

PROPELLANT	HF	DENSITY	WEIGHT	MOLES	VOLUME
HTPB	1.2000	.9220	.1300	.0013	.1410
N2O	18.6500	.7220	.8700	.0198	1.2050

GRAM ATOMS/100 GRAMS

H	1.3437	O	1.9905	N	3.9534	C	.9512
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ENTHALPY = 37.02142 DENSITY = .743
 CSTAR = 5268.78

	CHAMBER	THR(SHIFT)	EXH(SHIFT)
PRESSURE (PSIA)	400.000	229.657	14.700
EPSILON	.000	1.000	4.609
ISP	.000	108.268	241.082
ISP (VACUUM)	.000	202.291	268.824
TEMPERATURE(K)	3364.170	3166.285	2147.496
MOLECULAR WEIGHT	26.569	26.892	27.761
MOLES GAS/100G	3.764	3.719	3.602
CF	.000	.661	1.472
PEAE/M (SECONDS)	.000	94.023	27.741
GAMMA	1.250	1.247	1.247
HEAT CAP (CAL)	37.393	37.266	36.085
ENTROPY (CAL)	235.815	235.815	235.815
ENTHALPY (KCAL)	37.021	23.555	-29.747
DENSITY (G/CC)	2.61968E-03	1.61745E-03	1.57584E-04
ITERATIONS	10	3	9

GRAMS/100 GRAMS

H	.05522	.04152	.00260
H2	.24253	.22300	.21961
HO	1.51567	1.15351	.02787
HO2	.00363	.00196	.00000
H2O	8.08404	8.55956	9.51786
H2O2	.00022	.00012	.00000
O	.37743	.23916	.00043
O2	1.20594	.88717	.00191
HN	.00012	.00005	.00000
HNO	.00067	.00034	.00000
HNO2	.00007	.00003	.00000
HNO2	.00006	.00003	.00000
H2N	.00006	.00003	.00000
H3N	.00004	.00002	.00000
N	.00082	.00036	.00000
NO	1.44450	1.01602	.00932
NO2	.00104	.00054	.00000
N2	54.64841	54.85620	55.34306
N2O	.00047	.00025	.00000
HCOOH	.00004	.00002	.00000
CHN	.00003	.00001	.00000
CHNO	.00003	.00001	.00000
CHO	.00039	.00019	.00000
CH2O	.00001	.00000	.00000
CNO	.00001	.00000	.00000
CO	17.14855	16.08584	12.79465
CO2	13.58862	15.28163	20.52298

PROPELLANT	HF	DENSITY	WEIGHT	MOLES	VOLUME
HTPB	1.2000	.9220	.1300	.0013	.1410
N2O	18.6500	.7220	.8700	.0198	1.2050

GRAM ATOMS/100 GRAMS

H	1.3437	O	1.9905	N	3.9534	C	.9512
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ENTHALPY = 37.02142 DENSITY = .743
 CSTAR = 5309.53

	CHAMBER	THR (SHIFT)	EXH (SHIFT)
PRESSURE (PSIA)	1000.000	572.099	14.700
EPSILON	.000	1.000	8.676
ISP	.000	109.611	264.055
ISP (VACUUM)	.000	204.024	285.104
TEMPERATURE (K)	3457.734	3239.922	1786.123
MOLECULAR WEIGHT	26.768	27.068	27.784
MOLES GAS/100G	3.736	3.694	3.599
CF	.000	.664	1.600
PEAE/M (SECONDS)	.000	94.413	21.048
GAMMA	1.247	1.245	1.254
HEAT CAP (CAL)	37.481	37.345	35.276
ENTROPY (CAL)	228.988	228.988	228.989
ENTHALPY (KCAL)	37.021	23.219	-43.078
DENSITY (G/CC)	6.41958E-03	3.96343E-03	1.89623E-04
ITERATIONS	5	3	8

GRAMS/100 GRAMS

H	.04224	.03109	.00021
H2	.22877	.21071	.26212
HO	1.34981	.99230	.00094
HO2	.00439	.00222	.00000
H2O	8.39875	8.83814	9.19103
H2O2	.00036	.00019	.00000
O	.27049	.16192	.00000
O2	.94862	.65428	.00000
HN	.00016	.00006	.00000
HNO	.00094	.00049	.00000
HNO2	.00012	.00006	.00000
HNO2	.00011	.00005	.00000
H2N	.00012	.00005	.00000
H3N	.00009	.00005	.00001
N	.00068	.00035	.00000
NO	1.39726	.94309	.00016
NO2	.00128	.00065	.00000
N2	54.67089	54.89141	55.32869
N2O	.00072	.00037	.00000
HCOOH	.00011	.00006	.00000
CHN	.00006	.00003	.00000
CHNO	.00007	.00003	.00000
CHO	.00067	.00033	.00000
CH2O	.00002	.00001	.00000
CNO	.00002	.00001	.00000
CO	16.68617	15.64384	12.21780
CO2	14.32452	15.98479	21.44183