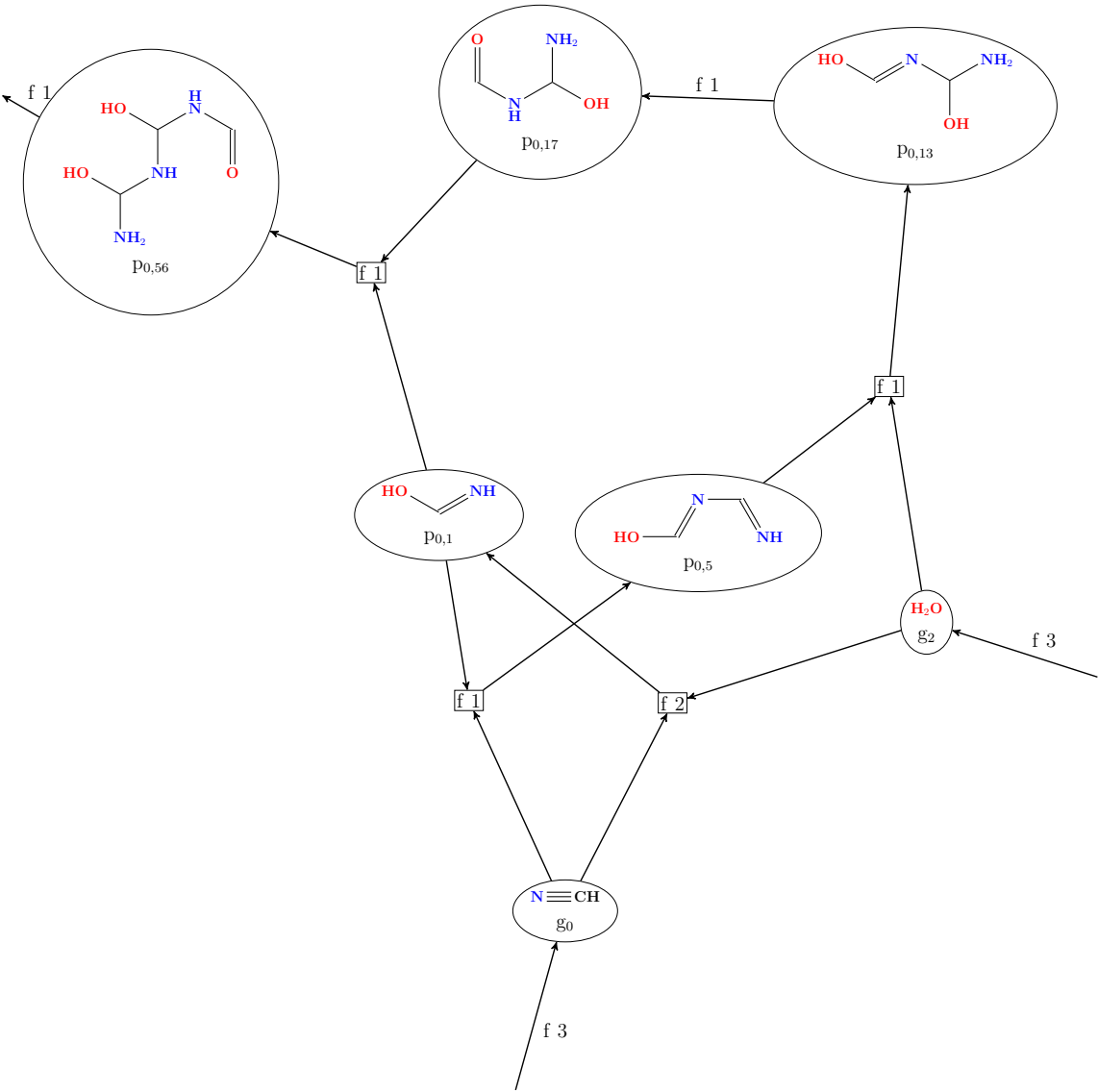
0.3.3 Solution 2

Overall Data

Objective value (non-integral): -0.12189

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-5.951710	43
$p_{\{0,17\}}$	0	0	-21.248887	1.000000	45
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67
$p_{\{0,5\}}$	0	0	-16.158998	1.000000	2

Filtered Graph



File: out/051_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,5}$	0	0	-42425.44262	1.0	-42422.116835	2
$p_{0,13}$	0	0	-55767.391129	-5.95171	-55787.185236	43
$p_{0,17}$	0	0	-55788.944315	1.0	-55785.61853	45
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-94.74781	-94.74781
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-112.701283	-112.701283
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-60.464141	-60.464141
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-51.947779	-51.947779
250	$p_{0,13},$	$p_{0,17},$	1	0.006113	0.006113
Sum					-320.0216741432451

$$\Delta G = -41.4602703733906$$

$$\Delta E = -0.12188981835344216$$

$$|E| = 6$$

$$|U| = 5$$

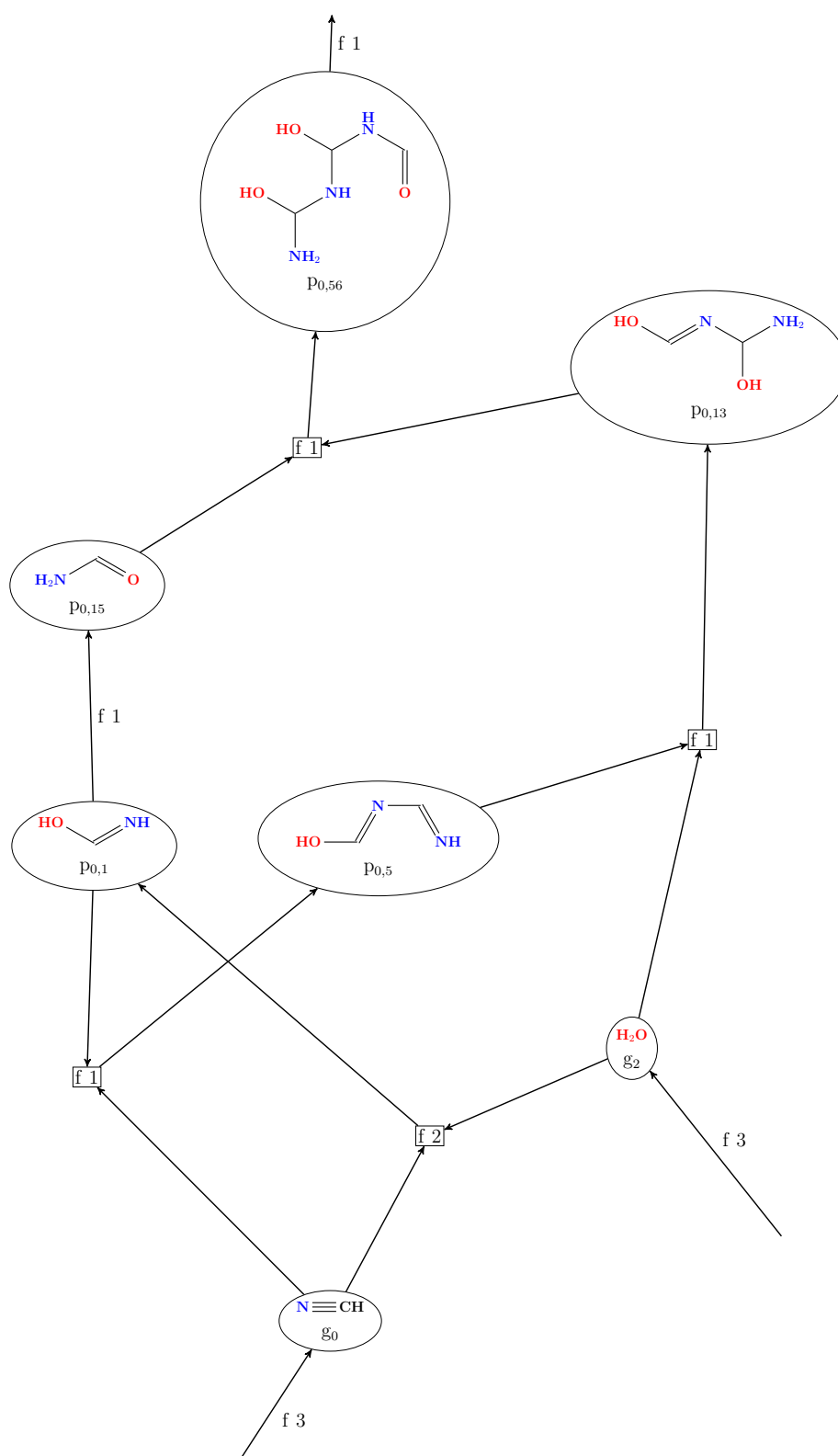
0.3.4 Solution 3

Overall Data

Objective value (non-integral): -0.12189

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	3
$p_{\{0,15\}}$	0	0	-10.625195	1.000000	2
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67
$p_{\{0,5\}}$	0	0	-16.158998	1.000000	2

Filtered Graph



File: out/060_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,5}$	0	0	-42425.44262	1.0	-42422.116835	2
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	3
$p_{0,15}$	0	0	-27896.445756	1.0	-27893.119971	2
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	2	-73.038748	-73.038748
14	$g_0, p_{0,1},$	$p_{0,5},$	1	-112.701283	-112.701283
36	$p_{0,1},$	$p_{0,15},$	1	-39.628701	-39.628701
123	$g_2, p_{0,5},$	$p_{0,13},$	1	-38.904842	-38.904842
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	-12.163202	-12.163202
Sum	-320.02167414324043				

$$\Delta G = -34.947551273333424$$

$$\Delta E = -0.1218898183534404$$

$$|E| = 6$$

$$|U| = 5$$

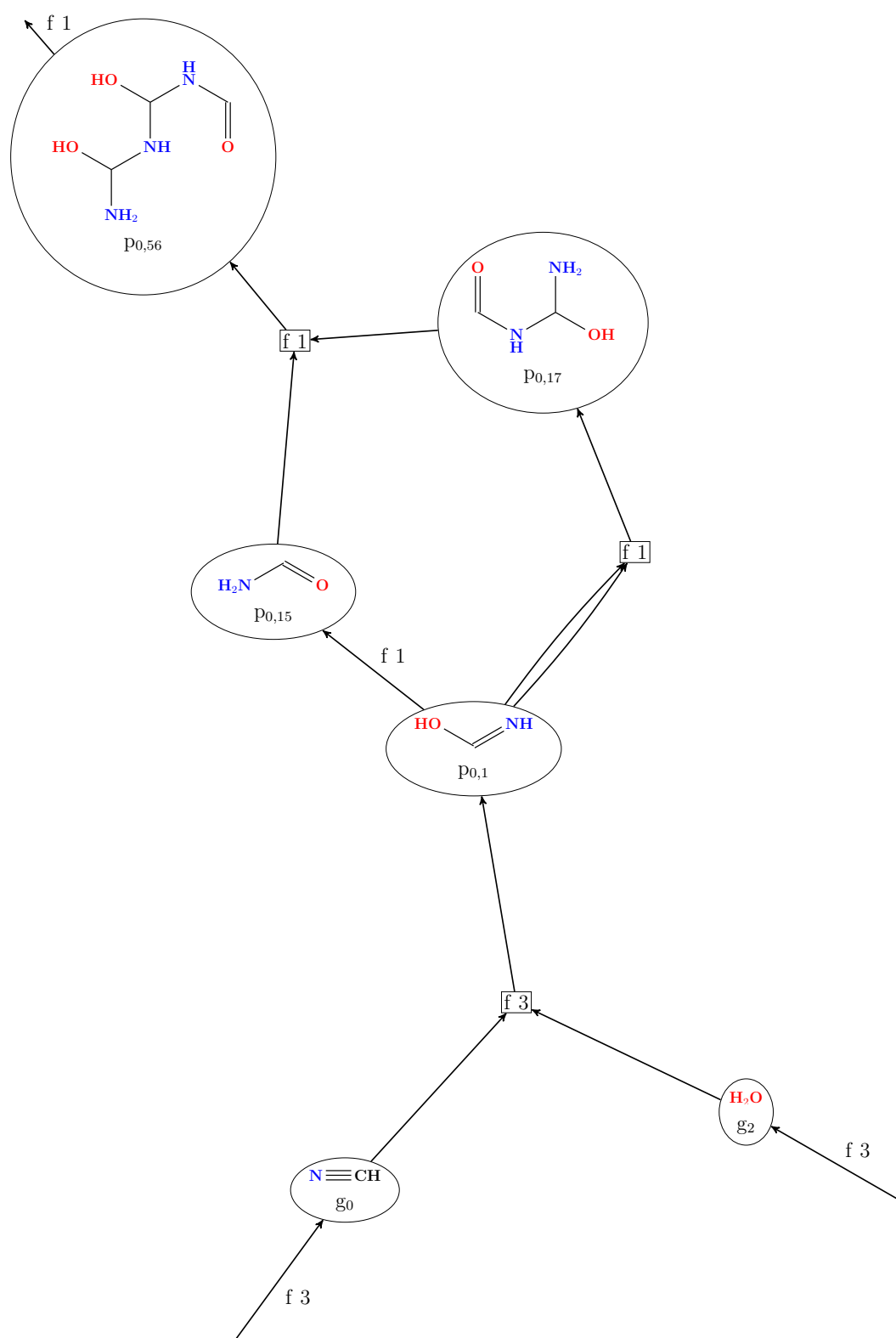
0.3.5 Solution 4

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	-6.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,15\}}$	0	0	-10.625195	-3.010186	2
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	3
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/069_dg_0_11100_f_0_4_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-6.0	-14478.980288	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,15}$	0	0	-27896.445756	-3.010186	-27906.456988	2
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	3
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-51.329686	-51.329686
36	$p_{0,1},$	$p_{0,15},$	1	-52.06547	-52.06547
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-78.299923	-78.299923
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.006113	0.006113
Sum					-225.27404733946997

$$\Delta G = -28.434833748576036$$

$$\Delta E = -0.08580235317955984$$

$$|E| = 6$$

$$|U| = 4$$

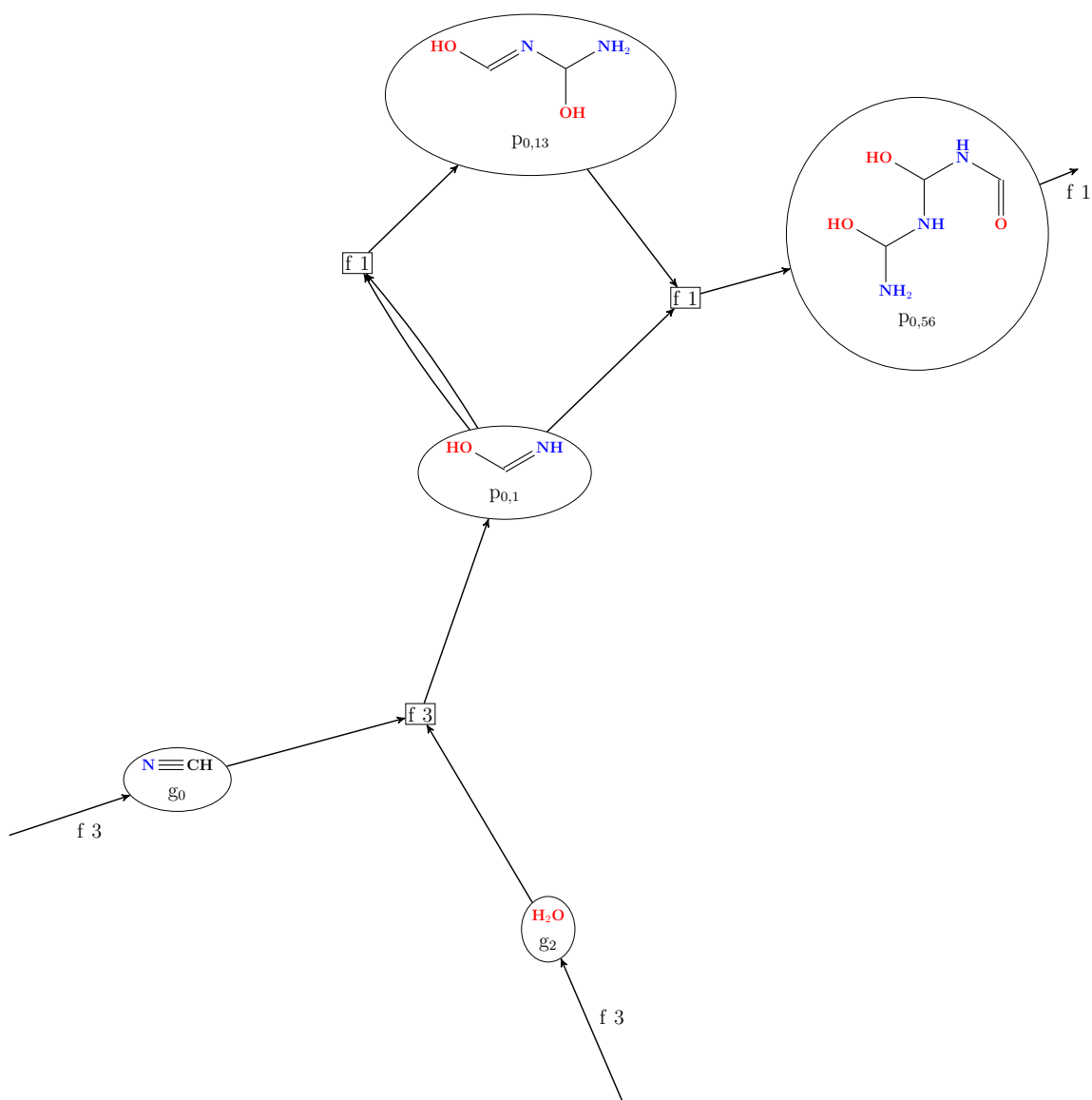
0.3.6 Solution 5

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	-6.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240635	1.000000	65
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/078_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	-6.0	-14478.980288	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.279594	1.0	-55763.953809	65
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-51.273973	-51.273973
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-56.858207	-56.858207
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-73.668213	-73.668213
Sum					-225.27404733946875

$$\Delta G = -28.434832960926144$$

$$\Delta E = -0.08580235317955937$$

$$|E| = 5$$

$$|U| = 3$$

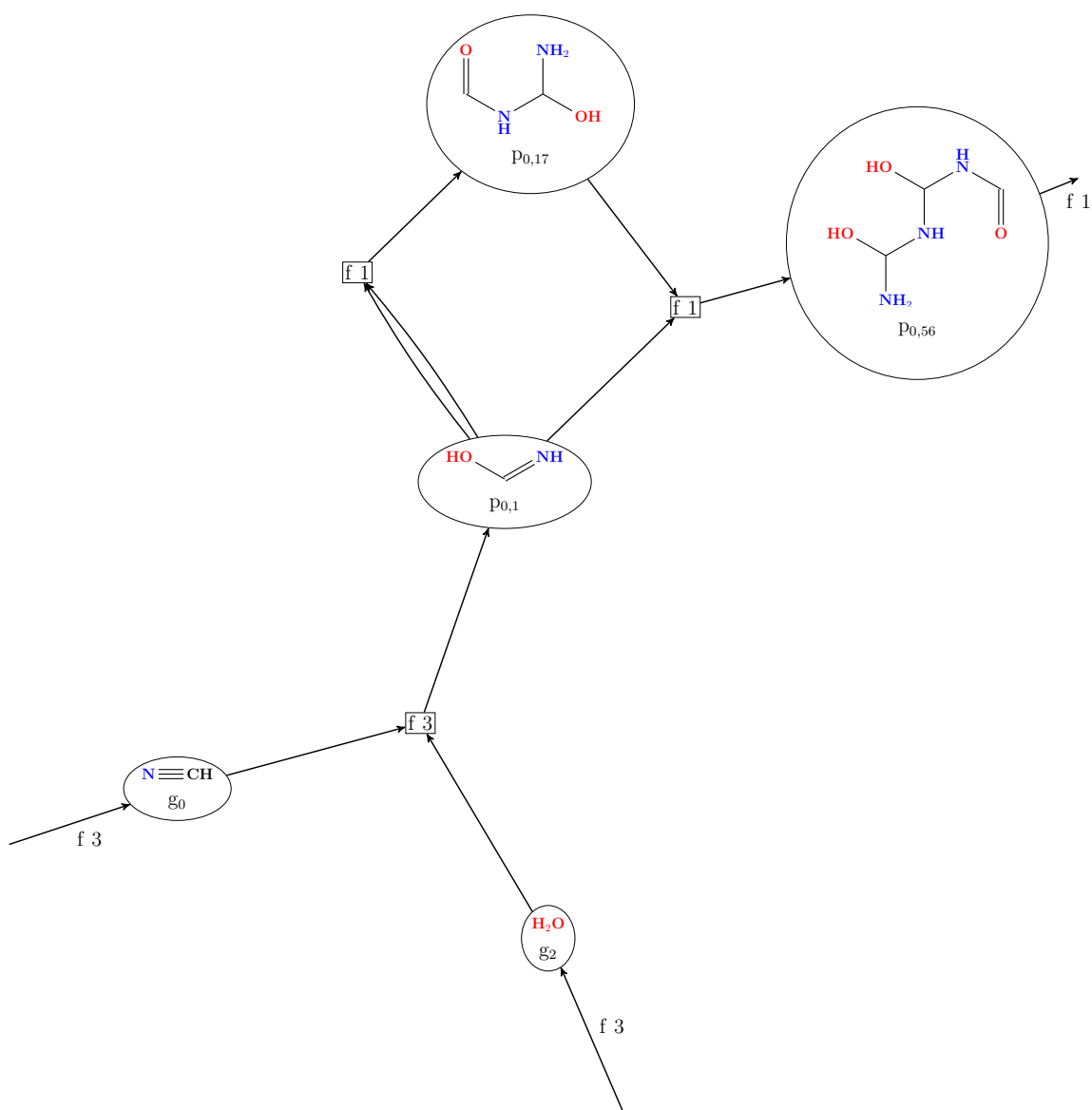
0.3.7 Solution 6

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	3
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/087_dg_0_11100_f_0_6_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	3
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.692097	-94.692097
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-78.41135	-78.41135
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-52.115071	-52.115071
Sum					-225.27404733946875

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.08580235317955937$$

$$|E| = 5$$

$$|U| = 3$$

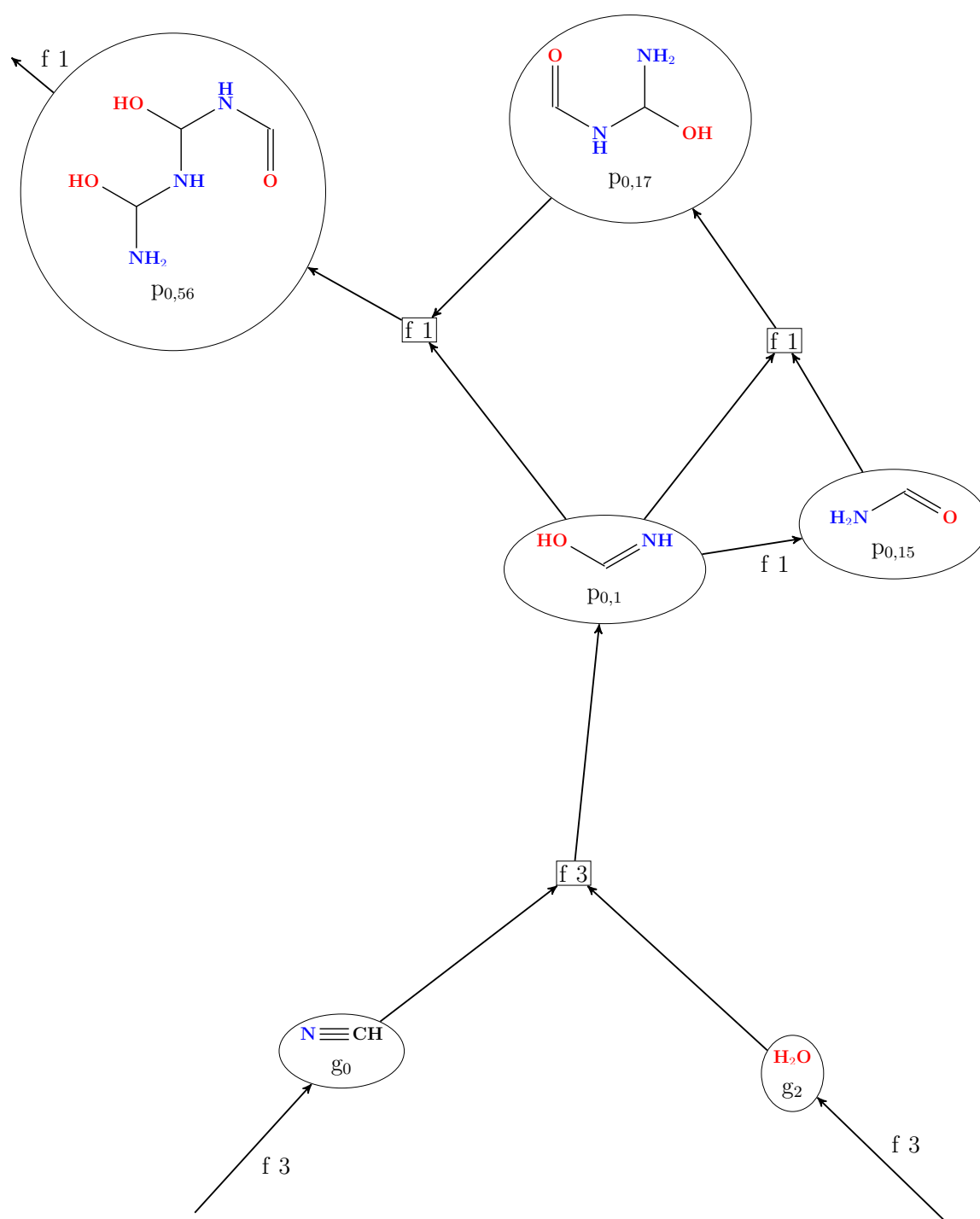
0.3.8 Solution 7

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	20
$p_{\{0,15\}}$	0	0	-10.625195	-6.000000	22
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	44
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	21
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/096_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	20
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	21
$p_{0,15}$	0	0	-27896.445756	-6.0	-27916.400466	22
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	44
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-72.983035	-72.983035
36	$p_{0,1},$	$p_{0,15},$	1	-61.393477	-61.393477
183	$p_{0,1}, p_{0,15},$	$p_{0,17},$	1	-17.017873	-17.017873
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-52.115071	-52.115071
Sum					-225.27404733946997

$$\Delta G = -34.94755153588339$$

$$\Delta E = -0.08580235317955984$$

$$|E| = 6$$

$$|U| = 4$$

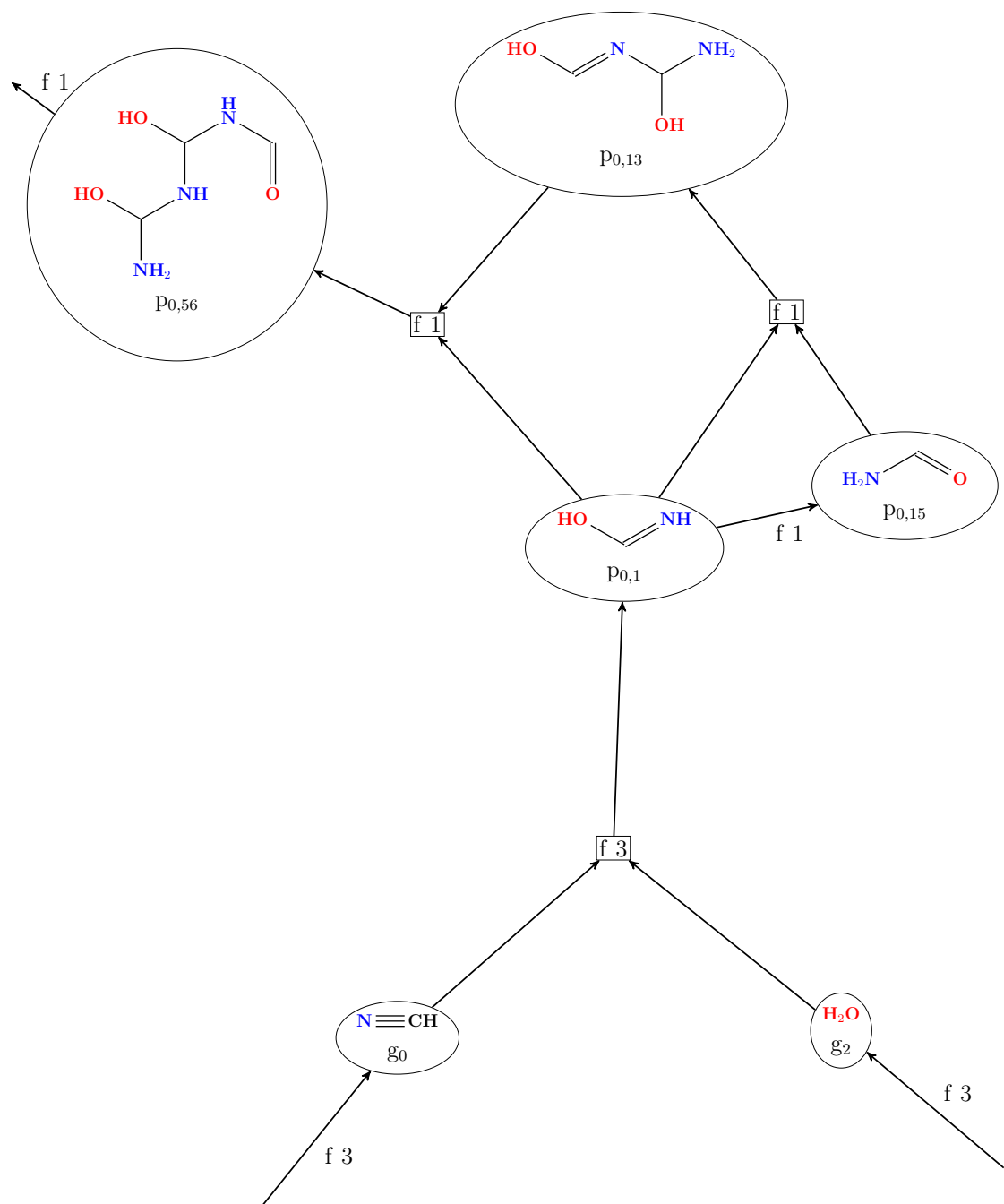
0.3.9 Solution 8

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	43
$p_{\{0,15\}}$	0	0	-10.625195	-6.000000	22
$p_{\{0,1\}}$	0	0	-10.610101	-4.557591	20
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/105_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	-4.557591	-27871.974622	20
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	43
$p_{0,15}$	0	0	-27896.445756	-6.0	-27916.400466	22
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-90.274474	-90.274474
36	$p_{0,1},$	$p_{0,15},$	1	-44.102037	-44.102037
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	-34.556177	-34.556177
Sum					-225.27404733946744

$$\Delta G = -34.94755179843335$$

$$\Delta E = -0.08580235317955887$$

$$|E| = 6$$

$$|U| = 4$$

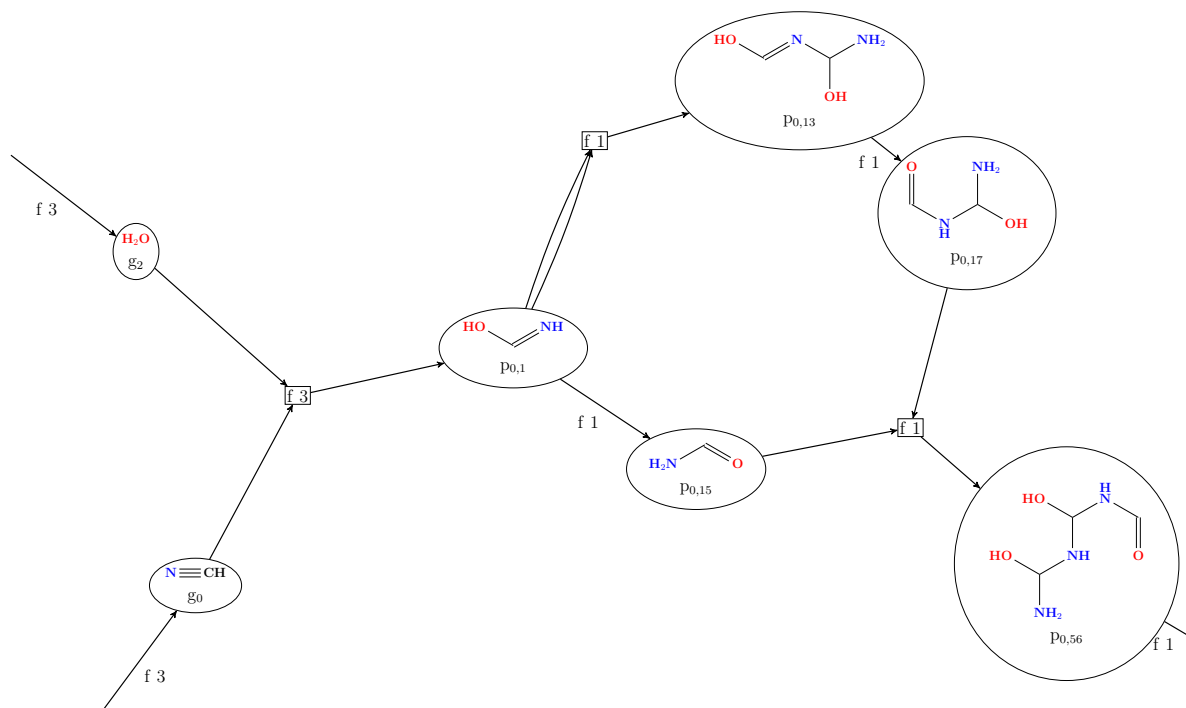
0.3.10 Solution 9

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240635	1.000000	3
$p_{\{0,15\}}$	0	0	-10.625174	1.000000	2
$p_{\{0,17\}}$	0	0	-21.248844	-3.026205	64
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/114_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	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,13}$	0	0	-55767.279594	1.0	-55763.953809	3
$p_{0,15}$	0	0	-27896.389963	1.0	-27893.064178	2
$p_{0,17}$	0	0	-55788.832737	-3.026205	-55798.897245	64
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-73.038748	-73.038748
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-56.74678	-56.74678
36	$p_{0,1},$	$p_{0,15},$	1	-39.572909	-39.572909
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.0	0.0
250	$p_{0,13},$	$p_{0,17},$	1	-34.039591	-34.039591
Sum					-225.2740473394666

$$\Delta G = -34.947551273333424$$

$$\Delta E = -0.08580235317955855$$

$$|E| = 7$$

$$|U| = 5$$

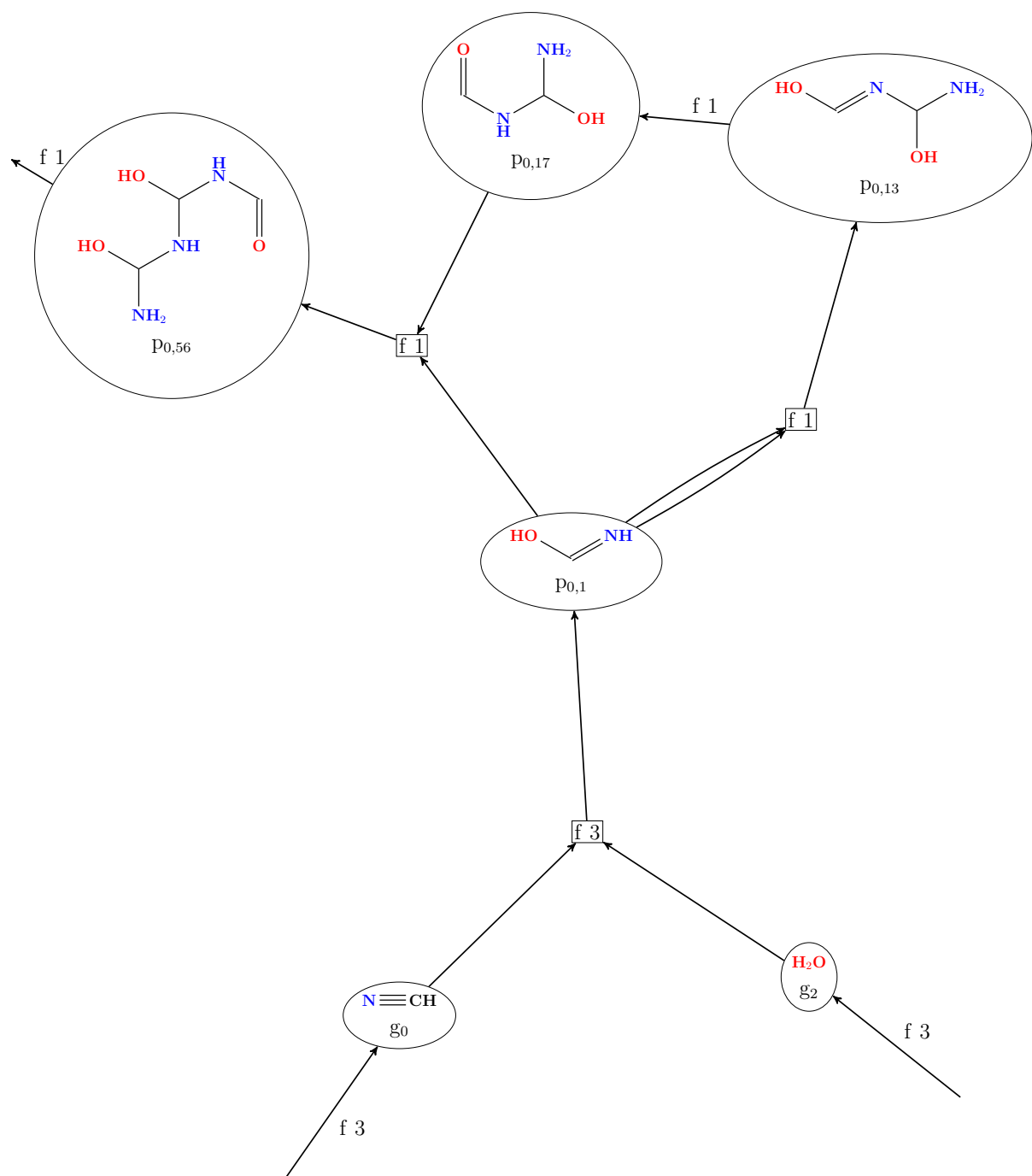
0.3.11 Solution 10

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,13\}}$	0	0	-21.240635	1.000000	3
$p_{\{0,17\}}$	0	0	-21.248844	-6.000000	65
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/123_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.279594	1.0	-55763.953809	3
$p_{0,17}$	0	0	-55788.832737	-6.0	-55808.787447	65
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.692097	-94.692097
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-56.858207	-56.858207
196	$p_{0,1}, p_{0,17},$	$p_{0,56},$	1	-30.406009	-30.406009
250	$p_{0,13},$	$p_{0,17},$	1	-43.262205	-43.262205
Sum					-225.27404733946537

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.08580235317955807$$

$$|E| = 6$$

$$|U| = 4$$

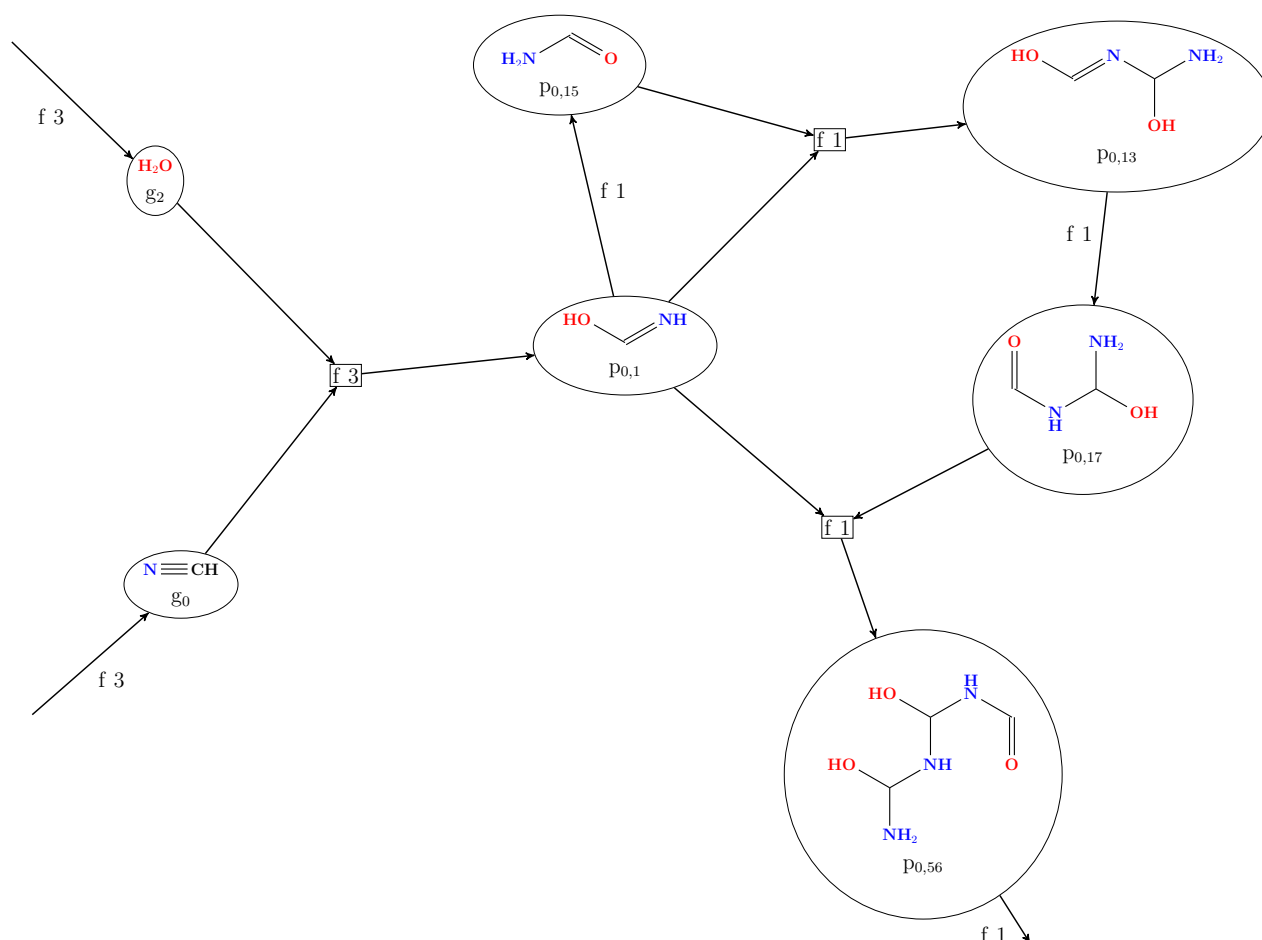
0.3.12 Solution 11

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	-6.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240635	1.000000	44
$p_{\{0,15\}}$	0	0	-10.625195	-4.539592	22
$p_{\{0,17\}}$	0	0	-21.248844	-6.000000	45
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	21
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/132_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	-6.0	-14478.980288	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	21
$p_{0,13}$	0	0	-55767.279594	1.0	-55763.953809	44
$p_{0,15}$	0	0	-27896.445756	-4.539592	-27911.543462	22
$p_{0,17}$	0	0	-55788.832737	-6.0	-55808.787447	45
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	g_0, g_2	$p_{0,1}$	3	-51.273973	-51.273973
36	$p_{0,1}$	$p_{0,15}$	1	-56.86432	-56.86432
192	$p_{0,1}, p_{0,15}$	$p_{0,13}$	1	0.006113	0.006113
196	$p_{0,1}, p_{0,17}$	$p_{0,56}$	1	-30.406009	-30.406009
250	$p_{0,13}$	$p_{0,17}$	1	-43.262205	-43.262205
Sum					-225.27404733946406

$$\Delta G = -28.434832960926144$$

$$\Delta E = -0.08580235317955758$$

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

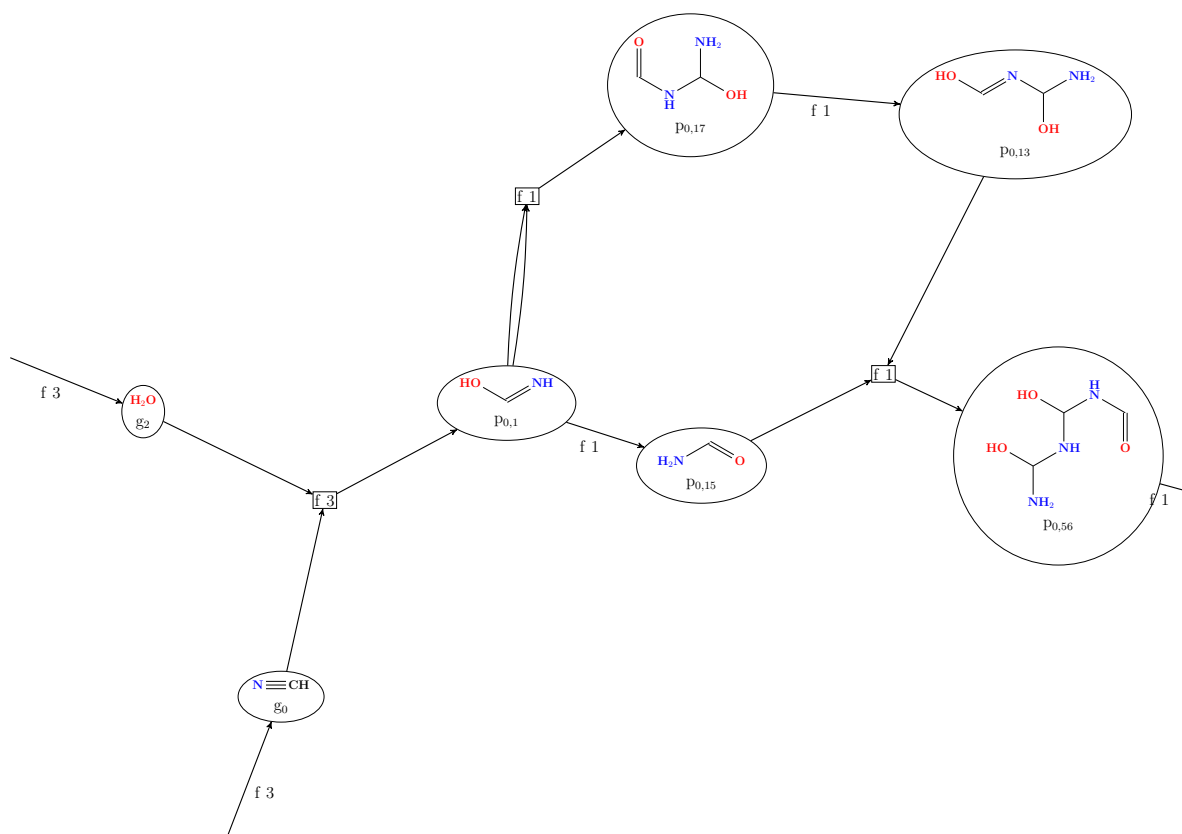
0.3.13 Solution 12

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	20
$p_{\{0,13\}}$	0	0	-21.240678	-5.911790	44
$p_{\{0,15\}}$	0	0	-10.625174	-3.030147	22
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	43
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	21
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/141_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	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	20
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	21
$p_{0,13}$	0	0	-55767.391129	-5.91179	-55787.05247	44
$p_{0,15}$	0	0	-27896.389963	-3.030147	-27906.467582	22
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	43
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.74781	-94.74781
36	$p_{0,1},$	$p_{0,15},$	1	-52.071583	-52.071583
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-78.299923	-78.299923
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	0.006113	0.006113
253	$p_{0,17},$	$p_{0,13},$	1	0.006113	0.006113
Sum	-225.27404733946406				

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.08580235317955758$$

$$|E| = 7$$

$$|U| = 5$$

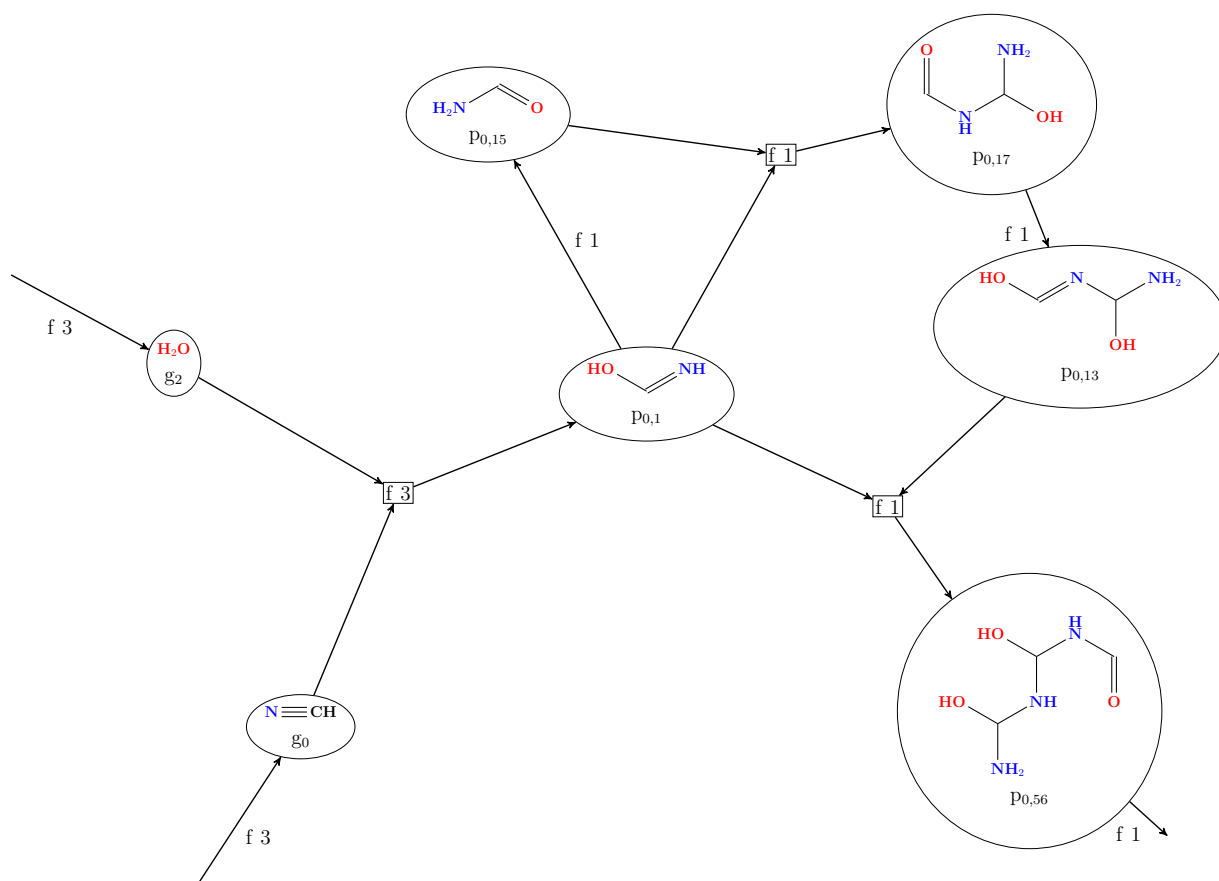
0.3.14 Solution 13

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	65
$p_{\{0,15\}}$	0	0	-10.625195	1.000000	21
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	23
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/150_dg_0_11100_f_0_13_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	65
$p_{0,15}$	0	0	-27896.445756	1.0	-27893.119971	21
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	23
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	g_0, g_2	$p_{0,1}$	3	-94.692097	-94.692097
36	$p_{0,1}$	$p_{0,15}$	1	-39.684415	-39.684415
183	$p_{0,1}, p_{0,15}$	$p_{0,17}$	1	-38.726935	-38.726935
253	$p_{0,17}$	$p_{0,13}$	1	-0.267454	-0.267454
263	$p_{0,1}, p_{0,13}$	$p_{0,56}$	1	-51.847617	-51.847617
Sum					-225.2740473394734

$$\Delta G = -41.46026984829067$$

$$\Delta E = -0.08580235317956114$$

$$|E| = 7$$

$$|U| = 5$$

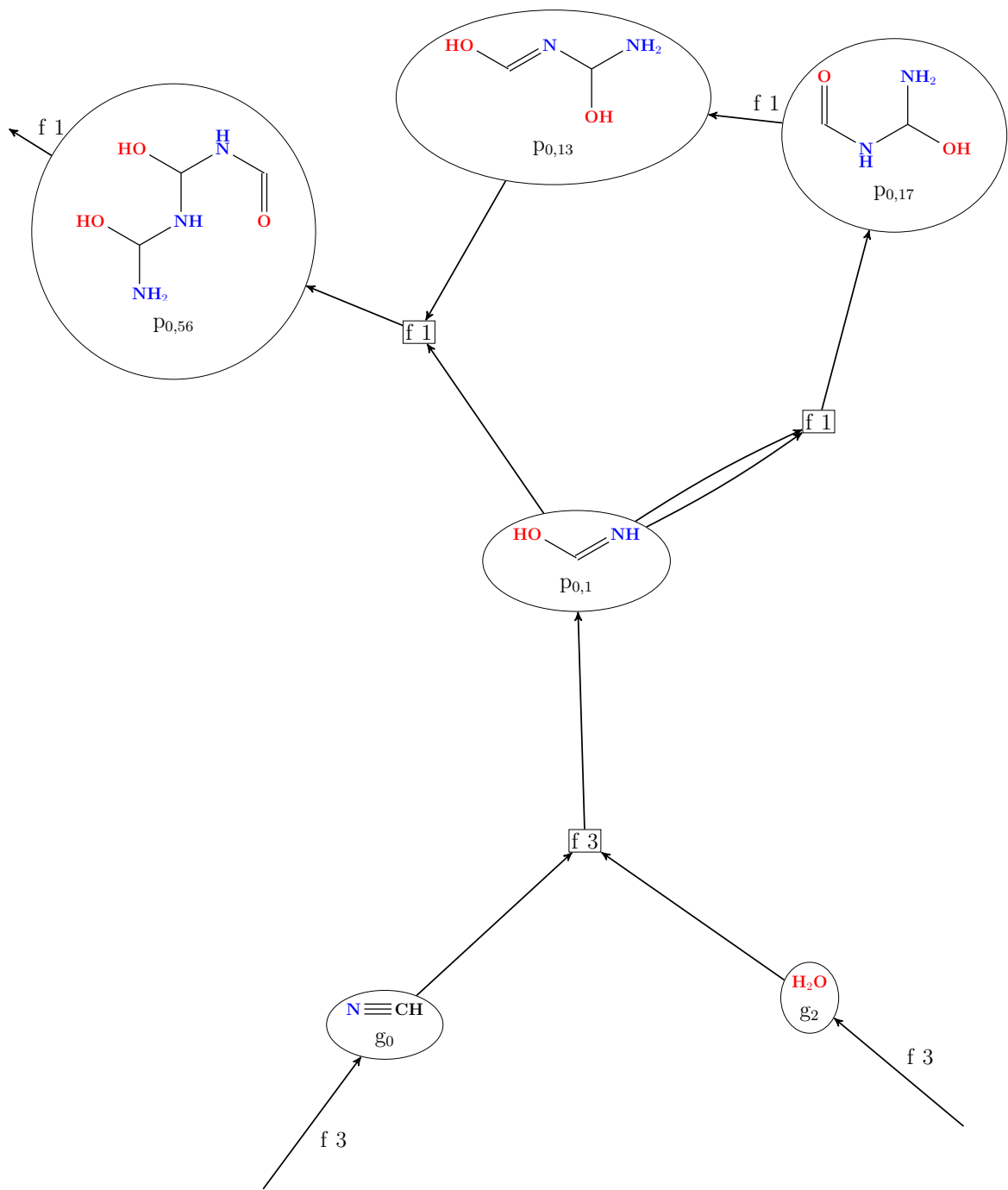
0.3.15 Solution 14

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
g_{0}	3	0	-5.507152	1.000000	0
g_{2}	3	0	-5.068043	1.000000	0
p_{0,13}	0	0	-21.240678	-6.000000	4
p_{0,17}	0	0	-21.248844	1.000000	3
p_{0,1}	0	0	-10.610080	1.000000	1
p_{0,56}	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/159_dg_0_11100_f_0_14_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	4
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	3
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.692097	-94.692097
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-78.41135	-78.41135
253	$p_{0,17},$	$p_{0,13},$	1	-0.267454	-0.267454
263	$p_{0,1}, p_{0,13},$	$p_{0,56},$	1	-51.847617	-51.847617
Sum					-225.2740473394721

$$\Delta G = -41.46026984829067$$

$$\Delta E = -0.08580235317956064$$

$$|E| = 6$$

$$|U| = 4$$

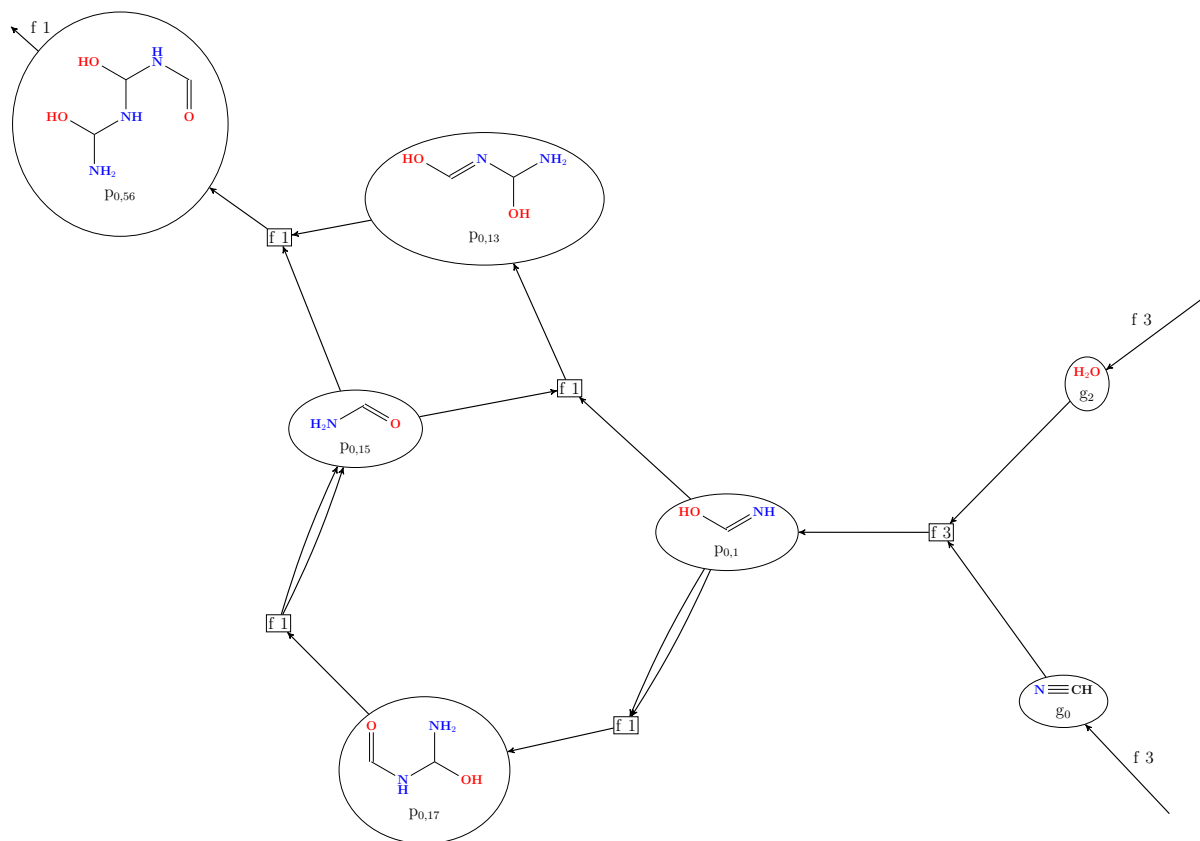
0.3.16 Solution 15

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	34
$p_{\{0,15\}}$	0	0	-10.625174	-2.380626	32
$p_{\{0,17\}}$	0	0	-21.248887	-6.000000	31
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/168_dg_0_11100_f_0_15_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	34
$p_{0,15}$	0	0	-27896.389963	-2.380626	-27904.307412	32
$p_{0,17}$	0	0	-55788.944315	-6.0	-55808.899025	31
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.692097	-94.692097
40	$p_{0,1}, p_{0,1},$	$p_{0,17},$	1	-100.23199	-100.23199
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	-1.734678	-1.734678
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	-28.565865	-28.565865
237	$p_{0,17},$	$p_{0,15}, p_{0,15},$	1	0.006113	0.006113
Sum					-225.2740473394615

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.0858023531795566$$

$$|E| = 7$$

$$|U| = 5$$

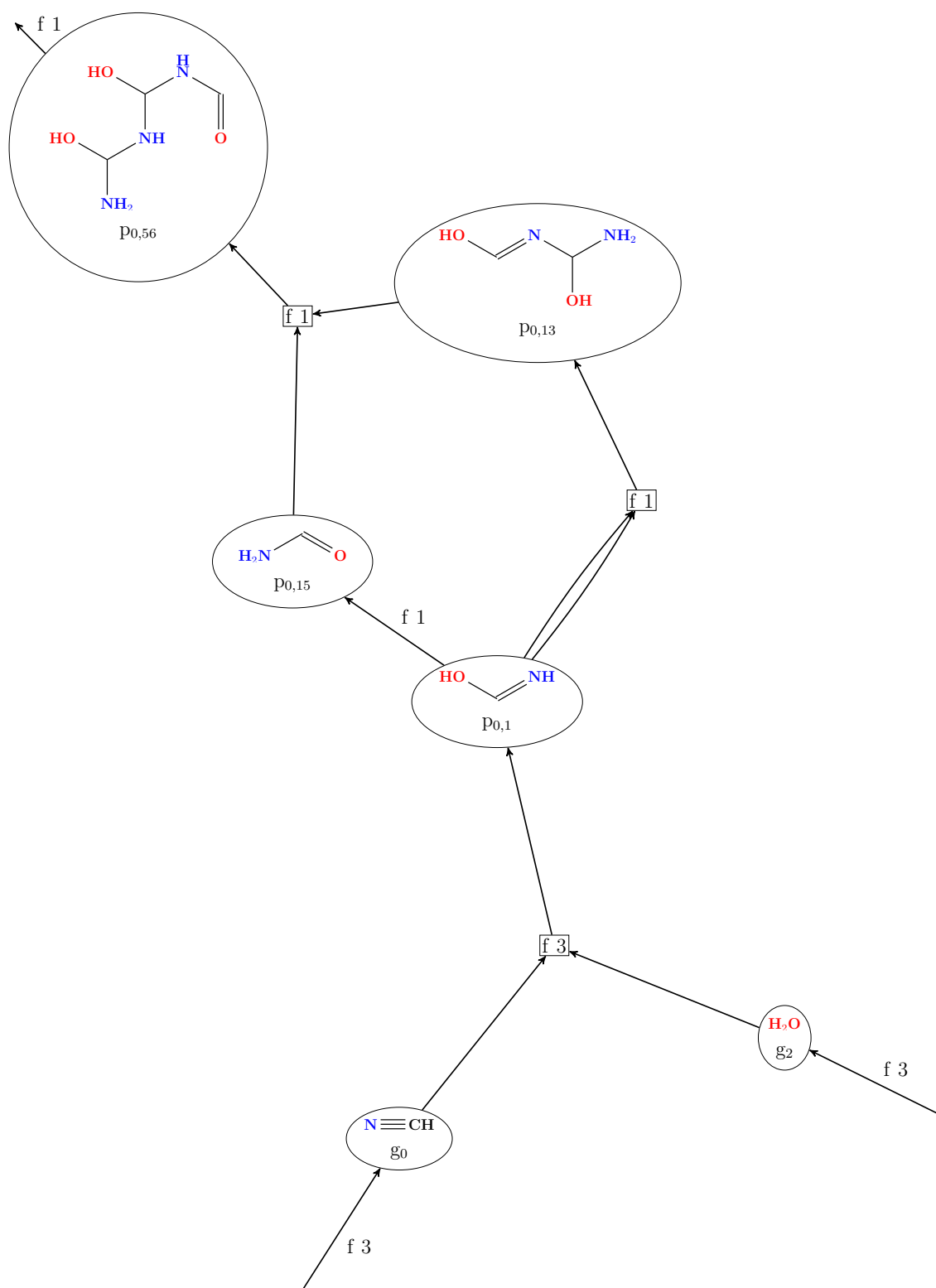
0.3.17 Solution 16

Overall Data

Objective value (non-integral): -0.0858024

Vertex/Graph	In	Out	G	logK	t_order
g_{0}	3	0	-5.507152	-6.000000	0
g_{2}	3	0	-5.068043	-6.000000	0
p_{0,13}	0	0	-21.240678	-2.923947	3
p_{0,15}	0	0	-10.625195	-6.000000	2
p_{0,1}	0	0	-10.610101	1.000000	1
p_{0,56}	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/177_dg_0_11100_f_0_16_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-6.0	-14478.980288	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,13}$	0	0	-55767.391129	-2.923947	-55777.115547	3
$p_{0,15}$	0	0	-27896.445756	-6.0	-27916.400466	2
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-51.329686	-51.329686
30	$p_{0,1}, p_{0,1},$	$p_{0,13},$	1	-69.02763	-69.02763
36	$p_{0,1},$	$p_{0,15},$	1	-61.337763	-61.337763
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	0.006113	0.006113
Sum					-225.27404733946065

$$\Delta G = -28.434833748576036$$

$$\Delta E = -0.08580235317955628$$

$$|E| = 6$$

$$|U| = 4$$

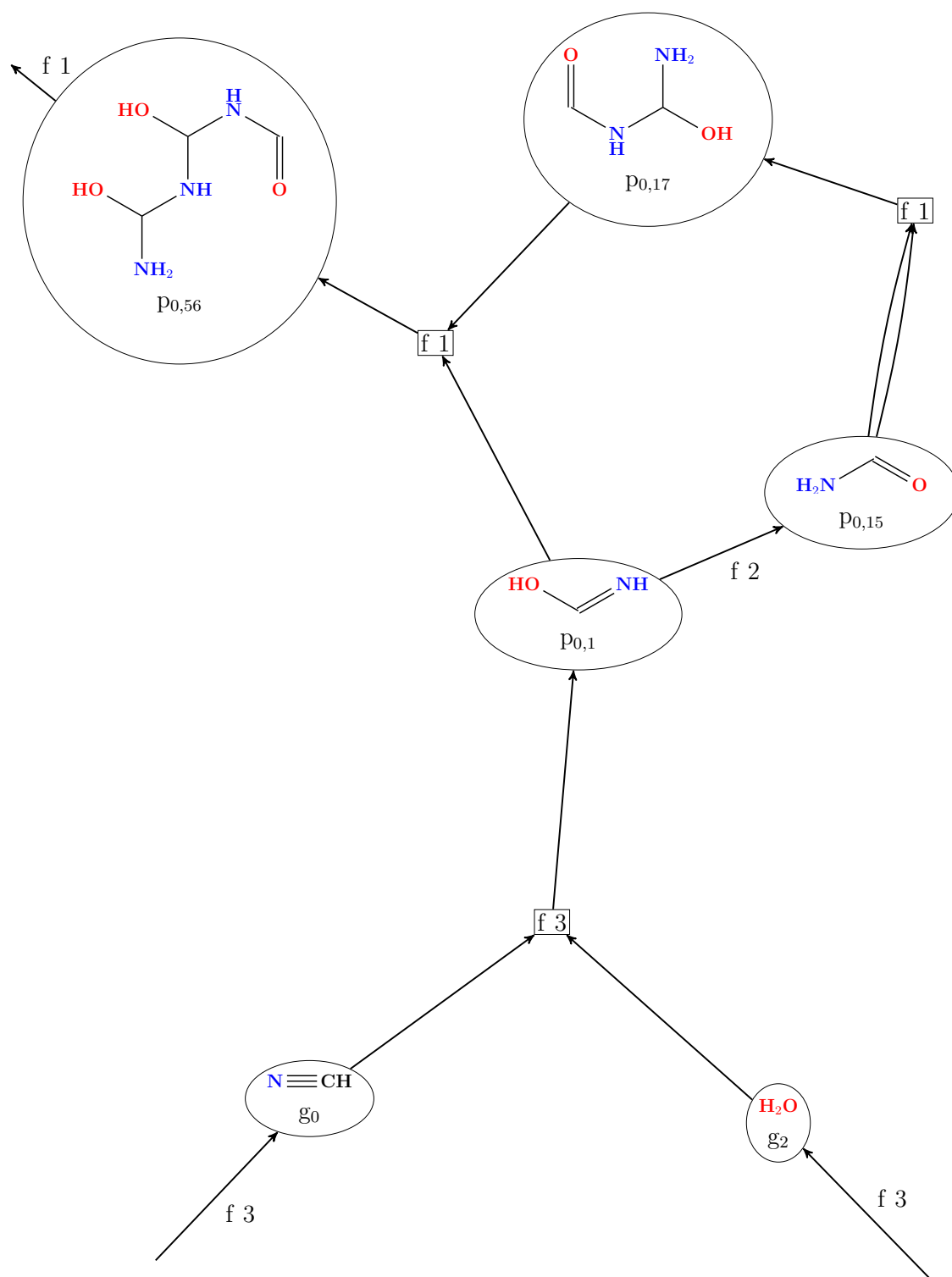
0.3.18 Solution 17

Overall Data

Objective value (non-integral): -0.0707086

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,15\}}$	0	0	-10.625174	1.000000	2
$p_{\{0,17\}}$	0	0	-21.248844	0.727245	5
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/186_dg_0_11100_f_0_17_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,15}$	0	0	-27896.389963	1.0	-27893.064178	2
$p_{0,17}$	0	0	-55788.832737	0.727245	-55786.414077	5
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-72.983035	-72.983035
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	-51.269176	-51.269176
Sum	-185.6454252356783				

$\Delta G = -34.94755153588339$

$\Delta E = -0.07070860816132002$

$|E| = 7$

$|U| = 4$

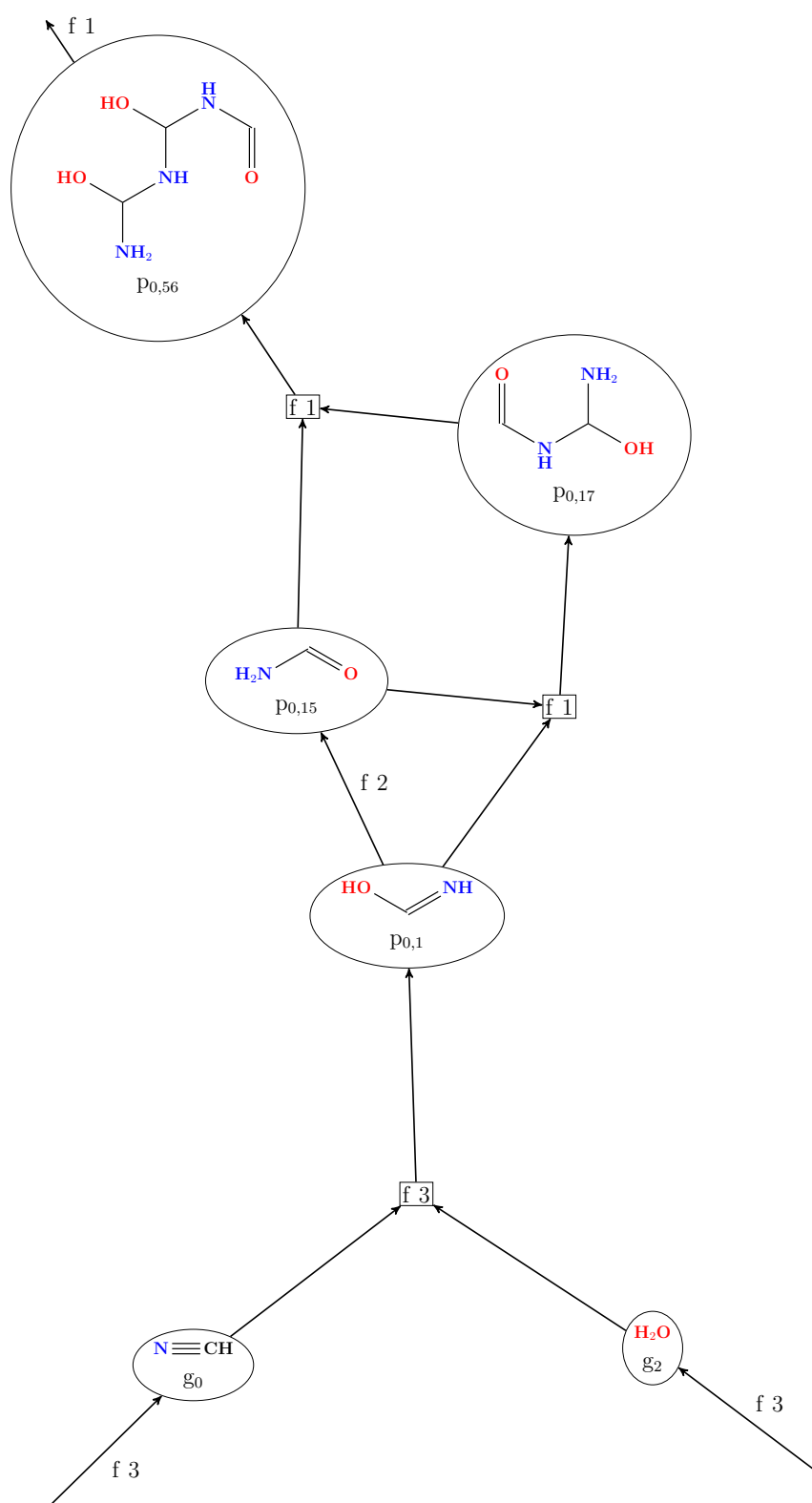
0.3.19 Solution 18

Overall Data

Objective value (non-integral): -0.0707086

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	1.000000	0
$p_{\{0,15\}}$	0	0	-10.625195	1.000000	32
$p_{\{0,17\}}$	0	0	-21.248887	-2.974208	34
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/195_dg_0_11100_f_0_18_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	1.0	-13302.819176	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,15}$	0	0	-27896.445756	1.0	-27893.119971	32
$p_{0,17}$	0	0	-55788.944315	-2.974208	-55798.835893	34
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-94.74781	-94.74781
36	$p_{0,1},$	$p_{0,15},$	2	-39.628701	-39.628701
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.006113	0.006113
183	$p_{0,1}, p_{0,15},$	$p_{0,17},$	1	-51.10799	-51.10799
Sum	-185.6454252356749				

$$\Delta G = -41.46027011084064$$

$$\Delta E = -0.07070860816131873$$

$$|E| = 7$$

$$|U| = 4$$

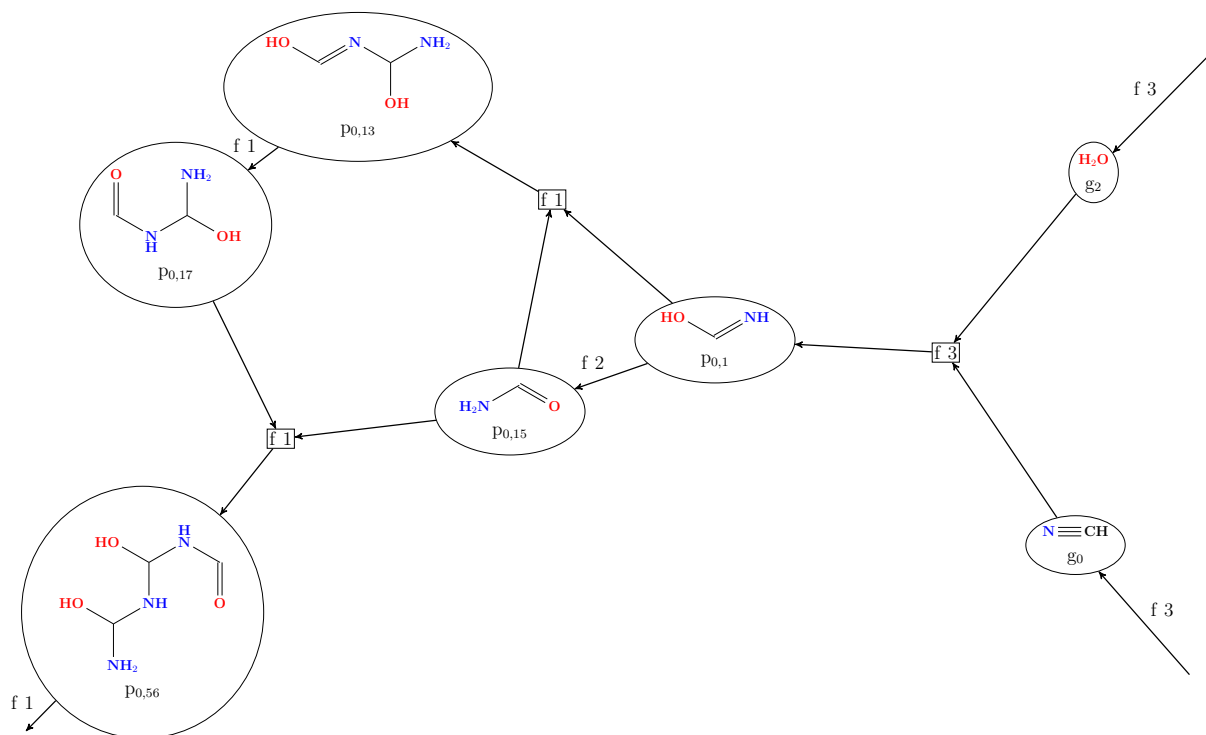
0.3.20 Solution 19

Overall Data

Objective value (non-integral): -0.0707086

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240635	1.000000	4
$p_{\{0,15\}}$	0	0	-10.625174	1.000000	2
$p_{\{0,17\}}$	0	0	-21.248887	-2.990227	64
$p_{\{0,1\}}$	0	0	-10.610101	-4.539617	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/204_dg_0_11100_f_0_19_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	-4.539617	-27871.914845	1
$p_{0,13}$	0	0	-55767.279594	1.0	-55763.953809	4
$p_{0,15}$	0	0	-27896.389963	1.0	-27893.064178	2
$p_{0,17}$	0	0	-55788.944315	-2.990227	-55798.889169	64
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-90.218733	-90.218733
36	$p_{0,1},$	$p_{0,15},$	2	-22.392924	-22.392924
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.0	0.0
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	0.006113	0.006113
250	$p_{0,13},$	$p_{0,17},$	1	-34.039591	-34.039591
Sum					-185.64542523566897

$$\Delta G = -34.94755179843335$$

$$\Delta E = -0.07070860816131647$$

$$|E| = 8$$

$$|U| = 5$$

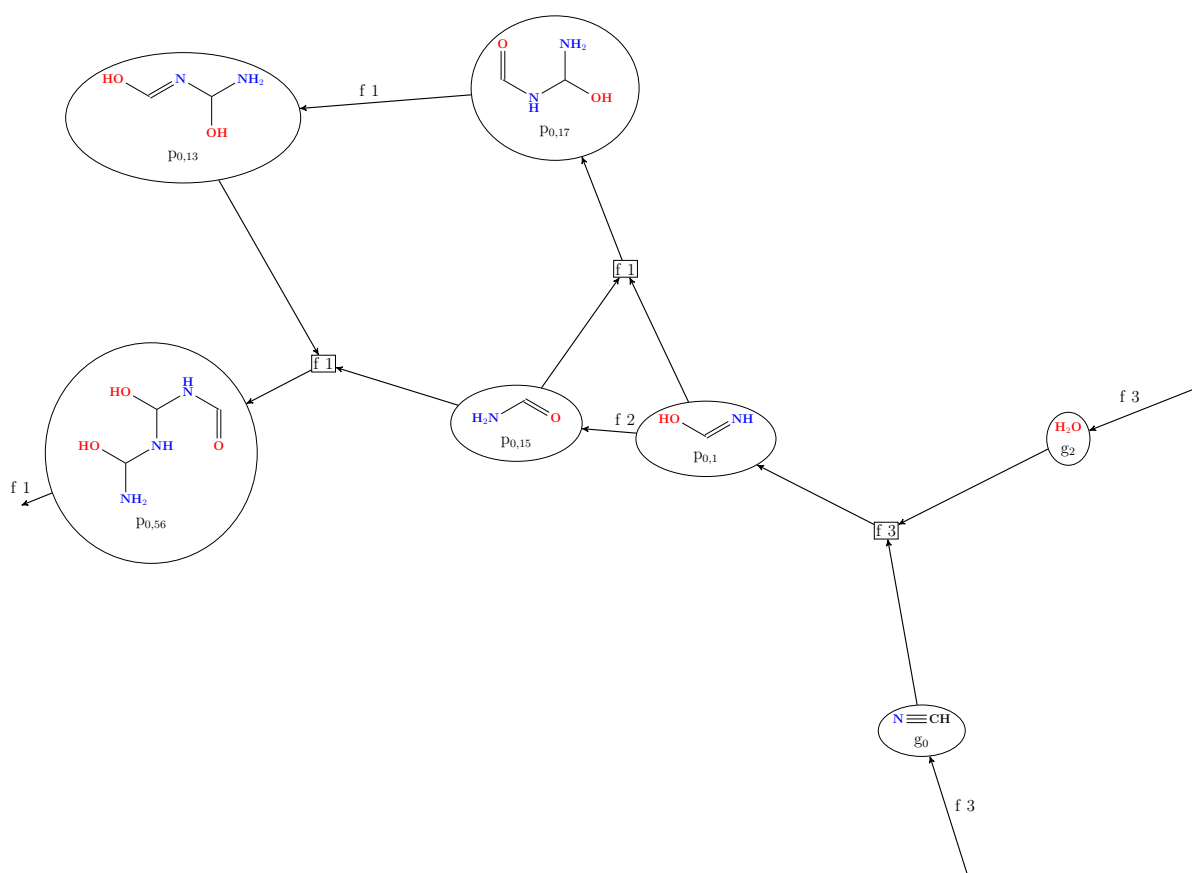
0.3.21 Solution 20

Overall Data

Objective value (non-integral): -0.0707086

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	19
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	44
$p_{\{0,15\}}$	0	0	-10.625195	-2.923947	22
$p_{\{0,17\}}$	0	0	-21.248844	1.000000	43
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	20
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/213_dg_0_11100_f_0_20_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	19
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	20
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	44
$p_{0,15}$	0	0	-27896.445756	-2.923947	-27906.170174	22
$p_{0,17}$	0	0	-55788.832737	1.0	-55785.506952	43
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-73.038748	-73.038748
36	$p_{0,1},$	$p_{0,15},$	2	-51.798016	-51.798016
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	0.006113	0.006113
183	$p_{0,1}, p_{0,15},$	$p_{0,17},$	1	-26.501907	-26.501907
253	$p_{0,17},$	$p_{0,13},$	1	-0.267454	-0.267454
Sum	-185.64542523566897				

$$\Delta G = -34.947551273333424$$

$$\Delta E = -0.07070860816131647$$

$$|E| = 8$$

$$|U| = 5$$

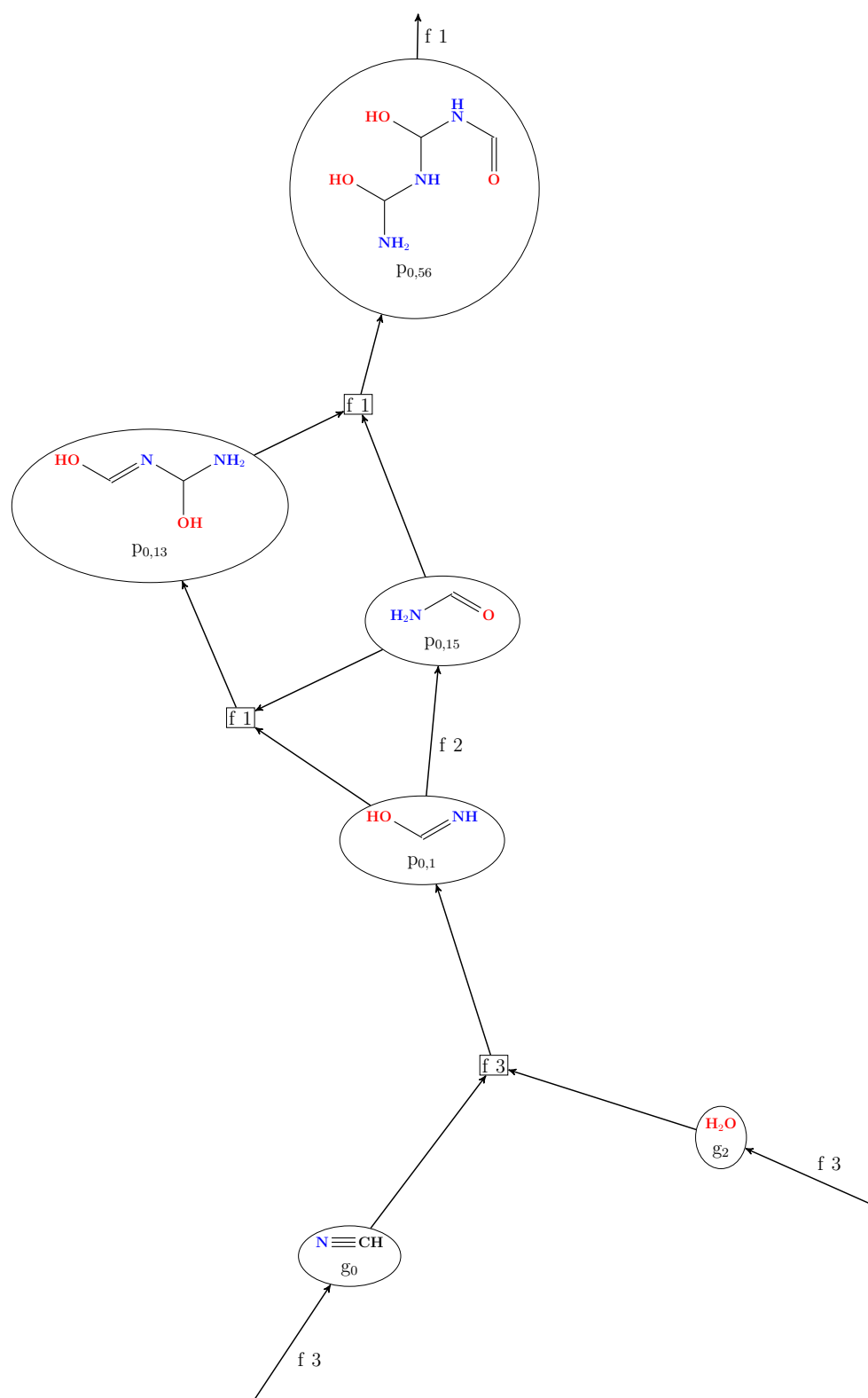
0.3.22 Solution 21

Overall Data

Objective value (non-integral): -0.0707086

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	1.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,13\}}$	0	0	-21.240678	-6.000000	4
$p_{\{0,15\}}$	0	0	-10.625174	1.000000	2
$p_{\{0,1\}}$	0	0	-10.610080	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/222_dg_0_11100_f_0_21_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	1.0	-14455.699793	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.761341	1.0	-27853.435556	1
$p_{0,13}$	0	0	-55767.391129	-6.0	-55787.345839	4
$p_{0,15}$	0	0	-27896.389963	1.0	-27893.064178	2
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-72.983035	-72.983035
36	$p_{0,1},$	$p_{0,15},$	2	-39.628622	-39.628622
169	$p_{0,13}, p_{0,15},$	$p_{0,56},$	1	-12.218995	-12.218995
192	$p_{0,1}, p_{0,15},$	$p_{0,13},$	1	-39.050182	-39.050182
Sum					-185.64542523566303

$$\Delta G = -34.94755153588339$$

$$\Delta E = -0.0707086081613142$$

$$|E| = 7$$

$$|U| = 4$$

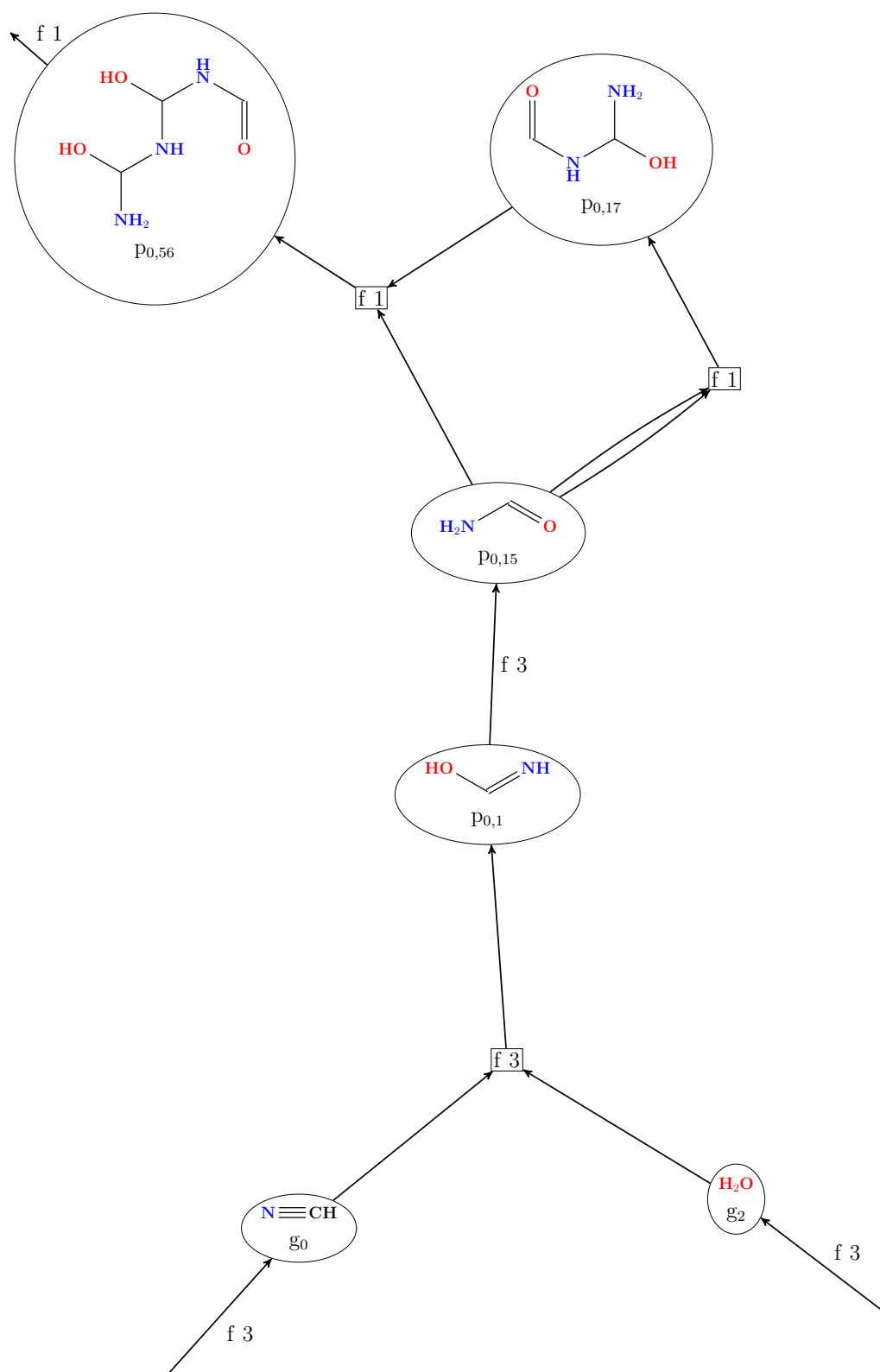
0.3.23 Solution 22

Overall Data

Objective value (non-integral): -0.0556149

Vertex/Graph	In	Out	G	logK	t_order
$g_{\{0\}}$	3	0	-5.507152	-6.000000	0
$g_{\{2\}}$	3	0	-5.068043	-6.000000	0
$p_{\{0,15\}}$	0	0	-10.625174	-0.252464	21
$p_{\{0,17\}}$	0	0	-21.248887	-1.739734	45
$p_{\{0,1\}}$	0	0	-10.610101	1.000000	1
$p_{\{0,56\}}$	0	1	-31.869324	-6.000000	67

Filtered Graph



File: out/231_dg_0_11100_f_0_22_filt

Vertex	InFlow	OutFlow	$x_v^{\Delta G^0}$	x_v^K	$x_v^{\Delta G}$	t_v
g_0	3	0	-14459.025578	-6.0	-14478.980288	0
g_2	3	0	-13306.144961	-6.0	-13326.099672	0
$p_{0,1}$	0	0	-27856.817054	1.0	-27853.491269	1
$p_{0,15}$	0	0	-27896.389963	-0.252464	-27897.229604	21
$p_{0,17}$	0	0	-55788.944315	-1.739734	-55794.730298	45
$p_{0,56}$	0	1	-83672.898792	-6.0	-83692.853502	67

Hyperedge	Source	Target	Flow	$x_e^{\Delta G}$	$\bar{x}_e^{\Delta G}$
6	$g_0, g_2,$	$p_{0,1},$	3	-51.329686	-51.329686
36	$p_{0,1},$	$p_{0,15},$	3	-43.457169	-43.457169
180	$p_{0,15}, p_{0,15},$	$p_{0,17},$	1	0.006113	0.006113
181	$p_{0,15}, p_{0,17},$	$p_{0,56},$	1	0.006113	0.006113
Sum					-146.01680313188317

$$\Delta G = -28.434833748576036$$

$$\Delta E = -0.05561486314307889$$

$$|E| = 8$$

$$|U| = 4$$