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OXYGEN (LIQUID)

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.98	197.3	240.12	196.94	1.01	1.74	3119.31	2810.54	2196.76
140	0.97	211.7	249.51	211.29	1.01	2.14	3164.67	2853.72	2097.82
197	0.95	224.85	258.59	224.46	1.01	2.68	3224.21	2910.67	2013.04
277	0.94	236.76	267.11	236.35	1.01	3.37	3271.51	2955.8	1922.81
389	0.94	247.62	275.09	247.22	1.01	4.27	3305.78	2988.32	1826.91
547	0.92	257.69	282.74	257.26	1.02	5.46	3367.87	3047.9	1756.31
769	0.91	267.02	289.94	266.51	1.02	7	3416.97	3094.91	1679.35
1081	0.9	275.71	296.76	275.15	1.02	9.01	3466.65	3142.53	1606.34
1519	0.89	283.84	303.23	283.37	1.02	11.63	3516.83	3190.68	1537.19
2135	0.88	291.49	309.4	291	1.02	15.05	3567.57	3239.42	1471.5
3000	0.87	298.69	315.28	297.96	1.02	19.53	3618.76	3288.67	1409.23

OXYGEN (LIQUID)**METHANOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.91	196.18	239.38	195.99	0.94	1.76	2946.5	2680.49	2132.92
140	0.9	210.59	248.84	210.35	0.94	2.18	2982.91	2715.29	2040.88
197	0.89	223.75	257.94	223.47	0.95	2.73	3020.12	2750.88	1951.43
277	0.88	235.66	266.5	235.37	0.95	3.45	3057.6	2786.76	1866.3
389	0.87	246.54	274.54	246.13	0.95	4.39	3095.34	2822.92	1785.25
547	0.86	256.59	282.14	256.29	0.95	5.62	3133.52	2859.51	1707.47
769	0.84	265.91	289.34	265.55	0.95	7.23	3183.17	2907.2	1641.45
1081	0.83	274.57	296.13	274.24	0.95	9.32	3222.16	2944.64	1570.44
1519	0.82	282.66	302.54	282.29	0.95	12.05	3261.35	2982.3	1502.65
2135	0.82	290.23	308.59	289.75	0.95	15.6	3288.94	3008.76	1429.58
3000	0.8	297.35	314.39	296.92	0.95	20.3	3340.33	3058.28	1375.67

OXYGEN (LIQUID)

METHANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.8	215.75	262.46	215.4	0.77	1.73	3025.96	2723.37	2121.57
140	0.78	231.34	272.56	231.03	0.77	2.13	3091.36	2785.77	2041.17
197	0.77	245.53	282.23	245.21	0.78	2.66	3138.93	2831.11	1947.98
277	0.76	258.32	291.29	257.95	0.78	3.35	3187.16	2877.13	1859.92
389	0.75	269.97	299.8	269.55	0.78	4.25	3236.03	2923.81	1776.68
547	0.74	280.72	307.84	280.38	0.78	5.42	3285.75	2971.34	1697.32
769	0.73	290.65	315.41	290.3	0.79	6.94	3336.16	3019.58	1622.11
1081	0.71	299.87	322.61	299.5	0.79	8.94	3408.9	3089.47	1566.03
1519	0.7	308.46	329.38	308.05	0.79	11.53	3461.13	3139.6	1498.42
2135	0.69	316.5	335.79	315.83	0.8	14.91	3514.05	3190.45	1434.18
3000	0.68	324.05	341.88	323.33	0.8	19.33	3567.57	3241.94	1373.3

OXYGEN (LIQUID)**ISOPROPYL ALCOHOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.34	200.83	244.53	200.39	0.97	1.74	3061.28	2763.31	2166.45
140	0.33	215.5	254.14	215.1	0.97	2.15	3125.83	2825.04	2087.05
197	0.33	228.87	263.31	228.6	0.97	2.68	3156.98	2854.6	1981.96
277	0.32	240.97	272	240.46	0.97	3.39	3223.79	2918.63	1910.39
389	0.32	252.02	280.12	251.65	0.97	4.3	3255.9	2949.16	1815.41
547	0.31	262.23	287.86	261.91	0.98	5.5	3324.44	3015.01	1751.98
769	0.31	271.7	295.14	271.13	0.98	7.04	3357.83	3046.82	1665.29
1081	0.31	280.48	301.97	279.62	0.98	9.05	3390.2	3077.68	1581.77
1519	0.3	288.75	308.59	288.18	0.98	11.71	3462.36	3147.22	1530.39
2135	0.3	296.46	314.76	295.58	0.98	15.13	3495.86	3179.23	1454.28
3000	0.29	303.74	320.73	303.22	0.98	19.71	3569.2	3250.1	1408.98

OXYGEN (LIQUID)

ETHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.49	199.53	243.13	199.24	0.96	1.75	3040.19	2751.82	2168.77
140	0.48	214.11	252.68	213.87	0.96	2.16	3091.2	2800.57	2081.15
197	0.48	227.44	261.85	227	0.96	2.7	3121.48	2829.36	1978.48
277	0.47	239.5	270.5	239.29	0.97	3.41	3174.52	2880.14	1898.84
389	0.46	250.5	278.63	250.18	0.97	4.33	3228.06	2931.45	1823.44
547	0.46	260.69	286.31	260.13	0.97	5.53	3259.48	2961.41	1734.08
769	0.45	270.12	293.59	269.82	0.97	7.1	3314.69	3014.42	1666.39
1081	0.45	278.89	300.43	278.53	0.97	9.14	3346.2	3044.51	1584.43
1519	0.44	287.1	306.98	286.82	0.97	11.82	3402.88	3099.04	1524.05
2135	0.43	294.79	313.18	294.36	0.97	15.33	3459.85	3153.93	1466.49
3000	0.43	302.04	319.05	301.65	0.97	19.87	3492.49	3185.19	1394.84

OXYGEN (LIQUID)**PROPANE**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.33	212.07	257.74	211.62	0.8	1.72	3138.39	2814.26	2178.78
140	0.33	227.37	267.59	227.06	0.8	2.12	3169.7	2843.79	2063.19
197	0.32	241.3	277.11	240.73	0.8	2.64	3244.63	2915.4	1986.13
277	0.32	253.89	286	253.49	0.8	3.32	3277.52	2946.49	1880.09
389	0.31	265.33	294.4	264.63	0.81	4.21	3354.83	3020.59	1813.59
547	0.31	275.92	302.3	275.36	0.81	5.35	3388.94	3052.9	1717.33
769	0.3	285.67	309.8	285.36	0.81	6.87	3468.82	3129.68	1659.34
1081	0.3	294.79	316.86	294.18	0.81	8.8	3504.11	3163.2	1571.98
1519	0.3	303.23	323.47	302.29	0.81	11.3	3538.08	3195.49	1488.07
2135	0.29	311.22	329.93	310.58	0.82	14.67	3622.72	3277.13	1442.56
3000	0.29	318.66	335.9	317.66	0.82	18.93	3657.8	3310.55	1366.13

OXYGEN (LIQUID)

HYDROGEN (CRYOGENIC)

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	5.42	288.39	349.45	288.22	0.24	1.69	2390.85	2125.97	1612.09
140	5.29	307.84	361.18	307.68	0.24	2.07	2433.94	2166.68	1531.14
197	5.14	325.24	372.27	325.05	0.25	2.57	2485.06	2215.03	1457.84
277	5.06	340.65	382.42	340.47	0.25	3.2	2515.36	2243.71	1373.03
389	4.89	354.42	391.85	354.27	0.25	4.03	2576.91	2302.02	1314.02
547	4.75	366.88	400.56	366.72	0.26	5.11	2630.84	2353.18	1251.84
769	4.63	378.16	408.58	378.01	0.26	6.49	2679.7	2399.57	1189.08
1081	4.5	388.43	416.01	388.27	0.27	8.27	2734.32	2451.49	1132.61
1519	4.34	397.8	422.92	397.63	0.27	10.6	2803.43	2517.26	1087.34
2135	4.2	406.4	429.32	406.18	0.28	13.62	2867.68	2578.48	1040.91
3000	4.09	414.3	435.24	414.09	0.28	17.5	2921.68	2629.98	990.76

NITROUS OXIDE

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.47	181.02	219.53	180.91	0.75	1.7	3031.64	2694.86	2055.76
140	0.47	193.83	227.61	193.5	0.75	2.08	3057.32	2718.78	1935.54
197	0.46	205.44	235.36	205.14	0.75	2.59	3098.05	2756.89	1830.86
277	0.45	215.84	242.57	215.68	0.75	3.24	3138.46	2794.75	1731.89
389	0.45	225.24	249.27	225.04	0.75	4.08	3164.23	2818.81	1628.39
547	0.44	233.87	255.58	233.71	0.75	5.17	3204.68	2856.78	1539.82
769	0.43	241.75	261.46	241.51	0.75	6.58	3244.63	2894.31	1455.7
1081	0.43	249.03	266.95	248.82	0.75	8.39	3270.23	2918.27	1366.97
1519	0.42	255.74	272.09	255.48	0.75	10.74	3309.88	2955.59	1291.72
2135	0.42	261.96	276.9	261.69	0.75	13.76	3334.79	2978.93	1211.63
3000	0.41	267.74	281.43	267.45	0.75	17.68	3374.01	3015.92	1144.14

NITROUS OXIDE

METHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.46	181.87	221.04	181.7	0.75	1.72	2879.23	2581.52	1998.4
140	0.45	194.82	229.27	194.68	0.75	2.12	2914.8	2614.7	1896.88
197	0.45	206.56	237.13	206.43	0.75	2.63	2936.49	2635.1	1788.44
277	0.44	217.09	244.46	216.96	0.75	3.31	2972.61	2668.82	1695.42
389	0.43	226.61	251.27	226.42	0.75	4.18	3008.58	2702.43	1606.92
547	0.43	235.34	257.65	235.17	0.75	5.3	3029.79	2722.39	1513.09
769	0.42	243.33	263.6	243.13	0.75	6.76	3065.91	2756.15	1432.77
1081	0.42	250.68	269.14	250.44	0.75	8.63	3086.34	2775.41	1347.31
1519	0.41	257.46	274.34	257.25	0.75	11.07	3122.39	2809.13	1274.73
2135	0.41	263.73	279.17	263.42	0.75	14.2	3142.04	2827.67	1196.89
3000	0.4	269.56	283.72	269.32	0.75	18.27	3177.87	2861.22	1131.19

NITROUS OXIDE

METHANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.39	189.65	229.99	189.48	0.68	1.7	2972.46	2643.27	2015.87
140	0.38	203	238.39	202.85	0.68	2.08	3018.99	2686.73	1913.54
197	0.37	215.06	246.39	214.84	0.68	2.59	3066.05	2730.74	1814.52
277	0.37	225.85	253.8	225.61	0.68	3.24	3088.74	2751.94	1703.86
389	0.36	235.6	260.73	235.39	0.68	4.08	3136.24	2796.41	1616.06
547	0.35	244.5	267.2	244.18	0.68	5.17	3183.69	2840.89	1532.13
769	0.35	252.66	273.21	252.37	0.68	6.57	3206.24	2862.01	1436.93
1081	0.34	260.14	278.84	259.8	0.69	8.39	3253.94	2906.78	1361.86
1519	0.34	267.02	284.05	266.65	0.69	10.71	3275.72	2927.22	1275.66
2135	0.33	273.41	288.98	273.14	0.69	13.74	3323.47	2972.1	1208.45
3000	0.33	279.3	293.52	279.08	0.69	17.61	3344.53	2991.88	1130.28

NITROUS OXIDE

ISOPROPYL ALCOHOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.17	183.64	222.81	183.31	0.75	1.71	2969.99	2645.4	2024.26
140	0.16	196.69	231.12	196.4	0.75	2.09	3038.61	2709.5	1940
197	0.16	208.48	238.98	208.27	0.75	2.6	3063.75	2733.01	1825.84
277	0.16	219.03	246.27	218.92	0.75	3.26	3087.8	2755.5	1717.38
389	0.15	228.54	253.08	228.02	0.75	4.11	3155.7	2819.11	1644.46
547	0.15	237.33	259.51	236.9	0.75	5.21	3181.44	2843.23	1547.03
769	0.15	245.37	265.48	245.04	0.75	6.63	3206.12	2866.37	1454.15
1081	0.15	252.73	271.02	252.26	0.75	8.45	3229.66	2888.44	1365.45
1519	0.15	259.49	276.15	258.82	0.75	10.8	3251.93	2909.34	1280.85
2135	0.14	265.81	281.11	265.11	0.75	13.91	3322.37	2975.58	1227.7
3000	0.14	271.71	285.72	271.13	0.75	17.86	3346.6	2998.36	1151.87

NITROUS OXIDE

ETHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.24	183.2	222.41	183.07	0.75	1.71	2968.99	2650.71	2036.88
140	0.24	196.21	230.65	196.11	0.75	2.1	2992.82	2673	1920.46
197	0.24	207.96	238.48	207.79	0.75	2.61	3016.05	2694.76	1807.63
277	0.23	218.54	245.84	218.39	0.75	3.27	3069.64	2744.82	1721.93
389	0.23	228.09	252.65	227.93	0.75	4.13	3093.16	2766.88	1620.66
547	0.22	236.81	259.04	236.55	0.75	5.24	3146.12	2816.42	1542.91
769	0.22	244.85	265.02	244.66	0.75	6.67	3170.18	2839.01	1451.16
1081	0.22	252.23	270.58	252.02	0.75	8.51	3193.14	2860.58	1363.48
1519	0.22	258.99	275.73	258.66	0.75	10.88	3214.89	2881.02	1279.8
2135	0.21	265.34	280.68	264.43	0.75	13.99	3269.55	2932.28	1218.45
3000	0.21	271.19	285.24	270.95	0.75	17.96	3291.85	2953.27	1142.88

NITROUS OXIDE

PROPANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.16	188.64	228.64	188.4	0.69	1.7	3053.83	2709.31	2058.79
140	0.16	201.91	236.96	201.67	0.69	2.07	3078.69	2732.44	1935.38
197	0.16	213.88	244.85	213.83	0.69	2.57	3102.83	2754.92	1816.09
277	0.15	224.63	252.33	224.22	0.69	3.23	3182.55	2829.82	1743.22
389	0.15	234.35	259.22	234.05	0.69	4.06	3208.2	2853.76	1636.97
547	0.15	243.21	265.63	242.81	0.69	5.13	3232.71	2876.64	1535.34
769	0.15	251.27	271.56	250.69	0.69	6.51	3255.88	2898.28	1438.54
1081	0.14	258.78	277.3	258.21	0.7	8.34	3337.69	2975.47	1383.19
1519	0.14	265.69	282.55	265.26	0.7	10.64	3362.69	2998.87	1296.51
2135	0.14	272.04	287.42	271.49	0.7	13.61	3386.32	3021.01	1213.68
3000	0.14	277.88	291.92	277.11	0.7	17.43	3408.49	3041.78	1134.71

NITROUS OXIDE

HYDROGEN (CRYOGENIC)

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	3.48	227.4	274.74	227.35	0.33	1.66	2172.83	1910.38	1420.26
140	3.37	242.35	283.5	242.3	0.33	2.02	2215.82	1950.23	1343.38
197	3.21	255.64	291.77	255.59	0.34	2.5	2280.8	2010.52	1283.34
277	3.09	267.34	299.31	267.28	0.34	3.12	2332.57	2058.59	1216.99
389	3	277.72	306.18	277.67	0.35	3.9	2373.5	2096.63	1146.97
547	2.89	287.05	312.51	286.99	0.35	4.91	2425.14	2144.64	1086.3
769	2.76	295.43	318.33	295.37	0.36	6.21	2488.82	2203.9	1035.18
1081	2.64	303	323.66	302.93	0.37	7.89	2550.91	2261.74	985.16
1519	2.57	309.86	328.5	309.8	0.38	10.01	2589.74	2297.93	925.33
2135	2.45	316.1	333.02	316.05	0.38	12.79	2657.27	2360.92	882.53
3000	2.35	321.78	337.15	321.73	0.39	16.35	2716.9	2416.59	837.8

HYDROGEN PEROXIDE (100 PC

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.41	190.36	232.62	190.18	1.27	1.78	2722.26	2489.64	2000.65
140	0.41	204.28	241.71	204.07	1.27	2.2	2740.09	2506.72	1905.92
197	0.4	216.98	250.47	216.75	1.27	2.76	2769.94	2535.82	1824.4
277	0.4	228.42	258.62	228.12	1.27	3.49	2787.49	2552.65	1735.44
389	0.39	238.84	266.28	238.55	1.27	4.45	2816.64	2581.12	1660.92
547	0.39	248.42	273.44	248.06	1.27	5.69	2833.67	2597.47	1578.31
769	0.38	257.26	280.19	256.86	1.27	7.33	2861.9	2625.09	1509.15
1081	0.38	265.42	286.48	265.13	1.27	9.44	2878.4	2640.94	1432.55
1519	0.37	272.97	292.39	272.37	1.28	12.22	2905.03	2667.07	1368.26
2135	0.37	280.02	297.93	279.52	1.28	15.81	2921.03	2682.45	1297.24
3000	0.37	286.56	303.09	285.95	1.28	20.49	2935.96	2696.81	1228.47

HYDROGEN PEROXIDE (100 PC

METHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.4	190.18	232.44	190	1.16	1.78	2652.03	2427.43	1953.3
140	0.4	204.05	241.48	203.85	1.16	2.2	2667.61	2442.37	1859.87
197	0.39	216.68	250.16	216.44	1.17	2.76	2694.17	2468.17	1778.27
277	0.39	228.06	258.24	227.79	1.17	3.5	2709.37	2482.76	1690.33
389	0.38	238.39	265.8	238.07	1.17	4.45	2735.12	2507.81	1615.35
547	0.38	247.9	272.87	247.65	1.17	5.7	2749.77	2521.88	1533.56
769	0.37	256.62	279.49	256.13	1.17	7.33	2774.37	2545.85	1463.57
1081	0.37	264.69	285.67	264.28	1.17	9.43	2788.48	2559.41	1387.65
1519	0.37	272.12	291.42	271.62	1.17	12.17	2801.6	2572.03	1314.18
2135	0.36	279.03	296.83	278.31	1.18	15.77	2824.67	2594.56	1251.7
3000	0.36	285.45	301.88	284.81	1.18	20.43	2837.36	2606.77	1183.59

HYDROGEN PEROXIDE (100 PC

METHANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.34	199.54	243.66	199.33	1.06	1.77	2699.63	2463.56	1969.96
140	0.33	213.98	253.05	213.73	1.07	2.19	2735.71	2498.73	1890.78
197	0.32	227.1	262.02	226.7	1.08	2.75	2771.57	2533.73	1813.16
277	0.32	238.94	270.38	238.67	1.08	3.47	2786.61	2548.14	1720.85
389	0.31	249.67	278.21	249.19	1.09	4.42	2822.27	2583.01	1650.54
547	0.31	259.54	285.52	259.22	1.09	5.66	2836.86	2597	1564.8
769	0.3	268.6	292.41	268.35	1.09	7.28	2872.12	2631.54	1500.13
1081	0.3	276.98	298.8	276.52	1.09	9.36	2886.31	2645.16	1420.64
1519	0.29	284.7	304.81	284.43	1.1	12.12	2920.51	2678.74	1361.11
2135	0.29	291.92	310.43	291.41	1.1	15.66	2934.42	2692.11	1287.48
3000	0.29	298.57	315.64	297.83	1.1	20.27	2947.1	2704.3	1216.12

HYDROGEN PEROXIDE (100 PC

ISOPROPYL ALCOHOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.14	192.67	235.41	192.24	1.22	1.77	2735.1	2500.69	2008.29
140	0.14	206.76	244.62	206.4	1.22	2.2	2753.18	2518.01	1913
197	0.14	219.56	253.4	219.16	1.22	2.76	2770.58	2534.68	1819.24
277	0.14	231.08	261.56	230.49	1.22	3.49	2786.86	2550.28	1728.72
389	0.13	241.54	269.29	240.66	1.23	4.45	2837.76	2600.54	1673.47
547	0.13	251.27	276.57	250.47	1.23	5.7	2855.98	2618.04	1591.03
769	0.13	260.2	283.36	259.51	1.23	7.31	2873.19	2634.57	1511.2
1081	0.13	268.43	289.69	267.87	1.23	9.42	2889.33	2650.07	1433.78
1519	0.13	276.01	295.57	275.62	1.23	12.16	2904.32	2664.47	1358.8
2135	0.13	283.03	301.04	282.83	1.23	15.72	2918.14	2677.75	1285.98
3000	0.12	289.52	306.25	287.54	1.24	20.53	2963.87	2723.28	1243.64

HYDROGEN PEROXIDE (100 PC**ETHANOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.21	192.05	234.66	191.5	1.2	1.78	2707.83	2476.13	1988.99
140	0.21	206.06	243.8	205.87	1.2	2.2	2724.59	2492.19	1893.73
197	0.2	218.8	252.58	218.48	1.21	2.76	2764.01	2530.82	1821.33
277	0.2	230.34	260.8	230.09	1.21	3.49	2781.57	2547.67	1732.59
389	0.2	240.81	268.44	240.56	1.21	4.44	2798.09	2563.52	1646.87
547	0.2	250.41	275.59	250.02	1.21	5.68	2813.61	2578.41	1563.45
769	0.19	259.27	282.37	258.78	1.21	7.32	2852.12	2616.29	1503.48
1081	0.19	267.49	288.7	267.09	1.21	9.44	2868.38	2631.92	1426.87
1519	0.19	275.07	294.58	274.69	1.21	12.18	2883.57	2646.52	1352.7
2135	0.19	282.09	300.07	281.53	1.21	15.75	2897.68	2660.08	1280.7
3000	0.19	288.57	305.15	287.83	1.21	20.4	2910.64	2672.54	1210.95

HYDROGEN PEROXIDE (100 PC

PROPANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.14	198.17	241.96	197.89	1.09	1.77	2758.99	2516.33	2010.62
140	0.14	212.54	251.26	212.18	1.09	2.18	2775.32	2531.94	1910.94
197	0.14	225.56	260.11	225.02	1.09	2.74	2790.76	2546.7	1812.9
277	0.13	237.41	268.65	236.83	1.1	3.48	2855.27	2610.36	1763.37
389	0.13	248.14	276.47	247.71	1.1	4.42	2872.43	2626.8	1674.56
547	0.13	257.98	283.77	257.73	1.1	5.64	2888.45	2642.15	1588.13
769	0.13	266.98	290.55	266.93	1.1	7.24	2903.2	2656.29	1504.4
1081	0.12	275.42	297.18	274.33	1.12	9.39	2965.91	2718.51	1465.57
1519	0.12	283.25	303.26	282.32	1.12	12.12	2982.92	2734.85	1389.58
2135	0.12	290.49	308.93	289.76	1.12	15.67	2998.71	2750.01	1315.76
3000	0.12	297.18	314.19	296.21	1.12	20.29	3013.19	2763.93	1244.2

HYDROGEN PEROXIDE (100 PC

HYDROGEN (CRYOGENI(Frozen Frozen

Chamber(psi)	F/O moles	S/L ISP	Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K	Exit T(K)
100	3.26	240.26	291.08	240.21	0.35	1.69	2001	1779.62	1347.87
140	3.14	256.3	300.68	256.25	0.36	2.07	2042.71	1819.48	1284.73
197	3	270.62	309.75	270.57	0.37	2.57	2093.5	1868.09	1229.8
277	2.89	283.27	318.06	283.21	0.38	3.21	2135.3	1908.16	1170.75
389	2.76	294.53	325.71	294.48	0.39	4.05	2186.75	1957.56	1121.56
547	2.64	304.7	332.77	304.64	0.4	5.13	2236.53	2005.43	1072.96
769	2.53	313.88	339.26	313.83	0.41	6.53	2284.25	2051.38	1025.18
1081	2.45	322.21	345.2	322.15	0.42	8.33	2320.48	2086.31	971.97
1519	2.32	329.78	350.75	329.72	0.43	10.7	2381.31	2145.05	937.13
2135	2.25	336.7	355.8	336.65	0.44	13.71	2415.86	2178.46	887.4
3000	2.14	343.04	360.54	342.99	0.46	17.7	2471.66	2232.47	852.96

HYDROGEN PEROXIDE (90 PC)

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	106.38	188.94	230.91	188.79	1.27	1.78	2654.84	2429.61	1954.56
140	104.74	202.72	239.92	202.53	1.27	2.2	2677.02	2451.15	1867.19
197	102.9	215.27	248.54	215.02	1.27	2.77	2699.8	2473.32	1782.31
277	102.95	226.58	256.57	226.31	1.27	3.5	2714.99	2487.88	1694.23
389	101.34	236.85	264.08	236.6	1.27	4.45	2736.21	2508.53	1615.51
547	100.52	246.3	271.12	245.98	1.27	5.7	2753.93	2525.68	1536.52
769	98.95	254.98	277.71	254.64	1.27	7.33	2774.05	2545.3	1463.04
1081	97.38	262.98	283.85	262.52	1.27	9.44	2793.39	2564.16	1391.98
1519	97.56	270.39	289.58	269.97	1.27	12.19	2806.21	2576.45	1318.19
2135	95.79	277.26	294.96	276.68	1.28	15.79	2825.18	2595.01	1252.85
3000	95.74	283.63	299.97	283.13	1.28	20.44	2837.83	2607.19	1184.85

HYDROGEN PEROXIDE (90 PC)

METHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	104.33	188.85	230.83	188.7	1.17	1.78	2596	2376.84	1913.29
140	102.9	202.59	239.77	202.4	1.17	2.2	2615.12	2395.35	1825.52
197	101.36	215.08	248.32	214.85	1.17	2.77	2634.49	2414.11	1739.86
277	101.34	226.33	256.28	226.07	1.17	3.5	2647.86	2426.95	1652.63
389	98.95	236.52	263.71	236.21	1.18	4.45	2669.49	2448.01	1576.4
547	98.9	245.89	270.65	245.6	1.18	5.69	2682.31	2460.34	1495.28
769	97.38	254.48	277.13	254.13	1.18	7.31	2699.91	2477.43	1421.58
1081	96.04	262.39	283.17	261.92	1.18	9.42	2716.17	2493.23	1349.79
1519	95.79	269.69	288.79	269.25	1.18	12.15	2728.39	2505.01	1277.67
2135	95.74	276.44	294.02	275.95	1.18	15.71	2739.18	2515.39	1207.31
3000	94.27	282.7	298.92	282.12	1.18	20.34	2754.5	2530.31	1143.61

HYDROGEN PEROXIDE (90 PC)

METHANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	86.5	197.13	240.79	197	1.09	1.77	2649.83	2420.99	1940.25
140	85.1	211.38	250.02	211.24	1.09	2.19	2673.01	2443.51	1852.41
197	83.63	224.33	258.85	224.16	1.09	2.75	2696.76	2466.61	1767.02
277	82.36	235.97	267.07	235.78	1.1	3.48	2718.81	2488.05	1684
389	81.07	246.54	274.74	246.31	1.1	4.43	2740.75	2509.4	1604.61
547	79.16	256.24	281.94	255.99	1.1	5.67	2766.98	2535.03	1531.84
769	77.9	265.14	288.64	264.85	1.11	7.28	2788.13	2555.65	1457.9
1081	76.83	273.34	294.9	273.02	1.11	9.38	2807.57	2574.59	1385.59
1519	75.69	280.91	300.74	280.52	1.11	12.11	2827.07	2593.61	1316.47
2135	74.5	287.92	306.19	287.43	1.12	15.67	2846.37	2612.47	1250.05
3000	74.47	294.43	311.26	294.06	1.12	20.27	2857.49	2623.17	1179.88

HYDROGEN PEROXIDE (90 PC)

ISOPROPYL ALCOHOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	36.59	191.14	233.57	190.97	1.22	1.78	2668.8	2441.45	1962.48
140	36.04	205.06	242.65	204.87	1.22	2.2	2690.79	2462.8	1874.04
197	35.48	217.72	251.34	217.51	1.22	2.76	2712.86	2484.24	1787.64
277	35.18	229.14	259.45	228.95	1.22	3.49	2731.6	2502.37	1702.06
389	34.62	239.51	267.01	239.27	1.23	4.45	2752.92	2523.12	1622.65
547	34.15	249.04	274.11	248.76	1.23	5.69	2772.86	2542.5	1544.93
769	33.64	257.79	280.74	257.46	1.23	7.32	2792.76	2561.88	1470.49
1081	33.64	265.87	286.93	265.55	1.23	9.42	2806.49	2575.07	1393.66
1519	32.98	273.34	292.73	272.96	1.23	12.17	2827.21	2595.34	1326.26
2135	32.97	280.27	298.12	279.86	1.23	15.74	2840.04	2607.69	1254.83
3000	32.52	286.7	303.19	286.3	1.23	20.41	2857.41	2624.63	1190.34

HYDROGEN PEROXIDE (90 PC)

ETHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	54.06	190.56	232.88	190.39	1.21	1.78	2650.88	2425.75	1950.87
140	53.22	204.43	241.93	204.23	1.21	2.2	2672.45	2446.68	1862.91
197	52.77	217.06	250.58	216.88	1.21	2.76	2691.05	2464.66	1774.13
277	51.94	228.43	258.66	228.21	1.21	3.5	2712.13	2485.14	1691.56
389	51.22	238.76	266.19	238.5	1.21	4.45	2731.94	2504.38	1611.54
547	50.46	248.25	273.25	247.93	1.21	5.7	2751.65	2523.55	1534.36
769	50.46	256.96	279.83	256.67	1.21	7.31	2765.32	2536.68	1455.08
1081	49.47	265.01	286	264.64	1.22	9.43	2785.91	2556.79	1385.08
1519	49.45	272.43	291.73	272.05	1.22	12.16	2798.75	2569.13	1311.46
2135	48.78	279.32	297.11	278.95	1.22	15.74	2816	2585.94	1244.55
3000	48.02	285.7	302.13	285.16	1.22	20.41	2833.13	2602.67	1180.52

HYDROGEN PEROXIDE (90 PC)

PROPANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	36.04	196.02	239.4	195.9	1.1	1.77	2696.77	2462.42	1971.69
140	35.18	210.22	248.64	210.08	1.11	2.19	2725.21	2490.2	1886.71
197	34.69	223.14	257.46	222.99	1.11	2.75	2747.86	2512.22	1798.33
277	33.64	234.77	265.73	234.57	1.12	3.48	2779.05	2542.81	1721.87
389	33.11	245.34	273.42	245.13	1.12	4.43	2801.88	2565.06	1641.5
547	32.46	255.05	280.65	254.79	1.12	5.67	2826.25	2588.89	1565.57
769	32.01	263.97	287.4	263.71	1.13	7.29	2847.3	2609.42	1489.98
1081	31.42	272.21	293.71	271.89	1.13	9.39	2869.99	2631.63	1419.08
1519	31.36	279.82	299.59	279.55	1.13	12.12	2884.41	2645.52	1344.05
2135	30.97	286.89	305.11	286.58	1.13	15.68	2903.32	2663.98	1275.98
3000	30.5	293.46	310.29	293.14	1.14	20.34	2923.02	2683.26	1211.59

HYDROGEN PEROXIDE (90 PC)

HYDROGEN (CRYOGENIC) (Frozen Frozen

Chamber(psi)	F/O moles	S/L ISP	Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	887.36	234.19	283.72	234.14	0.37	1.69	1950.93	1735.02	1313.72
140	862.1	249.8	293.01	249.76	0.38	2.06	1980.99	1763.78	1243.73
197	818.32	263.73	301.84	263.69	0.39	2.56	2035.05	1815.58	1193.99
277	781.39	276.04	309.94	275.99	0.4	3.21	2083	1861.61	1141.99
389	750.66	286.99	317.34	286.95	0.41	4.04	2124.69	1901.7	1087.96
547	715.85	296.88	324.2	296.83	0.42	5.12	2173.89	1949.08	1041.34
769	686.99	305.8	330.48	305.76	0.43	6.52	2216.51	1990.19	992.38
1081	656.84	313.89	336.28	313.85	0.44	8.33	2262.83	2034.92	948.12
1519	625.11	321.24	341.64	321.19	0.46	10.68	2313.66	2084.1	908.91
2135	600.82	327.96	346.56	327.92	0.47	13.71	2354.31	2123.47	865.08
3000	574.74	334.1	351.12	334.06	0.48	17.66	2399.53	2167.32	826.19

HYDROGEN PEROXIDE (50 PC)

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	52.75	179.85	219.73	179.6	1.15	1.77	2284.55	2090.4	1678.24
140	51.94	192.67	227.92	192.27	1.15	2.19	2292.65	2098.3	1592.36
197	51.94	204.27	235.69	203.89	1.15	2.75	2298.05	2103.48	1505.84
277	52.03	214.63	242.85	214.25	1.15	3.47	2302.49	2107.73	1422.2
389	51.22	223.97	249.48	223.39	1.15	4.41	2309.74	2114.81	1344.72
547	51.25	232.48	255.62	231.92	1.15	5.62	2313.91	2118.82	1267.31
769	51.25	240.2	261.27	239.67	1.15	7.19	2317.66	2122.41	1192.81
1081	50.46	247.28	266.51	246.32	1.15	9.22	2323.66	2128.3	1123.42
1519	50.46	253.74	271.32	252.77	1.15	11.85	2327.12	2131.63	1054.91
2135	50.46	259.66	275.75	258.68	1.15	15.25	2330.18	2134.56	989.06
3000	50.46	265.08	279.82	264.1	1.15	19.63	2332.85	2137.13	926

HYDROGEN PEROXIDE (50 PC)

METHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	52.77	180.23	220.19	179.98	1.11	1.77	2272.32	2078.84	1668.18
140	52.75	193.07	228.37	192.83	1.11	2.19	2277.51	2083.83	1579.85
197	51.94	204.68	236.13	204.29	1.11	2.75	2285.21	2091.33	1495.85
277	52.03	215.04	243.29	214.71	1.11	3.47	2289.47	2095.4	1412.35
389	51.22	224.37	249.91	223.8	1.11	4.4	2296.29	2102.06	1334.78
547	51.22	232.88	256.03	232.32	1.11	5.61	2300.36	2105.97	1257.58
769	51.25	240.6	261.67	240.07	1.11	7.18	2303.82	2109.29	1183.15
1081	50.46	247.65	266.88	246.74	1.11	9.21	2309.47	2114.83	1113.74
1519	50.46	254.1	271.68	253.18	1.11	11.82	2312.75	2117.97	1045.38
2135	50.46	260.01	276.1	259.08	1.11	15.21	2315.64	2120.75	979.7
3000	50.46	265.42	280.15	264.49	1.11	19.57	2318.16	2123.17	916.84

HYDROGEN PEROXIDE (50 PC)

METHANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	41.18	184.29	225.13	184.14	1.07	1.77	2306.04	2109.08	1691.4
140	40.55	197.4	233.48	197.17	1.07	2.19	2315.26	2118.07	1605.22
197	40.19	209.25	241.4	208.99	1.07	2.75	2322.37	2124.98	1519.08
277	39.57	219.84	248.71	219.43	1.07	3.47	2330.75	2133.18	1437.83
389	39.64	229.37	255.45	229.05	1.07	4.4	2334.46	2136.72	1355.93
547	39.03	238.05	261.72	237.5	1.08	5.61	2342.2	2144.3	1280.56
769	39.04	245.94	267.48	245.46	1.08	7.18	2345.74	2147.7	1204.76
1081	38.44	253.15	272.8	252.33	1.08	9.21	2352.63	2154.46	1134.97
1519	38.44	259.74	277.7	258.95	1.08	11.82	2355.86	2157.56	1065.21
2135	38.44	265.77	282.21	265.03	1.08	15.21	2358.64	2160.23	998.14
3000	37.84	271.3	286.37	270	1.08	19.6	2364.51	2166.02	936.7

HYDROGEN PEROXIDE (50 PC)

ISOPROPYL ALCOHOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	17.87	181.56	221.83	181.32	1.13	1.77	2313.95	2117.5	1700.51
140	17.86	194.51	230.1	194.31	1.13	2.19	2319.82	2123.14	1611.36
197	17.59	206.23	237.96	205.9	1.14	2.75	2328.17	2131.3	1526.62
277	17.62	216.71	245.21	216.43	1.13	3.47	2332.92	2135.84	1442.2
389	17.34	226.15	251.92	225.7	1.14	4.41	2340.63	2143.38	1364.16
547	17.35	234.74	258.13	234.35	1.14	5.62	2344.97	2147.55	1285.92
769	17.09	242.57	263.87	241.88	1.14	7.2	2351.59	2154.04	1213.05
1081	17.09	249.73	269.17	249.06	1.14	9.24	2355.53	2157.83	1140.83
1519	17.09	256.26	274.03	255.63	1.14	11.87	2358.99	2161.15	1071.42
2135	16.82	262.25	278.54	261.17	1.14	15.28	2364.52	2166.6	1006.86
3000	16.82	267.76	282.69	266.67	1.14	19.69	2367.72	2169.68	943.24

HYDROGEN PEROXIDE (50 PC)

ETHANOL

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	26.81	181.24	221.44	181.03	1.13	1.77	2302.89	2107.18	1691.8
140	26.38	194.16	229.69	193.84	1.13	2.19	2311.42	2115.5	1605.57
197	26.43	205.86	237.52	205.59	1.13	2.75	2316.52	2120.39	1518.06
277	26.02	216.31	244.76	215.86	1.13	3.47	2324.23	2127.93	1436.78
389	26.03	225.72	251.43	225.32	1.13	4.41	2328.9	2132.41	1356.2
547	26.03	234.29	257.61	233.9	1.13	5.62	2333.08	2136.42	1278.17
769	25.63	242.1	263.35	241.46	1.13	7.19	2339.84	2143.04	1205.71
1081	25.63	249.23	268.62	248.61	1.13	9.23	2343.57	2146.62	1133.63
1519	25.63	255.73	273.46	255.15	1.13	11.85	2346.82	2149.75	1064.39
2135	25.23	261.71	277.95	260.67	1.13	15.26	2352.46	2155.29	1000.16
3000	25.23	267.2	282.08	266.15	1.13	19.66	2355.49	2158.2	936.71

HYDROGEN PEROXIDE (50 PC)

PROPANE

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	16.81	184.15	224.99	184.03	1.08	1.77	2342.58	2143.18	1720.33
140	16.49	197.29	233.38	197.1	1.08	2.19	2353.01	2153.4	1634.23
197	16.26	209.17	241.35	208.92	1.08	2.75	2361.75	2161.94	1548.54
277	16.02	219.79	248.71	219.43	1.09	3.47	2370.14	2170.15	1466.3
389	16.02	229.36	255.51	229.07	1.09	4.41	2375.07	2174.89	1384.41
547	15.77	238.08	261.82	237.62	1.09	5.63	2382.9	2182.58	1308.21
769	15.77	246.03	267.64	245.63	1.09	7.2	2387.19	2186.7	1232.01
1081	15.63	253.29	273.02	252.78	1.09	9.24	2392.97	2192.34	1160.33
1519	15.63	259.92	277.96	259.47	1.09	11.88	2396.47	2195.7	1089.86
2135	15.39	266.02	282.56	265.21	1.09	15.3	2402.97	2202.11	1024.96
3000	15.24	271.6	286.77	270.51	1.09	19.72	2407.65	2206.71	961.63

HYDROGEN PEROXIDE (50 PC)

HYDROGEN (CRYOGENI) (Frozen Frozen

Chamber(psi)	F/O moles	S/L ISP	Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	636.31	205.9	249.17	205.88	0.43	1.68	1649.67	1461.81	1098.49
140	601.12	219.52	257.26	219.5	0.44	2.05	1690.67	1501.18	1050.25
197	572.49	231.65	264.85	231.63	0.46	2.54	1725.49	1534.69	998.14
277	538.55	242.35	271.84	242.33	0.47	3.18	1768.56	1576.22	954.89
389	508.88	251.86	278.24	251.84	0.49	4	1807.93	1614.27	911.16
547	477.24	260.43	284.15	260.41	0.5	5.06	1851.79	1656.74	872.39
769	451.58	268.14	289.55	268.12	0.52	6.43	1888.9	1692.74	830.92
1081	423.35	275.13	294.54	275.11	0.54	8.22	1931.4	1734.06	795.05
1519	394.38	281.47	299.14	281.45	0.56	10.53	1976.98	1778.45	763
2135	369.73	287.25	303.37	287.24	0.57	13.54	2017.45	1817.94	729.28
3000	347.45	292.54	307.27	292.52	0.59	17.42	2055.45	1855.08	695.81

NITRIC ACID (LIQ)

RP-1

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	1.02	177.4	216.33	177.04	1.29	1.76	2780.57	2523.79	1999.74
140	1	190.25	224.69	189.87	1.29	2.17	2816.22	2558.21	1913.49
197	1	201.97	232.68	201.58	1.29	2.72	2836.24	2577.24	1815.7
277	0.98	212.51	240.18	212.2	1.3	3.43	2872.05	2611.86	1736.27
389	0.98	222.11	247.16	221.64	1.3	4.36	2891.79	2630.64	1647.18
547	0.97	230.94	253.75	230.43	1.3	5.57	2919.42	2657.24	1568.26
769	0.95	239.06	259.94	238.4	1.3	7.15	2954.53	2691.29	1499.25
1081	0.95	246.59	265.73	246.02	1.3	9.19	2974.07	2709.91	1420.7
1519	0.94	253.57	271.17	252.94	1.3	11.86	3000.95	2735.86	1351.72
2135	0.94	260.05	276.26	259.47	1.3	15.32	3019.34	2753.41	1279.15
3000	0.92	266.11	281.1	265.21	1.31	19.89	3053.54	2786.69	1222.16

NITRIC ACID (LIQ)**METHANOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	1	179.7	219.33	179.45	1.15	1.76	2666.72	2428.68	1935.84
140	0.98	192.7	227.76	192.47	1.16	2.18	2697.14	2457.95	1851.34
197	0.97	204.53	235.82	204.15	1.16	2.73	2720.37	2480.24	1762.67
277	0.97	215.17	243.33	214.76	1.16	3.45	2735.83	2495	1671.72
389	0.95	224.83	250.36	224.35	1.16	4.39	2766.17	2524.24	1596.94
547	0.94	233.7	256.95	233.15	1.17	5.61	2788.78	2545.97	1518.89
769	0.94	241.85	263.08	241.42	1.17	7.19	2803.66	2560.19	1438.26
1081	0.93	249.37	268.83	248.79	1.17	9.26	2825.79	2581.49	1366.57
1519	0.92	256.32	274.21	255.67	1.17	11.94	2847.56	2602.45	1297.84
2135	0.91	262.77	279.25	262.17	1.17	15.44	2868.9	2623.02	1231.71
3000	0.9	268.74	283.95	268.07	1.17	20	2889.69	2643.06	1168.18

NITRIC ACID (LIQ)**METHANE**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.82	189.45	230.88	189.21	1.04	1.75	2764.7	2505.03	1976.47
140	0.8	203.03	239.64	202.68	1.05	2.16	2807.77	2546.58	1895.1
197	0.79	215.38	248	215	1.05	2.7	2837.94	2575.59	1804.69
277	0.78	226.47	255.8	226.07	1.06	3.41	2868.08	2604.59	1718.7
389	0.77	236.53	263.07	236.09	1.06	4.33	2898.18	2633.58	1636.85
547	0.76	245.77	269.9	245.28	1.06	5.53	2928.3	2662.62	1558.31
769	0.75	254.25	276.29	253.7	1.07	7.08	2958.33	2691.59	1483.32
1081	0.74	262.08	282.27	261.45	1.07	9.11	2988.23	2720.47	1411.61
1519	0.74	269.32	287.83	268.88	1.07	11.72	3004.35	2735.85	1332.84
2135	0.73	276.06	293.1	275.52	1.07	15.15	3034.05	2764.57	1267.55
3000	0.72	282.31	298.03	281.7	1.08	19.61	3063.49	2793.06	1205.14

NITRIC ACID (LIQ)**ISOPROPYL ALCOHOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.35	181.53	221.39	181.12	1.22	1.76	2787.71	2531.11	2006.34
140	0.35	194.67	229.89	194.35	1.22	2.17	2806.58	2549.04	1904.95
197	0.35	206.6	237.98	206.08	1.22	2.71	2824.74	2566.3	1805.69
277	0.34	217.37	245.65	216.92	1.23	3.43	2868.05	2608.22	1732.36
389	0.34	227.13	252.73	226.57	1.23	4.35	2886.32	2625.61	1642.01
547	0.33	236.13	259.46	235.48	1.23	5.57	2929.03	2667.04	1575.23
769	0.33	244.41	265.72	243.9	1.23	7.13	2947.65	2684.78	1492.23
1081	0.33	252.02	271.54	251.7	1.23	9.17	2965.14	2701.46	1412.1
1519	0.32	259.14	277.13	258.32	1.24	11.86	3007.89	2743.03	1355.16
2135	0.32	265.74	282.29	265.09	1.24	15.31	3025.74	2760.07	1281.8
3000	0.32	271.84	287.1	271.39	1.24	19.8	3042.38	2775.97	1211.03

NITRIC ACID (LIQ)**ETHANOL**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.52	181.09	220.9	180.85	1.2	1.76	2752.73	2501.56	1986.08
140	0.52	194.19	229.37	193.78	1.2	2.17	2770.27	2518.25	1885.59
197	0.51	206.11	237.51	205.74	1.21	2.72	2804.15	2550.89	1801.65
277	0.5	216.84	245.12	216.32	1.21	3.44	2837.63	2583.19	1721.52
389	0.5	226.59	252.19	226.06	1.21	4.36	2855.34	2600.07	1632.26
547	0.49	235.56	258.88	235.11	1.21	5.58	2888.84	2632.43	1559.29
769	0.49	243.8	265.1	243.11	1.21	7.15	2906.11	2648.9	1476.78
1081	0.48	251.43	270.98	250.86	1.22	9.21	2939.39	2681.11	1410.35
1519	0.48	258.47	276.43	257.64	1.22	11.87	2956.15	2697.1	1334.39
2135	0.47	265.05	281.62	264.63	1.22	15.37	2988.89	2728.84	1273.73
3000	0.47	271.15	286.42	270.67	1.22	19.88	3005.2	2744.43	1203.74

NITRIC ACID (LIQ)**PROPANE**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	0.34	187.85	228.85	187.44	1.07	1.75	2844.03	2572.67	2024.43
140	0.34	201.35	237.52	201.02	1.07	2.15	2862.95	2590.61	1917.97
197	0.33	213.6	245.85	213.09	1.07	2.69	2911.76	2637.89	1840.27
277	0.33	224.64	253.6	224.28	1.07	3.39	2931.07	2656.22	1741.69
389	0.32	234.63	260.88	233.99	1.08	4.31	2979.93	2703.68	1672.65
547	0.32	243.85	267.69	243.38	1.08	5.5	2999.45	2722.22	1582.4
769	0.31	252.28	274.09	251.45	1.09	7.06	3048.11	2769.61	1520.06
1081	0.31	260.14	280.1	259.49	1.09	9.07	3067.86	2788.41	1437.54
1519	0.31	267.36	285.67	266.59	1.09	11.66	3086.3	2805.97	1358.05
2135	0.3	274.12	291.03	273.63	1.1	15.13	3135.65	2854.16	1305.82
3000	0.3	280.41	295.98	279.63	1.1	19.54	3154.42	2872.07	1233.05

NITRIC ACID (LIQ)**HYDROGEN (CRYOGENIC)**

Chamber(psi)	F/O moles	Frozen S/L ISP	Frozen Vac ISP	5% mix err	Density g/c	Ae/At	Chamber T	Throat T(K)	Exit T(K)
100	6.64	238.49	288.74	238.43	0.34	1.68	2076.37	1841.45	1388.4
140	6.41	254.35	298.19	254.28	0.34	2.06	2123.7	1886.31	1324.35
197	6.21	268.49	307.08	268.42	0.35	2.55	2166.76	1927.17	1258.2
277	6.03	280.97	315.22	280.9	0.36	3.18	2207.13	1965.51	1193.31
389	5.79	292.08	322.73	292.01	0.37	4.01	2263	2018.66	1142.36
547	5.6	302.09	329.62	302.02	0.37	5.07	2309.53	2062.97	1086.87
769	5.42	311.11	335.95	311.04	0.38	6.43	2355.48	2106.8	1033.55
1081	5.22	319.29	341.8	319.23	0.39	8.21	2408.61	2157.53	987.12
1519	5.06	326.72	347.16	326.64	0.4	10.48	2453.18	2200.13	937.68
2135	4.82	333.51	352.17	333.42	0.41	13.49	2522.49	2266.48	904.84
3000	4.71	339.71	356.71	339.63	0.42	17.29	2556.5	2299.07	853.52